

Feasibility Analysis of School Farms for Practical Agriculture in Public Secondary Schools in Owerri Agricultural Zone, Imo State

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Abstract: This study examined the feasibility analysis of school farms for practical agriculture in public secondary schools in Owerri Agricultural Zone, Imo State. The study adopted a cost-benefit approach to assess the financial viability of school farm activities over a ten-month period. Data were obtained from selected public secondary schools in the study area. The analysis considered costs associated with farm inputs and equipment, student and teacher training, and farm house maintenance, as well as income from crop and livestock sales. The findings showed total costs of ₦85,000 and total benefits of ₦179,000, resulting in a cost-benefit ratio of 2.11. This indicates that school farms are financially feasible, with every ₦1 invested generating approximately ₦2.11 in benefits. The study concludes that school farms can support practical agricultural education, skill development, entrepreneurship and food production when adequate funding, training, maintenance and stakeholder support are provided.

Keywords: School farm, Practical Agriculture, Feasibility Analysis, Public Secondary School, Owerri Zone.

Introduction: The Agricultural sector is the backbone of Nigeria's food system, providing food, employment and income while supplying essential raw materials to industries. Its contribution to livelihoods and economic growth makes a productive and resilient agricultural sector essential to Nigeria's sustainable development. It also provides opportunities for young people to develop useful skills and earn a living. However, the future of agriculture depends greatly on preparing young people with the knowledge and skills needed to take part in farming and agribusiness. Agricultural education at the secondary school level is therefore important. It should provide students with both classroom knowledge and practical skills. School farms can help achieve this goal by giving students the opportunity to learn and practise farming activities. Practical Farming Activities are hands-on agricultural tasks carried out by students and teachers, including crop cultivation, livestock rearing, poultry production, fish farming, nursery practices, gardening, and other farm related activities (Ezebuike, Onyewuchi, & Okongwu, 2026). It involves learning through direct participation in farming. It includes activities such as land preparation, planting, weeding, applying fertilizers, controlling pests and diseases, harvesting, keeping livestock and selling farm products. Unlike classroom teaching alone, practical agriculture allows students to learn by doing. School farms can serve as places where students apply what they learn in the classroom to real farming activities. With the help of agricultural science teachers, students can take part in crop and livestock production. According to Ubong & Obot, (2026), this can improve their farming skills, problem-solving abilities, confidence and critical thinking while providing opportunities for students to generate income and contribute to institutional sustainability. Recha, Kyule and

Kinuthia (2025) stressed the importance of school-based agricultural activities in helping students develop practical farming skills. This shows that learning through practical activities is important for effective agricultural education. School farms can also help students develop a positive attitude towards agriculture. Some young people see farming as a difficult job with low income and few opportunities. Practical experience can help change this view. When students take part in crop and livestock production, they can see the different opportunities available in agriculture. They can learn that farming can be a source of income and a good business when it is properly managed. Students can also learn about production, marketing and other parts of agribusiness. Idowu (2025) reported that functional school farms can help secondary school students develop entrepreneurial skills through practical agricultural activities. This indicates that school farms can prepare students for future careers and businesses in agriculture. Training is another important part of a successful school farm programme. Students need proper training to know how to carry out farming activities safely and correctly. Agricultural science teachers also need regular training to improve their knowledge and skills. Teachers are responsible for guiding students, planning farm activities and managing farm resources. They also help students understand new farming methods and modern agricultural practices. Training for both teachers and students can therefore improve the quality of practical agricultural education. It can also help students understand sustainable farming methods and the business opportunities available in agriculture. Yunusa, Bello and Aliyu (2025) reported that school gardens can support students' academic performance and agricultural science skills acquisition, showing the value of practical exposure in developing

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agricultural competencies. Similarly, Idowu (2025) identified functional school farm activities as an important means of developing entrepreneurial skills among secondary school students. The condition of farm buildings and other facilities is also important. School farms may have farm houses, livestock shelters, storage areas and other structures. These facilities need regular care and repair to remain useful. Poorly maintained buildings may affect farm activities and reduce the safety of students and teachers. Regular maintenance can help schools protect their farm resources and continue farming activities for a long time. It can also teach students the importance of taking care of agricultural facilities and equipment. Rahaman, Gunu and Abubakari (2025) observed that poorly maintained school gardens may not adequately support agricultural learning throughout the year and stressed the need for adequate support and funding to improve school-based agricultural facilities. The financial feasibility of school farms is therefore important when considering their establishment and long-term operation. A school farm that can generate enough income to support its activities may have a better chance of surviving over time. However, financial returns alone are not enough to determine whether a school farm will succeed. Other factors are also important. These include the availability of land, water, farm facilities, trained teachers, school management support and student participation. Therefore, the feasibility of school farms should consider their financial, educational and operational conditions. The establishment of sustainable school farms is also important in Imo State. Many communities in the state are involved in farming and other agricultural activities. Public secondary schools in Owerri Agricultural Zone are located within communities where agriculture is part of the local economy. School farms can help connect what students learn in school with farming activities in their communities. Students can learn farming methods that are suitable for their local environment. They can also take the knowledge and skills gained from school farms to their homes and communities. School farming programmes may also encourage cooperation between schools, parents, farmers, agricultural extension workers and other stakeholders.

Agricultural Science is taught in secondary schools to help students gain knowledge and practical skills in agriculture. However, many students may not have enough opportunities to take part in actual farming activities. In some public secondary schools, agricultural education may focus more on classroom lessons because of a lack of farm inputs and equipment, inadequate teacher training, poor farm facilities and limited funds. Ejembí, (2019), reported that students may complete their secondary education without gaining enough practical skills in crop and livestock production since they have come to believe that the school farm is not relevant to their success in the subject. Yaro, Shimave and Lan (2025) reported that Agricultural Science teachers in secondary schools require improvement in important farm practices to effectively operate school farms. This confirms that teacher capacity and practical resources are important for effective school-based agricultural education. The lack of functional school farms may also reduce students' interest in agriculture. When students do not have the opportunity to practise

what they learn, they may find it difficult to understand the real value of agriculture. They may also miss the opportunity to develop skills that can help them become farmers or agribusiness entrepreneurs in the future. Where school farms already exist, poor funding and lack of proper maintenance may make it difficult for them to continue operating. Rahaman, Gunu and Abubakari (2025) found that school gardens in senior high schools were in poor condition and did not adequately support agricultural learning throughout the year. They recommended stronger financial support to improve and sustain school garden programmes. The main problem, therefore, is that although school farms can help improve practical agricultural education, develop students' farming skills, promote entrepreneurship and support food production, it is not clear whether public secondary schools in Owerri Agricultural Zone have the resources and support needed to establish and sustain them. There is a need to examine the availability of farm inputs and equipment, the training of students and teachers, the maintenance of farm facilities and the income that can be generated from crop and livestock activities. Therefore, this study examines the feasibility analysis of school farms for practical agriculture in public secondary schools in Owerri Agricultural Zone, Imo State. The study will provide useful information to government, education planners, school administrators and other stakeholders on the resources and support needed to establish and maintain functional school farms. It will also help determine how school farms can improve practical agricultural education and prepare students for future participation in farming, agribusiness and food production. The study assessed the feasibility analysis of school farms for practical agriculture in public secondary schools in Owerri Agricultural Zone, Imo State. The specific objective of the study: examined the feasibility of establishing and sustaining school farms in public secondary schools, Ho: establishing school farms in public secondary schools in Owerri Agricultural Zone is not feasible and cannot be successfully integrated into the existing school infrastructure.

Research Methodology and Study Area: This chapter describes the research methodology employed for the study on feasibility analysis of school farms for practical agriculture in public secondary schools in Owerri Agricultural Zone, Imo State Nigeria. The study area is Owerri Agricultural Zone. Owerri Agricultural Zone is one of the three agricultural zones in Imo State, Nigeria. It is located in the southwestern part of the state and comprises eleven Local Government Areas: Aboh Mbaise, Ahiazu Mbaise, Ezinihitte Mbaise, Ikeduru, Mbaitoli, Ngor-Okpala, Ohaji/Egbema, Oguta, Owerri Municipal, Owerri North and Owerri West. The zone lies within the humid tropical environment and experiences distinct rainy and dry seasons. Its climate and vegetation support various agricultural activities. Major crops grown in the area include cassava, yam, maize, cocoyam, vegetables, oil palm and other tree and orchard crops. Farming is an important livelihood activity, with many households engaged in small-scale and mixed farming. The agricultural characteristics of the zone make it suitable for examining the feasibility of establishing and

sustaining school farms for practical agricultural education in public secondary schools.

Sample Selection: In this study, multi-stage sampling method was employed in selecting the respondents. The first stage was the purposive selection of Owerri Agricultural Zone in Imo State. The purposive selection was based on the fact that the Agricultural Zone has public secondary schools with school farms. The second stage involved a random selection of 13 public secondary schools (out of 134 public secondary schools in Owerri zone) which is 10 percent of the number of public secondary schools in the zone. The third and final stage involved the random selection of 5 students from each of the 13 public secondary schools in Imo State making it a total of 65 students and random selection of one (1) agricultural science teacher from each public secondary school making a total of 13 agricultural science teachers making a total of 78 respondents.

Method of Data Analyses: The objective of the study was analyzed using the Cost-Benefit ratio/Analysis Benefit-cost analysis (BCA) is a technique for evaluating a project or investment by comparing the economic benefits of an activity with the economic costs of the activity. Cost – Benefit Analysis is a very useful tool for making decisions on the allocation of financial resources for investments financed from public or international funds and help ensure efficient use of investment resources in the sectors where benefits are difficult to access. Below is the formula of BCA:

This is the ratio of the sum of the discounted Benefit divided by the sum of the discounted Cost.

$$BCR = \frac{\sum \text{Discounted Benefits}}{\sum \text{Discounted Costs}} \quad \dots\dots\dots \text{Eqn(1)}$$

Important Notes:

If the BCR > 1, Accept the Project

If the BCR < 1, Reject the Project

If the BCR = 1, Accept if it is a social project e.g Govt. Project. But

reject if the project is for profit making.

Results and Discussion of Findings: From table 1 below, the CBR was 2.11. The cost-benefit ratio (CBR) of 2.11 indicates that the school farm is financially viable, as every ₦1 invested generates approximately ₦2.11 in benefits. The net gain of ₦94,000 (₦179,000 – ₦85,000) further demonstrates that the project generates a positive surplus over the ten-month period. The ₦25,000 allocated to student and teacher training can also be regarded as a long-term investment in human capital, as it strengthens agricultural knowledge and practical skills that can be transferred beyond the immediate project. This finding is consistent with Mainje *et al.*, (2024), who emphasized that sustainable school-based food initiatives require long-term institutional support, practical agricultural activities, and investment in capacity development. Similarly, Walker *et al.*, (2024) reported that school gardens can

contribute simultaneously to education, food security, nutrition, career development, and life-skills development. Therefore, the positive CBR and net gain demonstrate the economic feasibility of the public school farm in the Owerri Zone and support its expansion and replication in other school zones.

Test of Hypothesis: The hypothesis was tested using the results from the stated objective which is the feasibility of establishing and sustaining school farms in public secondary schools. The analysis showed that Owerri Agricultural zone had BCR > 1 (2.11). Showing that the possibility of running a public secondary school farm is feasible leading to the acceptance of the hypothesis.

Conclusion: The study concludes that establishing and sustaining school farms for practical agriculture in public secondary schools in Owerri Agricultural Zone is financially feasible. The cost-benefit ratio of 2.11 indicates that every ₦1 invested can generate approximately ₦2.11 in benefits, while the ₦94,000 net gain demonstrates a positive financial return over ten months. Beyond financial returns, school farms can provide students with practical agricultural skills, entrepreneurship opportunities and direct experience in food production. However, sustained benefits depend on adequate funding, regular training, proper maintenance of farm facilities and effective stakeholder support.

Recommendations: Government should provide adequate funding to public secondary schools for farm inputs, equipment and other resources needed to establish and sustain functional school farms. Regular training should be provided for agricultural science teachers and students to improve their knowledge and practical skills in crop production, livestock management and farm enterprise development. School management should ensure proper maintenance of farm facilities and equipment to protect school farm resources and support continuous practical agricultural activities. Schools should strengthen income-generating activities through crop and livestock production and reinvest part of the proceeds into farm inputs, training and maintenance to improve the long-term sustainability of school farms. School farms should be integrated into practical agricultural education and food-production programmes. Students should participate actively in production, harvesting, marketing and management activities so that the farms serve both as learning laboratories and productive enterprises that can contribute to school food supply and student entrepreneurship.

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Table 1: Feasibility Analysis of school farms in public secondary schools in Owerri zone

Category	Amount (₦)
Farm inputs & Equipment	35,000
Students training	10,000
Teacher training	15,000
Farm house maintenance	25,000
Livestock sales income	64,000
Crop sales income	115,000

Field Survey Data, 2026

Total Costs (C) = ₦35,000 + ₦10,000 + ₦15,000 + ₦25,000 = ₦85,000

Total Benefits (B) = ₦64,000 + ₦115,000 = ₦179,000

Cost –Benefit Ratio (CBR) = B/C

CBR = Total Benefit/ Total Cost = 179,000/85,000 = 2.11