

## IMPACT OF AGRICULTURAL EXTENSION SERVICES ON ADOPTION OF ROOT CROPS TECHNOLOGIES IN ONDO STATE, NIGERIA

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### ABSTRACT

*The study investigated the impact of extension services on the adoption of root crop technologies in Akoko North-West Local Government, Ondo State, Nigeria. Data from 90 randomly selected farmers in nine randomly selected villages were used. Findings show that improved cassava varieties, seed yam minisett technique and cassava rapid multiplication had the highest adoption respectively. This was found to be due to financial gain from the technologies. The study shows low adoption of agronomy practices associated with adopted varieties. The extension was the major source of information for the majority of the respondents, with farmers' field day and small plot adoption technique were the most preferred methods of extension contact on root crop technologies. Contact with extension was found to have a significant relationship with the adoption of only a few technologies and did not have significant relationship with the improved level of production of root crops. The study therefore recommended that extension organizations should consider a number of factors other than contact with farmers for farmers' adoption of new technologies. These include the arrangement of follow-up visits to farmers after adoption for further education on the technologies. For effective technology adoption by farmers, the use of facilitative methods such as farmers' field day and small plot adoption technique were recommended.*

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## 1. INTRODUCTION AND PROBLEM DEFINITION

- The importance of root crops in Nigeria, especially cassava, cannot be overemphasized. As a result of this, the Nigerian Government has launched a programme for increased cassava production in the country to meet the challenges of food sufficiency, export and raw material for industries. Similarly, the continuous scarcity and high cost of yam planting materials has been a major problem in many yam growing areas in Nigeria (Onyenwaku & Mbuba, 1991:26).
- Extension is viewed as the vehicle for transferring appropriate and proven agricultural technologies to farmers to increase food production. The establishment of the Agricultural Development Project (ADP) in almost all the states of Nigeria as the major extension service agency is one of the ways of meeting sufficiency in food production.
- However, in spite of this programme, self sufficiency in food production for the growing population still remains elusive. This is due to many factors that include non adoption of improved technologies by farmers, which may be linked to inefficient extension system. It was observed (Adiele, 1985:3, Okoye, 1986:8 and Yoye, 1990:15) that most rural farmers in many communities where extensive food production is carried out in Nigeria are not aware of certain innovative approaches in farming that have been developed by agricultural research institutes and universities. Raza (1981:12) also reported that the intensity of extension contact with farmers appears to be negligible in the ADP areas. The Nigerian National Root Crop Research Institute in collaboration with the International Institute for Tropical Agriculture (IITA) has released many improved root crop varieties and also the development of miniset seed yam multiplication and cassava rapid multiplication techniques to accelerate root crop production in Nigeria. However, for farming communities to achieve the self sufficiency in root crop production, emphasized by the Nigerian government, agricultural extension has to improve its services by educating farming communities and making sure these varieties are utilized by them.
- The study aimed to determine the impact of extension services on the adoption of root crop technologies in Ondo State, Nigeria.

Specifically, the study aimed to:

- determine the level of utilization/adoption of improved root crop technologies in the study area.
- determine the major sources of information about the technologies.
- ascertain the type of extension services carried out by Ondo ADP and preferred by farmers in adoption of the root crop technologies.

## **2. HYPOTHESIS**

There is no significant relationship between extension contact with respondents and adoption of root crop technologies.

## **3. METHODOLOGY**

The population of the study was the root crop farmers in Akoko North-West Local Government, Ondo State, Nigeria. Based on the information obtained from extension staff of Ondo ADP, we randomly selected 9 villages out of the 17 towns and villages in the local government area. A total sample of 90 farmers made up of 10 farmers who were randomly selected from each village were the respondents in the study. A personal interview schedule that was pre-tested for reliability ( $r = 0.72$ ) was the instrument used for data collection. Interviews were conducted during the growing season at the respondents' farms so as to ensure that the respondents were actually growing the root crops they had adopted. Data were analyzed using descriptive statistics including frequencies and percentages. Chi-square was used to examine the relationship between extension contact with farmers and the adoption of technologies.

## **4. RESULTS AND DISCUSSION**

### **4.1 Level of adoption/utilization of root crop technologies**

The level of adoption/utilization of root crop technologies is shown in Table 1. It is obvious that improved cassava varieties had the highest adoption followed by minisett seed yam technique and cassava rapid multiplication technique respectively. Many of the respondents attributed the high level of adoption of these three technologies to the

high yields of the improved cassava varieties and the financial gain from the seed yam miniset and cassava rapid multiplication technologies that provide planting materials, which farmers rush to buy during the planting seasons. The low level of adoption of sweet potato varieties was attributed to low financial gain. The result confirms the views of Nweke and Akorhe (1983:77) that the opportunity for farmers to see that there is a financial gain in a tested technology helps in decision-making in adopting the technology.

**Table 1: Distribution of respondents according to adoption/ utilization of root crop technologies**

Technologies	Frequency	Percentage (%)
Improved cassava varieties	87	96.7
Improved Sweet potato varieties	23	25.6
Seed yam technology	65	72
Cassava rapid multiplication technique	59	65.6
Improved agronomic practices	28	31.1

*Source: Field Survey*

#### 4.2 Sources of information on root crop technologies

Table 2 shows the distribution of the respondents according to sources of information on the root crop technologies. Just over half of the respondents (53.3%) obtained information from the ADP staff, which indicates contact with extension. This was followed by those who received information from farmer friends (24.4%), indicating that farmers make use of farmer friends a lot for sharing information on new technology. Mohammed and Wenaso (1993:49) reported a result where about 58% of farmers interviewed got their information from farmer friends and relatives.

**Table 2: Distribution of respondents according to information sources on root crop technologies**

Sources	Frequency	Percentage (%)
Farmer Friends	22	24.4
ADP extension staff	48	53.3
Contact farmers (Farmers' representatives)	8	8.9
NGOs	12	13.3

*Source: Field survey*

### 4.3 Respondents' preferred method of extension contact

Table 3 shows the distribution of the respondents according to preferred method of extension contact. The result shows that Farmers Field Day and the use of small plot adoption technique were the preferred methods of extension contact for most respondents. This must have been due to the farmers' participation and the facilitative approach used in these two methods, as farmers had the opportunity of learning by themselves and agrees with the view of Düvel (1995:1).

**Table 3: Distribution of respondents according to method of contact with extension**

Method of extension contact	Frequency	Percentage (%)
Mass media(radio, TV. Etc.)	8	8.9
Personal contact	7	7.8
Farmers' Field Day	42	46.7
Small Plot Adoption Technique (SPAT)	33	36.6

*Source: Field survey*

### 4.4 Relationship between extension contact and respondents' adoption of technologies:

Table 4 shows the relationship between extension contact and the respondents' adoption of technologies. There was a significant relationship between contact with extension and awareness of all the technologies. It is interesting to note that contact with extension only had a significant relationship with adoption of seed yam and cassava rapid multiplication technologies. This result may probably due to the fact that contact with extension alone is not the only consideration factor for adoption, but that the adoption process involves an interrelated series of personal, cultural, social and situational factors including the five stages of awareness, further information and knowledge, evaluation, trial and adoption (Barao, 1992:4 ). Another interesting result in Table 4 was the non significant relationship between extension contact and improvement in level of production. This may be as a result of non adoption of improved agronomic practices associated with these technologies as indicated in Table 1. This may also be as a result of other factors such as lack of the necessary resources required to effectively adopt the agronomic practices. The

adoption of improved varieties alone may not bring about an increase in production but integrated agricultural practices should also be carried out.

**Table 4: Relationship between extension contact and respondents' adoption of technologies (Chi-square Values)**

Variables	Cassava	Sweet Potato	Seed Yam	Cassava rapid multiplication
Awareness of technology	18.5*	28.56*	40.28*	42.5*
Adoption of technology	22.53	40.12	45.14*	46.3*
Improvement in level of production	12.38	12.8	16	15.4

\* = Significant at 0.05 level

## 5. CONCLUSION AND RECOMMENDATION

The study has shown that the extension services provided by Ondo State ADP to farmers in Akoko North-West Local Government area of Ondo State had a positive impact in the adoption of some root crop technologies. The study has also shown that the use of Farmers Field Day and the Small Plot Adoption Technique had a positive influence on the level of adoption of introduced technologies.

Based on the results of the study, it is therefore recommended that:

- Extension organizations should use appropriate contact method that would emphasise more on facilitative approach such as the farmers' field day and the small plot adoption technique, which both involve the participation of farmers.
- After adoption, extension staff should have a follow-up programme on problems encountered by farmers on new innovation so as to provide further information and knowledge that will increase adoption rate and improve level of production.
- Extension staff should consider a number of factors other than contact with farmers for adoption of technologies. These factors include yield, productivity, financial gain and availability of resources required to effectively adopt the technology.

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