

Farmers' Assessment of the Training and Visit Extension System in Central Nigeria: Evidence from Barkin Ladi, Plateau State

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KEYWORDS T & V extension; effectiveness of T & V; farmer-extension contact; agricultural technology adoption.

ABSTRACT The Training and Visit (T&V) extension has been criticized for being top-down, top-heavy, inefficient and ineffective. The purpose of this study therefore was to assess the effectiveness of the T & V extension in Barkin-Ladi Local Government Council (LGC), Plateau State in Central Nigeria. Four specific objectives guided the study. A total of 60,000 farmers who had been in active production between 1986 and 1995 in the LGC constituted the population for the study. A three percent sample (1,800) was randomly selected for the study. A structured questionnaire was used to collect data pertinent to the study. Data were descriptively analysed. Demographically, majority of the respondents were males, aged 25-26 years, and married. Slightly less than 50 percent (43.5%) were literate. Majority had farmed for at least 11 years (53%) and had land holdings almost exclusively by inheritance (96%). Other results of the study indicated that although majority of the respondents had contact with extension agents, most depended on other sources for agricultural information. Respondents reported that the frequency of extension visits were unsatisfactory, but found the information given by extension agents very useful. Majority of the respondents were aware of recommended agricultural technologies. The adoption of fertilizer and improved crop varieties was higher than capital-intensive innovations such as mechanized land preparation and use of fishing gear. Recommendations were made on the basis of major results of the study.

INTRODUCTION

General Background

Generally, in Nigeria the production of food crops was not considered a serious problem before independence and the little support provided by government was directed at export crops, such as cocoa, palm produce, rubber, cotton and groundnut. The first significant indication of food shortages appeared during the first decade of independence. The widening gap between de-mand and supply of agricultural produce and the rise in food prices and decline in foreign exchange earning from agricultural exports since the early 1970s bore eloquent testimony to the decrease in agricultural production. The trend continued well into the late '70s and 80s'. Since then Nigerian agriculture has been unable to regain its enviable pre-independence status.

To counter the decline of the agricultural sector, the Nigerian government has designed a variety of intervention strategies over the years (FAO, 1980). The main thrust of these strategies has been two-fold: first, to increase the supply of agricultural produce to satisfy domestic food needs as well as provide surplus for exports; second, to increase the income of farmers and

improve their standard of living. In spite of the plethora of policies and programs, Nigerian agriculture has continued to perform below expectation.

The Agricultural Development Projects (ADPs), popularly known as *World Bank Projects*, were initiated as enclave projects in 1975. The relative success of the first generation ADPs encouraged the Nigerian government to adopt the ADP system as the main strategy for promoting agricultural development at the small-scale level (Afolayan, 1994).

Statement of the Problem

The T & V extension system was introduced in all the World Bank – assisted ADPs to solve the problems of poor organization, dilution of efforts, inadequacy of training, inappropriateness and untimeliness of messages inherent in the conventional extension system (Benor et al., 1984). According to Damian (1984), the T & V system is based on the premise that a combination of factors, such as the right technology, effective and timely delivery of messages, regular extension-farmer contact, and regular training are prerequisites for an effective agricultural development program.

Results of recent evaluation of the effectiveness of the T&V extension have been mixed. Blackburn (1974) found that in Thailand, two years after the introduction of contact farmers, a key element in T&V extension, their effectiveness declined whereas in Indonesia the reverse was the case. Abalu and Yayock (1980) reported that the low rate of agricultural technology adoption was usually due to two main reasons: inappropriateness and limited access to recommended technologies.

According to Patel (1980), extension in Nigeria is at the cross-roads, mainly because of the centralization of farmer-level extension functions in the village extension agents (VEAs) who are expected to be *Jacks-of-all trades and masters of all*. Consequently, this study was undertaken to determine the effectiveness of the T&V extension in Barkin-Ladi LGC, Plateau State, Nigeria.

PURPOSE AND OBJECTIVES

The purpose of the study was to determine the effectiveness of the T&V extension in Barkin-Ladi LGC, Plateau State. Specific objectives were to:

1. Identify the demographic characteristics of the extension clientele in Barkin-Ladi LGC.
2. Determine farmer-extension contact in Barkin-Ladi LGC.
3. Determine the level of agricultural technology adoption in Barkin-Ladi LGC.
4. Make policy recommendations based on results of the study.

METHODOLOGY

Area of Study

Located 54 km from Jos, the Plateau State capital city, Barkin Ladi Local Government Council (LGC) has a population of 154,808 and an area of 1,313 km². It has an agrarian economy that produces potato, maize, sorghum, cabbage, lettuce, carrots and tomatoes in commercial quantities.

Populations and Sample

All farmers who had been in active production between 1986 and 1995 in the LGC constituted the sampling frame for the study of the 60,000 farmers who were eligible to participate in the study, 1,800 (3%) were randomly selected.

Data Collection and Analysis

A questionnaire, developed on the basis of

relevant literature and field experience, was used to collect pertinent data. Demographic and situational characteristics of farmers, extension-farmer contact, and agricultural technology adoption data were collected. Frequency distributions and percentages were used to analyze the data.

RESULTS AND DISCUSSION

Results and discussion of the study are presented in three sections, namely: 1) demographic characteristics; 2) extension-farmer contact, and 3) agricultural technology adoption.

Demographic Characteristics

Demographic characteristics of the respondents are presented in Table 1.

Majority of the farmers (70%) were males, an indication that the traditionally recognized "visible" human input in the agricultural sector is the male contribution. The observation supports the view that agriculture continues to be a male preserve (Ejembi, 1988) and that the involvement of women's work is invisible and unrewarded (Ejembi et al., 1996). Although it is clear that women are responsible for at least 70 percent of the farming activities in almost all communities in Nigeria (Okorji, 1985; Hirschmann, 1985; Spiro, 1981), their representation in formal agricultural activities, such as extension, is negligible (USDA, 1984).

Age

Farmers aged 26-45 years constituted the bulk (91%) of the respondents. The relative youth of the farming labor should provide a favourable environment for the adoption of recommended farm practices. This is because, compared to their elders, younger farmers tend to be better educated, less risk averse, more cosmopolitan.

Marital Status

Most (90.5%) of the respondents were married; a fact that may suggest a high degree of level headedness and a great capacity for sound rational decisions among the farmers in the present study. This factor is likely to encourage the sustainability of adoption decisions.

Education

It was found that a total of 43.5 percent (783) were literate compared to 56.5 percent (1017) who

Table 1: Demographic characteristics of the respondents

<i>Characteristics</i>	<i>Number</i>	<i>Percentage</i>
<i>Sex</i>		
Male	1260	70.0
Female	540	30.0
Total	1800	100.0
<i>Age</i>		
26-35	774	43.0
36-45	864	48.0
46-55	90	5.0
56+	72	4.0
Total	1800	100.0
<i>Marital Status</i>		
Single	45	2.5
Married	1629	90.5
Other	126	7.0
Total	1800	100.0
<i>Education</i>		
None	1017	56.5
Adult Education	450	25.0
Primary	225	12.5
Secondary	90	5.0
Post Secondary	18	1.0
Total	1800	100.0
<i>Farming Experience (years)</i>		
1-5		15.5
6-10		31.5
11 and above		53.0
Total		100.0
<i>Land Tenure</i>		
Inheritance	1728	96.0
Purchase	27	1.5
Lease	45	2.5
Total	1800	100.0
<i>Farm Size (ha)</i>		
<0.9	432	24.0
1.0-1.9	810	45.0
2.0-2.9	558	31.0
3.0-3.9	180	10.0
4.0-4.9	0	0.0
5.0 and above	0	0.0
Total	1800	100.0

were not. The low literacy level is a reflection of the well-known rural-urban migration that robs the rural areas of the educated and semi-educated youth. A situation in which the preponderance of farm labor force is illiterate is not favourable to agricultural development. Okorji (1985) had earlier reported that the increase in the rural-urban migration of youth is one of the most important factors of low agricultural productivity in the country. It is generally assumed in Nigeria that primary agriculture is a low-status vocation fit only for illiterates and school drop-outs unable to find employment elsewhere (Fafunwa, 1974). Results of this study do not contradict this view. Madamba (1973) indicated that the process of technology transfer should not focus only on

the transfer of innovations but also on the transfer of scientific and managerial skills. Farmers need to be literate to respond rationally to new technologies.

Farming Experience

More than 50 percent (53%) had at least 11 years of farming experience. That a considerable proportion of farmers in the sample had more than a decade of farming experience suggests that most people in the area must have started farming in their youth and regard it as a way of life. The length of experience in farming is probably an indicator of a person's commitment to agriculture. It may not necessarily predispose him to adoption of new practices; it is more logical to expect veteran farmers to be less receptive to extension messages. The observation is a strong case in favour of the need for government at all levels and other organizations interested in agricultural development to design more effective strategies to attract youth to agriculture and help them to make a career of it.

Land Tenure

Most of the respondents (96%) acquired their farmland by inheritance, an indication that majority were indigenous farmers. The fact that most of the farmers were indigenes of the area may ensure the sustainability of adopted practices, but it may be necessary to liberalize the land tenure system so as to guarantee even non-indigenous access to land, especially for agricultural development.

Farmer-Extension Contact

Farmer-extension contact data are as presented in Table 2.

Awareness of Extension Services

Almost all the respondents (96.5%) knew the village extension agent (VEA) who was responsible for the delivery of extension messages in their communities, a key aspect of the required farmer-extension contact. The observation here clearly indicates that awareness of the Plateau Agricultural Development Project (PADP) extension services was widespread (Wash, 1997). Knowledge of the VEA serving a community means that the agent can be easily contacted whenever production and other

Table 2: Farmer-extension contact.

<i>Factor</i>	<i>Number</i>	<i>Percentage</i>
<i>Frequency of visits</i>		
Very often (fortnightly)	432	24.0
Often (once a month)	108	6.0
Occasionally (Irregular)	900	50.0
Never	360	20.0
Total	1800	100.00
<i>Adequacy of Visits</i>		
Adequate	450	25.0
Not adequate	1350	75.0
Total	1800	100.0
SPAT Established ¹	1,355	
Farm Families/VEA ¹	3,650	
Cost/Farm Family (N)	20.90	

¹ PADP. 1997. Physical Achievement Report.

assistance is needed. Although information diffuses much faster among farmers through interpersonal communication channels, their ability to get timely information to solve specific production problems depends on direct access to extension agents.

Frequency and Adequacy of Extension Visits

Respondents reported that the frequency of extension visits were very often (24.0%), often (6.0%), occasional (50.05), and non-existent (20.0%). Given this situation, an overwhelming majority (75.0%) indicated that the visits were not adequate; only 25 percent expressed satisfaction with the visits. Further indication of the inadequate farmer-extension contact was the ratio of farm families per VEA. Each VEA was responsible for about twice the number of farm families he should visit on a regular basis. This meant that most of the farmers had to rely on "second-hand" information from contact farmers for whom SPATs were established. The dissatisfaction with extension visits has implications for provision of effective extension services to farmers.

As key components of an effective services (Ejembi et al., 1996), the two-way communication, mutual trust and understanding that develop in such a social interaction greatly facilitate extension message dissemination and positive response. It is important for the PADP extension personnel responsible for agricultural development in the Local Government to bear in mind at all times.

Almost 100 percent (97%) of the respondents indicated that the information given by their VEA was useful. Respondents further revealed that,

as a result of their interaction with VEAs, they could appreciate their problems better and understand the reasons for their success or failure as farmers.

Sources of Extension Information

As revealed in Table 3, respondents reported that the most important sources of extension information were friends/relatives (75%), radio (60%), contact farmers (53%), extension agents (43%), field days (38%) and posters (12%).

Data in Table 3 underscores certain basic facts of effective extension communication.

Table 3: Sources of extension information

<i>Information source</i>	<i>Number¹</i>	<i>Percentage</i>
Extension Agent	776	43.0
Friends/Relatives	1350	75.0
Radio	1080	60.0
Contact Farmers	954	53.0
Field Days	684	38.0
Posters/Pamphlets	216	12.0
Television	54	3.0
Total	5,112	284.0

¹ Total exceeds 1,800 and 100% due to multiple responses.

One, peer and family relationships greatly influence the dissemination of agricultural messages, an emphasis of the social dimension of agricultural technology transfer (Lionberger and Gwin, 1981; Ejembi et al., 1996). Two, the comparatively fewer number of farmers for whom contact farmers served as a source of extension information raises the question of the representatives of contact farmers. In most communities the criteria used for the selection of contact farmers are material well-being and *progressive farmer* status. Such farmers may be socially distant from majority of the farmers, thereby inhibiting the trickle-down effect of the agricultural dissemination strategy in which the contact farmer is the key factor. Three, illiteracy continues to be an important negative influence on agricultural development. A farmer that can read and write can follow the directions for adoption of a recommended practice more effectively. Adult basic education (ABE) is a necessity for any meaningful rural development program and should be seriously considered by the PADP as a major need of farmers in the area. Finally, as Williams (1978) put it, an extension service is only as effective as the communication between researchers, extension agents and farmers.

Awareness and Adoption of Recommended Practices

The recommended practices that had the highest level of awareness were, in descending order (Table 4): fertilizer use (85.0%), improved crop varieties (65.0%), control of small ruminant parasites (50.28%), and use of chemical preservatives (47.22%).

The level of awareness of recommended practices reflects the initial institutional emphasis of the Plateau ADP at inception and the subsequent development of the culture of dependence on inorganic fertilizer. PADP embarked on the

Table 4. Awareness and adoption of recommended agricultural responses

<i>Recommended Practice</i>	<i>Aware</i>	<i>Adopted</i>
Improved crop varieties	1170 ^a	702
Crop spacing	1134	567
	60.0	50.0
Fertilizer use	1530	1377
Herbicide application	630	70
	35.0	11.11
Mechanical land preparation	750	60
	41.67	8.0
Use of chemical preservatives	850	102
	47.22	12.0
Small ruminant parasite control	905	272
	50.28	30.05
Use of appropriate fishing gear	558	28
	31.0	5.0
Erosion control	450	99
	25.0	22.0

^a Numbers represent frequencies, including multiple responses.

^b Numbers represent percentages.

^c Numbers represent a proportion of "aware" category.

introduction of high-yielding and disease-resistant crop varieties as soon as it was established. The emphasis on crop production, almost to the exclusive of livestock, followed the norm in other ADPs where extension is almost synonymous with crop extension. Relatively low awareness level of mechanized land preparation (41.67%), herbicide application (35.0%), use of appropriate fishing gear (31.0%), and erosion control (25.0%) was observed. The observed awareness and adoption levels of the recommended agricultural practices in this study reflected the adoption behaviour of small-scale farmers. One, small-scale farmers are resource-poor and find it difficult to adopt capital-intensive innovations, such as mechanized land preparation and use of appropriate fishing gear with 8 and 5 percent, respectively, of the respondents. Second, adop-

tion of preventive innovations, such as erosion control (22.0%), use of chemical preservation (12%), and herbicides (11.%) tends to be low due to fatalism. The belief that a person's destiny is predetermined and, therefore unchangeable, seems to motivate most farmers not to adopt preventive technologies. Third, innovations, such as fertilizer and improved crop varieties, which have immediate demonstrable results, are more readily adopted compared to those that are capital-intensive, preventive, and requires a long gestation period before observable changes.

SUMMARY AND CONCLUSIONS

The results of this study showed that majority of the farmers in Barkin-Ladi LGC were males and that more than 50 percent were illiterate. The farmers were relatively young, aged 26-45 years, and had been farming for at least 11 years. More than 75 percent of the farmers acquired farmlands by inheritance.

Although majority of the farmers in the area knew the extension agents, only a few used them (extension) as sources of information, since most depended on friends/relatives and radio as their sources of agricultural information. Respondents were not satisfied with the frequency of visits by the extension agents, as 50 percent reported being visited occasionally. However, the few farmers visited found the information given to them very useful.

Majority of the farmers were aware of the improved agricultural practices recommended by the ADP, but the introduction of high-yielding and disease-resistant crop varieties to the exclusion livestock innovations. Most of the farmers adopted fertilizer and improved crop varieties have relatively immediate results, whereas capital-intensive innovations, such as mechanized land preparation and use of appropriate fishing gear were poorly adopted.

RECOMMENDATION

Based on results of the study, the following recommendations are made:

1. In order to enhance agricultural production, more women farmers should be selected as contact farmers in the area.
2. Adult Basic Education (ABE) programs should be organized for farmers in the area in order to facilitate a faster rate of adoption of recommended practices.

3. The individual contact approach of reaching farmers with extension information and for the purpose of teaching farmers improved farm methods should be overhauled. The individual contact approach should be replaced with the group contact approach.

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