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## **Social Benefits of Secondary School Farms in Rivers State, Nigeria**

### **Emeya, Salome**

Department of Agricultural Science,  
Ignatius Ajuru University of Education,  
Ndele Campus,  
P.M.B. 5047, Port Harcourt  
Rivers State, Nigeria.  
Tel: 08036723436  
Email: salo\_gee@yahoo.com

&

### **Ojimba, Thankgod Peter**

Department of Agricultural Science,  
Ignatius Ajuru University of Education,  
Ndele Campus,  
P.M.B. 5047, Port Harcourt  
Rivers State, Nigeria.  
Tel: 08037412307  
Email: thankgodjimba@yahoo.com

### **Abstract**

*The purpose of this study was to determine the social benefits of school farms in secondary schools in Rivers State. The study used two research questions and simple random sampling technique for data collection with a total of 560 questionnaires administered to teachers and students. The results showed that 75% of secondary schools in Rivers State had enough farm space and 85.71% of students used simple farm tools for their farm practice. Social benefits derived from school farms include enabling students to develop their farming skills (with mean score of 2.93); helping students form a useful background as future agriculturalists (2.80); helping students appreciate the fact that profitable farming was possible within the provision of available technology (2.73). Over 96% of schools surveyed lacked tractors, harvesters and about 85% of schools visited did not have properly laid out farm plots. Only 23.21% of schools visited had barns and livestock pens, 21.43% of schools had fishery equipment, 22.79% of schools surveyed had well established and managed fish ponds. This study recommended that school management should exploit all avenues to raise funds for procurement of facilities and material inputs needed in the secondary school farms in Rivers State, Nigeria.*

**Key words:** Social benefits; school farms; secondary schools; farming activities; Rivers State Nigeria.

### **Introduction**

In Nigerian secondary schools, agriculture has been recognized as a core curriculum subject. In view of this, Olaitan (1984) outlined certain philosophy regarding agriculture in schools to include (a) honest labour, for example planting seeds and rearing livestock is a worthy activity, (b) the wholesome food produced by agriculture is essential for good health (c) all available land would be utilized (d) standard of living can be raised by improving agricultural input and (e) the rural environment will be improved by raising the standard of living of the community.

The above philosophy of agriculture finds expression on the general and specific objectives of secondary school agriculture curriculum. In Junior Secondary School (JSS), the main objective is to equip students' with introductory vocational skills in agriculture. At the Senior Secondary School (SSS) level, the objectives include to (a) stimulate and sustain students' interest in agriculture,(b) enable students acquire basic knowledge and skills

in agriculture (c) prepare students for further studies in agriculture, and (d) prepare students for occupation in agriculture (West African Examination Council, 2006).

The above objectives are achievable within the provision of stipulated Agricultural Science Curriculum currently being implemented in secondary schools nationwide. A holistic implementation of agricultural science curriculum in secondary schools is expected to embrace classroom instruction and practical experiences which the students in agriculture are exposed to (Adegeye and Dittoh, 1985). Besides, adequate and qualified agricultural science teachers, adequate classrooms, agricultural science laboratory and school farms are prerequisites to teaching and learning of agricultural science in schools. Though the above requirements are complementary, school farms draw more attention in view of the fact that West African Examination Council (2006) recommended that schools must keep school farms where crops are grown with at least one species of livestock, from each of the following two groups: pigs, rabbit and poultry; goat, sheep and cattle and where feasible fish pond.

School farms are expected to have adequate equipment, farm implements/tools, farm structure and regular supply of inputs in addition to farm space to accommodate crops and livestock managed by students under the supervision of their teachers (Ani, 1997). These are the fundamentals of an operational school farm on which students could transfer classroom instruction to practical experiences in the field. In line with this, the school farm offers students the opportunity to acquire knowledge, skills and competencies, and demonstrate farm principles and practices, carry out field experiments which cannot be accommodated in the laboratory (Ani, 1997). In the overall, it caters for the interest of the rural dwellers whose major occupation is agriculture. They aim at giving a utilitarian and comprehensive education to the youths, farm families and others who might be interested in agriculture as a vocation (Adesina, 1982; Grubb and Lazerson, 2005).

In order to establish a well equipped school farm that effectively fits into the above roles, places significant demand on the students, teachers, school management, parents and the immediate community in terms of resources (Pimpa and Suwannapirom, 2008). In response to its increasing stakeholders, school farms in various secondary schools in Nigeria, with the special emphasis on Rivers State, are expanding their activities, roles and proceeds to reach their vested interest.

Consequently, school farms are not just for practical experiences but embracing several other benefits. In view of this background, the study is aimed at determining the social benefits of school farms in secondary schools in Rivers State.

### **Statement of problem**

School farm is one of the prerequisites for effective implementation of agricultural science curriculum in secondary schools. But despite the fact that many secondary schools in Nigeria have the benefit of been sited on government or community land with relatively good space to accommodate a teaching farm, there appears to be a paucity of well equipped school farms for effective teaching and learning in secondary schools (Ladele, 1998).

In Rivers State secondary schools, it has been observed that many of the existing school farms lacked requisite structures, implements and other farm facilities, while in others these facilities are in a state of complete dilapidation consequent to total neglect of practical lessons in the school farms (Ladele, 1998). In some schools, most of the pupils come from rural farm families with a detailed knowledge of traditional agriculture gained from their parents. In some cases, these pupils' expectations from their learning experiences in school agriculture are high. But unfortunately practical experience appears elusive to them due to lack of school farms (Ladele, 1998). In some schools especially in urban areas, pupils have no knowledge of agriculture and so their involvement in practical experiences in the school farm is perceived as a drudge and untidy business. In order to reconcile these extremes of negative attitude calls for a study to determine the social benefits of school farms in secondary school in Rivers State.

### **Significance of the study**

Since the achievement of the occupational orientation of students in agriculture in Secondary Schools could be developed and sustained through their exposure to practical experiences on school farms, this study will reveal the present state of school farms, vis-à-vis the expected facilities needed for effective practical lessons. This will help the school management, agricultural science teachers, students, parents and others to work together towards giving the school farms a face lift to sustain effective curriculum implementation in agriculture.

Moreover the study would identify the social benefits accruable from well established school farms. This will help to raise the interest and proper

orientation of the students in the study of agriculture not just as a school subject but as a prospective field of human endeavour for sustainable employment (Alhaji 2008). With respect to teachers of agricultural science and school management, the study could raise their awareness to invest resources in the school farms as an asset for agriculture curriculum implementation as well as a veritable alternative source of income and image maker for the school.

The findings of the study would provide an orientation for secondary schools to improve on their agricultural science programmes in order to enhance the vocational competence of the students. This would sustain the student's process and environmental habits for a successful transition to the world of works.

### **Objectives of the study**

The main objective of the study was to determine the social benefits of school farms in secondary schools in Rivers State, Nigeria. The specific objectives of the study include to:

- i. identify the nature of school farms in secondary schools in Rivers State, Nigeria.
- ii. determine the social benefits arising from school farms in secondary schools in Rivers State, Nigeria.
- iii. Make policy recommendations an improvement of school farms

### **Research questions**

The following research questions were stated for the study.

1. What is the nature of school farms in secondary schools in Rivers State, Nigeria?
2. What are the social benefits derived from school farms in secondary schools in Rivers State, Nigeria?

### **Literature Review**

Agricultural science curriculum in secondary school is practical oriented, aimed at suitable skill acquisition for a successful transition to the world of work in agri-business endeavours. But, the emphasis of integrating productive work into the educational programme could fail if farm resources

were not available in the schools to actualize the vocational ends to which agriculture curriculum in secondary schools are aimed at. In view of this, Zahardeen (1990) stated that in considering the desirability or otherwise of integrating productive work into the educational programme, a number of relevant questions could be posed, among which are what human and material resources are available in the implementation of agriculture curriculum in schools?

In transforming the agriculture curriculum into practical and/or vocational parlance, various teaching aids, specimen, crop and animal species constitute the major facilities at the disposal of the teacher and students of agriculture (Akpan, 2008). No wonder, Olatitan (1984) stressed that students as well as teachers should beware of the potentials of various instructional materials/farm facilities in the school and should be encouraged to use them in creative ways to further enhance their vocational competence in productive agriculture.

One of such facilities that are of vital importance to any school running agricultural programme is the school farm. Because of the objectives of the school farm in vocational agriculture curriculum implementation, the teachers and students should appreciate the importance of the school farm in translating theory in the classroom into practice. Olaitan (1984) summarized the activities of the school farm into crop and livestock. In crops such exercise includes (a) land preparation (planning, clearing, marking out the plot, bed preparation and tillage operations (b) nursery preparation (c) crop propagation and maintenance (d) harvesting, processing and marketing of crops, (e) seed storage for the next growing seasons and (f) keeping farm records.

In livestock, activities include (a) selection of breeding stock or types of animals to keep, (b) construction of livestock pens/houses (c) rearing the animal i.e. feeding, watering, culling, disease and pest control and (d) sales of animal products.

However, Akubuilu (1991) contended that all aspects of field demonstrations (methods and results) which includes, debeaking of birds, vaccination of birds, application of fertilizer to named crops, preparing pre-nursery and nursery, application of crop protectants are carried out on the school farm.

In view of this, Akubuilu (1991) reported that school farms should be divided into plots, for each student to own a plot and grow crops assigned to him/her

by the teacher while some may rear simple livestock. As a pre-condition for successful implementation of vocational agriculture curriculum in secondary schools, West African Examination Council (2006) reported that each school was expected to have adequate equipment and facilities, farm structure; regular supply of inputs coupled with farm spaces, at least two farm animals to be managed by the students. Akubuilu (1991) identified some of the farm structures and equipment to include poultry houses, animal pens, incubators, tractors, processing mills, etc. Akrofi (1981) contended that the school farm could embody ponds for the class to visit to study the life cycle of frogs and aquarium for the study of fish.

Nnaka (1990) reported that teachers could use vegetation, highlands, lowlands and bodies of water and other physical features in the school farm for instructional purposes in practical agriculture. According to Ojoko (1994), student could observe the feeding habits of livestock, and the wild creatures, listen to the calls of the birds and animals, appreciate the intriguing and hard life of the geologists and seismologists in our forests, taste the flavour of roots, smell the aroma of basil and feel under their feet the springiness of the forest carpets, the fallen leaves. These are all parts of learning in practical terms to which vocational agriculture advocates. Ani (1997) noted that learning takes place faster under natural environment. This not withstanding, man's love for natural beauty has made natural environment a vital element in an ideal school.

Farm tools, equipment and agricultural specimen have been identified as important component of a school farm. Farm tools and equipment expected in schools according to West African Examination Council (2006) include simple farm tools (hoe, cutlass, garden trowel, hand fork, shovel, rake, budding knife), tractors and animal drawn implements (plough, harrow, ridgers etc), harvesting, processing and storage equipment (shellers, dryers, graters etc), livestock and fishery equipment (waterers, feeders, milking machine, nets, hook and line, incubators, egg candler etc) and surveying equipment (measuring tape, ranging poles, compass, chains, pegs etc). The above resources are expected to equip the school farm and ensure that activities carried out in it produce results beneficial and worthwhile to the students, the school and the community at large.

The school farm programme is an important component of secondary school agriculture curriculum. In Nigeria, it holds several social benefits for the students, teachers, school and the community (Salami, 2008). Rao *et al.*

(1990) reported that with diminishing opportunities for formal employment, educational institutions are being encouraged to provide relevant form of education designed to promote self reliance and responsible entrepreneurial capacity for self employment. They however agree that entrepreneurial skill programmes are gaining prominence in the developing nations as efforts towards solving problems related to under utilized human resource and economic decline resulting from lack of employment opportunities in the formal economy (Grubb and Lazerson, 2005; Pimpa and Suwannapirom, 2008) The school farm is fashioned within the principles of entrepreneurial skill development. Some opinion hold it that post-independence educational system in Nigeria placed emphasis strictly on academic excellence rather than acquisition of vocational skills which prepares the individual to allow useful and fulfilling life (Adesina, 1982; Omoniyi and Osunde, 2004)

This was permissible until white collar jobs became so scarce that unemployment became a common phenomenon among school leavers at various levels. Ladele (1998) agreed that unemployment among youth has attained an embarrassing height and analyst have connected this problem to the high level of vandalism, militancy, crime and anti-social acts prevalent in Nigeria today. According to the International Labour Organization (ILO) (2002) more than 70 million young people were unemployed throughout the world, and in the developing countries, national youth unemployment rate of over 30 percent was common.

Since agricultural production cannot primarily be left with the current depleting farming population, it is justifiable to query an educational programme which provides graduates of agriculture who are completely out of place in terms of demonstrating practical vocational skills in farming (Nwanekezi, 2008).

According to Adeboye and Afolabi (1991) citing the national objectives of agricultural education in Nigeria said that agricultural education is to train students so that they will improve their self employment capabilities after school, thus creating jobs for themselves and others. Olaitan (1984) stated that the school farm provides a means by which students can develop their farming skills in planning, management and evaluation of farming enterprise and a useful background for future agriculturalists.

It has been noted that working closely with other organizations, the school farms has helped to develop and form a significant local economy employing approximately 60 people. Ivan (2006) stated that the development and

construction of school farms requires significant labour. Once the farm is operational, 10- 15 employees will work locally on a full-time basis, administering, operating and maintaining the farm.

The school farm programme, if properly executed will be of obvious benefits to the student directly. Ladele and Agbebaku (2006) reported that students would be (a) able to appreciate the practice of farming within the provision of available technology (b) better motivated toward making a career in agriculture (c) appreciative of the profitability of farming as a venture and (d) able to have experiences of different aspects of farming activities.

According to Whyte (2005) the school farm provides awareness on the students of the natural beauty and the gift the green planet has to offer, concern, respect for nature and an understanding of food and land uses, learn respect and care for the earth if they have a direct physical experience nurturing living things, working with their hands and the soil to grow plants. It also offers opportunity for students to meet and work side by side with people in the community who have spent their lives working with and learning from the land. According to Smith *et al.* (2006) the school farm has the following benefits to students: (a) changes in the students' views of the environment, (b) development of scientific farming and environmental knowledge, (c) have more personal relationship with the environment, (d) shift from seeing the environment as an object or a place, to a view characterized by the inter-connectedness of humans and environment, (e) a greater appreciation of the farming enterprises gained, knowledge of scientific and environmental concepts and learning about caring for and helping plants to grow, (f) changes in students perception of farm and farmers as well develop a sound understanding of land and its significance in supporting human life and (g) development of social skills.

### **Methodology**

This study was conducted in Rivers State of Nigeria in 2009. The State is geographically located approximately between latitudes  $4^{\text{oN}}$  and  $5.51^{\text{oN}}$ , and longitudes  $6.49^{\text{oE}}$  –  $7.55^{\text{oE}}$  in the southern part of Niger Delta of Nigeria. Rivers State has an average diurnal temperature of  $32^{\text{oC}}$  and a relative humidity of 78%. The State is characterised by two distinct seasons, wet and dry, which favour the production of tropical crops and rearing of livestock, with a large network of rivers, creeks and their tributaries, all flowing southward into the Atlantic Ocean. Data were collected from both primary and secondary sources. The primary data were collected through personal

interviews and observations with teachers and students in 24 secondary schools in Rivers State, Nigeria. From these 24 secondary schools, 80 agricultural science teachers were randomly interviewed via questionnaires, while 20 senior secondary school students were interviewed in each of the 24 schools visited, giving a total of 480 students administered with questionnaires. Total sample size of those involved in the study was 560 which included teachers and students respectively. Data was analysed using simple percentages in tabular form and four (4) point likert – type rating scale (Ogunniyi, 1990; Garland, 1991).

Strongly Agree	SA	=	4
Agree	A	=	3
Disagree	D	=	2
Strongly Disagree	SD	=	1
Total		=	10
Mean response	=	$\frac{10}{4} = 2.50$	

With the above computation, any mean response up to and above 2.50 were accepted as significant while those below 2.50 were accepted as insignificant. The results were analysed according to the research questions.

## Result and Discussion

### The Nature of School Farms in Secondary School in Rivers State

In Table 1 the percentage response indicating the nature of school farms in secondary schools in Rivers State of Nigeria were presented. The result analysis showed that 85.71% of the respondents said that their school farms possessed various simple farm tools such as hoes, cutlasses, garden trowels, garden forks, spades, shovels and others. This is inline with West African Examination Council (2006) requirements for practical agricultural purposes. The result analysis also showed that enough farm space for all types of farm operations were readily available (75%) in the secondary schools in Rivers State during the period of survey in 2009. This result was in affirmation of the suggestion of Akubuilu (1991) that schools should have enough farm space to be shared amongst students to grow different crops and rearing simple livestock. The study also found out that surveying equipment

(measuring tapes, ranging poles, compass, pegs etc) were available in 66.07% of the secondary schools surveyed in the state in accordance with the requirements of West African Examination Council (2006). Many of the schools surveyed in 2009 had livestock rearing equipment (55.36%) in support of the suggestions of Akubuilu (1991)

However, results on Table 1 showed that large percentage of secondary schools visited (about 96%) lacked tractors, animal drawn implements, harvesters, and equipment for processing while about 14% only had properly laid out farm plots for every student for various aspects of farm activities despite the availability of enough farm space discussed earlier. Many schools lacked fishing equipment (21.43%), farm structure which included poultry houses/barns and livestock pens (23.21%), well established and managed fish pond stocked with local fish species (22.79%). These results were contrary to expectations despite the emphasis of West African Examination Council (2006) and other authors on their relevance (Akrofi, 1981; Akubuilu, 1991).

Table 1 – Percentage response indicating the nature of facilities in secondary school in Rivers State

S/n	Items	Percentage of availability	
		Frequency	Percentage %
1.	Enough farm space for all farm operation	420	75.0
2.	Properly laid out farm plot for every student on various aspect of farm activities	80	14.29
3.	Farm structure which include poultry houses/barn and livestock pens	130	23.21
4	Various simple farm tools such as hoes, cutlass, garden trowel, garden fork, spades	480	85.71
5	Tractors and animal drawn implements (plough, harrows, ridgers, planters, harvesters)	20	3.51
6	Harvesters and equipment for processing (shellers, grinders, mixers, silos, threshers, winnowers, haulers, dryers)	22	3.93
7	Livestock rearing equipment (watering cans, feeding trough,	310	55.36

	milking machines, egg candlers, hatcheries)		
8	A well established and managed fish pond stocked with some fish species (tilapia, ethrobranchus, ethroclarias and clarias).	150	22.79
9	Fishery equipment (nets, hook and line)	120	21.43
10	Surveying equipment (measuring tapes, ranging poles, compass, pegs)	370	66.07
11	Manure/compost pits	260	46.43

### **The social benefits of school farms in secondary schools in Rivers State, Nigeria**

The analysis of social benefits derived from operating school farms in secondary schools in Rivers State of Nigeria were made using the 4 point likert-type rating scale of 10 points grading with a minimum base of 2.50. This means that all points above 2.50 were said to be significant results, while those below were insignificant. Table 2 showed the social benefits attained from school farms in secondary schools in Rivers State during the period under review.

The results of the study showed that school farms enabled students to develop their farming skills with an average acceptance level of 2.93 which helped to form a useful background as future agriculturists (2.80), and also enable the students appreciated the fact that profitable farming is possible within the provision of the available technology in Rivers State, Nigeria (2.73). These results confirmed the reports of Olaitan (1984), Rao *et al.* (1990), Adeboyeve and Afolabi (1991), Ladele and Agbebaku (2006).

Furthermore, results in Table 2, showed that participants in school farm activities were made to appreciate the profitability of farming as a useful venture (2.67), it helped the participants to develop science and environmental knowledge quicker (2.66), develop sound understanding of land and its relevance to support human life (2.62), thereby learn to respect and care for nature and nurturing living things. These results obtained in this study are in positive affirmation with the findings of authors such as Whyte (2005), Smith *et al.* (2006), Ladele and Agbebaku (2006). Some other social benefits acquired by students who participate in school farm activities that were significant and accepted in the study were awareness of the natural

beauty and gift which nature and green planets offer (2.57), developing concern and respect for nature and the understanding of food and land uses (2.55). These findings correlated positively with the outcome of results of Whyte (2005).

**Table 2** – The social benefits of school farms in secondary schools in Rivers state.

S/n	Items	Mean Score		
		Teachers	Students	Mean of means
1.	Enable students to develop their farming skills in the planning, management and evaluation of farming activities	3.05	2.80	2.93
2	Forms a useful background for future agriculturists	2.94	2.65	2.80
3	Helps students to appreciate that profitable farming is possible within the provision of available technology in the country	2.86	2.60	2.73
4	Make participants appreciate the profitability of farming as a useful venture	2.75	2.38	2.67
5	Motivate students towards making a career in agriculture	2.40	2.32	2.36
6	Accords awareness on the students of the natural beauty and gift which nature and the green planet offers	2.60	2.54	2.57
7	Helps individuals develop concern, respect for nature and the understanding of food and land uses	2.60	2.50	2.55
8	Students learn to respect and care for nature and nurturing living things	2.60	2.64	2.64
9	Student learn dignity of labour, how to co-operate and work with people	2.15	2.30	2.23
10	Students develop science and environmental knowledge	2.70	2.62	2.66
11	Changes students wrong perception of farming activities and farmers	2.20	2.15	2.18
12	Develop in students a sound understanding of land and its relevance to support human life	2.67	2.56	2.62
13	Helps students adopt healthy eating habits as a life-long practice	2.40	2.30	2.35

However the results in Table 2 indicated that participation in school farm activities had not changed significantly the students poor and wrong perception of farming activities and farmers (2.18) nor had it made them learn the dignity in labour, how to cooperate and work with other people (2.23). This was because they see farming as a drudge and untidy business (Ladele, (1998). Having a school farm in secondary schools in Rivers State did not motivated students strongly towards making a career in agriculture (2.36), or adopting healthy eating habits as a life long practice (2.35). These results were not in line with the findings of Olaitan (1984), Adesina (1982), Rao *et al.* (1990), Omoniyi and Osunde (2004), Alhaji (2008), Pimpa and Suwannapirom (2008) who reported in their various studies that inclusion of agricultural science and other vocational skills into the school curriculum will lead to further employment after graduation from the institution.

### **Conclusion**

The study was carried out to identify the social benefits of school farms in secondary schools in Rivers State, Nigeria. The major problem that necessitated the study was that despite the fact that many secondary schools in Rivers State have the benefit of being sited in government or community land with relatively good space to accommodate and operate a school farm for effective teaching and learning of the subject, the full social benefits of the school farms are yet to be realized in many secondary schools. Survey design was used while the sample size consisted of 480 agricultural science students and 80 agricultural science teachers in public secondary schools in Rivers State. A structured and validated questionnaire was used to obtain data which were analyzed descriptively using frequencies, percentage and (4) point likert type rating scale.

In conclusion, the social benefits derived from school farms are as follows: (1) Development of farming skills, (2) Forming useful background for future agriculturists, (3) Appreciating the fact that profitable farming is possible within the provision of available technology and as useful venture, (4) Students being aware of natural beauty and gifts of nature, (5) Development of science and environmental knowledge, (6) Having sound knowledge and relevance of land and its uses, (7) Farm space was readily available, (8) Production on school farms was basically carried out with simple farm tools and surveying equipment, (9) Almost all the schools lacked tractors, animal drawn implements, harvesters and processing equipment.

### **Recommendation**

The study recommended that: (i) The school management should exploit every avenue to raise funds for the procurement of farm facilities, equipment and material inputs in the school farm, (ii) The school authorities (management) should seek and encourage other stakeholders in the investment and operation of school farm activities, (iii) Classroom instructions in agriculture in secondary schools should be menable to practical demonstration using the school farm as a serious teaching aid.

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