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## EXAMINING THE ROLE OF EXTENSION EDUCATION IN AGRICULTURAL DEVELOPMENT: INSIGHTS FROM THE GREEN RIVER PROJECT IN NIGERIA

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### ABSTRACT

Extension education has been recognized as an essential tool for promoting agricultural development and improving the livelihoods of smallholder farmers in many developing countries. This study aimed to examine the role of extension education in agricultural development and assess the impact of the Green River Project's extension programs on farmers' livelihoods in Nigeria. A mixed-methods approach was used, including a survey of 200 smallholder farmers and in-depth interviews with 20 extension agents working with the Green River Project. The results showed that the extension programs of the Green River Project had a significant impact on farmers' agricultural practices, productivity, and income. The study also revealed that the extension agents played a crucial role in disseminating knowledge and providing technical support to farmers. However, the extension agents faced several challenges, including inadequate funding, insufficient resources, and limited outreach to remote areas. This study demonstrates that extension education can contribute to agricultural development and improve the livelihoods of smallholder farmers in Nigeria.

### KEYWORDS

Extension education, Agricultural development, Smallholder farmers, Green River Project, Nigeria.

### INTRODUCTION

Extension education has been recognized as a crucial tool for promoting agricultural development and improving the livelihoods of smallholder farmers in many developing countries. In Nigeria, the Green River Project has been implementing various extension education programs to enhance the productivity and income of smallholder farmers. This study aimed to examine the role of extension education in agricultural development and assess the impact of the Green River Project's extension programs on farmers' livelihoods.

### METHODS

This study used a mixed-methods approach, including a survey of 200 smallholder farmers and in-depth interviews with 20 extension agents working with the Green River Project. The survey collected data on farmers' socio-economic characteristics, farming practices, and their perceptions of the effectiveness of the extension programs. The interviews with extension agents explored their roles, experiences, and challenges in delivering extension services to farmers.

### RESULTS

The results showed that the extension programs of the Green River Project had a significant impact on farmers' agricultural practices, productivity, and income. The majority of farmers who participated in the extension programs reported adopting new technologies and practices, such as improved seed varieties, irrigation techniques, and pest control measures. These practices led to higher crop yields and increased income for the farmers. The study also revealed that the extension agents played a crucial role in disseminating knowledge and providing technical support to farmers. However, the extension agents faced several challenges, including inadequate funding, insufficient resources, and limited outreach to remote areas.

### DISCUSSION

The results of this study provide valuable insights into the role of extension education in agricultural development and the impact of the Green River Project's extension programs on smallholder farmers' livelihoods in Nigeria. The findings indicate that extension education can be an effective tool for promoting agricultural development and improving the livelihoods of smallholder farmers.

The study showed that the extension programs of the Green River Project had a significant impact on farmers' agricultural practices, productivity, and income. Farmers who participated in the extension programs reported using improved agricultural practices, such as better crop management techniques, improved seed varieties, and better pest management. These practices resulted in higher crop yields, which led to increased income and improved food security for the farmers.

The study also revealed that the extension agents played a critical role in disseminating knowledge and providing technical support to farmers. Extension agents were able to build trust and establish strong relationships with farmers, which facilitated the adoption of new agricultural practices. However, the extension agents faced several challenges, including inadequate funding, insufficient resources, and limited outreach to remote areas. These challenges limited the impact of the extension programs on some farmers, particularly those living in remote areas.

In conclusion, this study highlights the potential of extension education to contribute to agricultural development and improve the livelihoods of smallholder farmers in Nigeria. The findings suggest that extension education programs should focus on providing technical support to farmers, building trust

and relationships with farmers, and addressing the challenges of inadequate funding, insufficient resources, and limited outreach to remote areas. By addressing these challenges, extension education programs can help promote sustainable agricultural development and improve the lives of smallholder farmers in Nigeria.

### CONCLUSION

This study demonstrates that extension education can contribute to agricultural development and improve the livelihoods of smallholder farmers in Nigeria. The Green River Project's extension programs have been successful in promoting the adoption of new technologies and practices and enhancing the productivity and income of farmers. However, to sustain the impact of extension education, more resources and support are needed to address the challenges faced by extension agents and ensure that extension services reach remote and marginalized communities.

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