CONSTRAINTS IN THE IMPLEMENTATION OF CROP PROTECTION EXTENSION SERVICE IN SOUTH EASTERN NIGERIA

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ABSTRACT

Implementation of crop protection extension service in South Eastern Nigeria is mainly by the extension services sub-programme of the States' Agricultural Development Programme (ADP). This they do using the Training and Visit (T&V) extension system. Reports however, indicate general dissatisfaction and ineffectiveness in achieving crop protection targets. Specific constraint factors identified as limiting the implementation of crop protection extension service in the South Eastern Nigerian include: poor management of research information, poor criteria in input distribution, excessive workload on the extension agents and inadequate number of qualified crop protectionists as extension workers. Measures recommended as necessary in improving crop protection extension service include: adequate funding and employment of more qualified research personnel for proper sourcing and management of research information; basing distribution of needed inputs on full time farming criterion, involving more crop protectionists in extension work, removal of non-extension function from extension, provision of logistic supports and periodic staff training on crop protection extension methodology, communication, programme planning and social system.

INTRODUCTION

Food and fibre supplies have been grossly inadequate in Nigeria. This obviously cannot be attributable to scarcity of cultivable land. The soil map of Nigeria reconnaissance report (1990) stated that out of the country's total land area of 92.4 million hectares the total cultivable land is 65 million hectares, representing about 70% of the total land. It also stated that about 37 million hectares are under cultivation representing about 40% of total land area or 57% of the total cultivable land area. One of the reasons for the short fall in food and fibre supplies is therefore no doubt the poor crop yield. Apart from genetic problems of the varieties in use, diseases are known to play crucial role in the determination of yield and yield components (Neergaared, 1970). In many areas where food and fibre crops are

grown in Nigeria, crop diseases have been known to lead to heavy losses (Iloba, 1979). To reduce these heavy losses, and produce adequate food and fibre for both rural and urban requirements, the farmers must be educated on how best to protect their crops. This task to educate farmers lies squarely on the shoulders of the agricultural extension services. According to Idachaba (1985), the role of extension services in agricultural development is to assist the rural farmers through educational procedures to attain the desired incremental food and fibre production.

The World Bank (1990) also stated that the basic function of extension in agricultural development is to enhance the capacity of farm families to deal with their agricultural related problems and meet new opportunities through information transfer. Ekpere (1973), Williams (1978) and Olayide (1986), however observed that the Ministry of Agriculture's extension service have proved ineffective because the implementation of its programmes had been characterized by unnecessary bureaucracy with little emphasis on research –extension-farmers linkage. To solve this problem, the Agricultural Development Programme (ADP) based on the Training and Visit extension management system in Nigeria was initiated. According to Oyaide (1984), this was to achieve a re-organized and revitalized extension system that integrates extension workers training, farm visits, and ensures two way communication between research and farmers and an effective input distribution system. Available information (Madukwe, 1989 and Eziakor, 1996) however indicated that the implementation process of the training and visit extension system with respect to crop protection for increased food and fibre production has been very slow and ineffective. Madukwe (1990) noted that the basic contentions for achieving success are lacking and that there exists serious doubts in the effectiveness of locating and processing research information, provision

of needed inputs to the farmers, extension workers training and visits as well as proper involvement of crop protection extension services in South Eastern Nigeria. To clear these doubts therefore, specific questions as to what factors constrain the implementation of crop protection extension service in South Eastern Nigeria need to be answered. The objectives of this study therefore were to:

1. identify constraints in locating and processing crop protection research information.

2. determine constraints in providing needed crop protection inputs to the farmers

3. identify constraints in the training and visits of crop protection extension staff.

4. determine constraints involving professional crop protectionist in agricultural extension service

5. make recommendations based on the findings of this study on effective crop protection Extension service to the farmers

METHODOLOGY

This study covered the seven of South Eastern Nigeria namely Abia, Anambra, Akwa Ibom, Cross River, Ebonyi, Enugu and Imo States. In these States the Agricultural Development Programme (ADP) has the mandate to carry out extension services to the rural farmers Seven hundred and twenty-eight (728) staff members of each state ADP were used. This gave a total population of 5096 ADP staff members for the seven States.

Multi-stage stratified random sampling technique was used. The ADP Headquarters and all the Agricultural zones (21) were purposely included. Six extension blocks from each state zone were randomly selected. This was

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followed by random selection of five extension circles for each of the blocks involved.

The sample comprised the following principal officers at the Headquarters offices, the Chief Extension Officers, Directors of Human Resources and Development, Chief Technical Officers, Chief Commercial Officers, Chief Seed Officers, Commercial Managers and Principal Training Officers. At the zonal level all the Zonal Research Officers, Zonal Commercial Managers, Subject Matter Specialists and Quality Control Inspectors were involved. At the Block level, six Block Extension Supervisors per Zone were randomly selected. This gave a total of 42 Block Extension Supervisors for the seven States from each block. From each block, five Extension Agents were randomly selected. On the whole a total of 728 respondents constituted the sample size for the study.

The instrument for data collection was a structured questionnaire sectioned A, B, C, D, E and F. Section A considered the location of wok place, educational qualification, areas of academic specialization and Local Government Areas of origin of the respondents. Section B sought information on the possible constraints in locating and processing crop protection research information. Section C focused on the constraints in providing the needed crop protection inputs to the farmers. Section D and E sought information on the constraints in extensions staff training visits to the farmers respectively. Section F focused on knowing the constraints in the involving professional crop protectionists. The questionnaire was administered on 5096 ADP staff respondents who were allowed some time to study and complete the items of the questionnaire. Completed

questionnaire were collected and a five point Likert type scale was used to determine the magnitude of the expressed constraints and values assigned as follows:

To a very high extent	=	5
To a high extent	=	4
To some extent	=	3
To a small extent	=	2
To a very small extent	=	1

Data collected were analysed using factor analysis and one-way analysis of variance (ANOVA) at 5% level of probability. The exploratory factor analysis using the principal factor loading under each constraint (beta weight) represents a correlation of the variables (constraint areas) to the identified constraint factor and has the same interpretation as any correlating coefficient. Kaiser's criterion using factor loading above 0.30 in naming and interpreting the factors and constraint variables was adopted (Child, 1978; Ogunfiditimi, 1979).

RESULTS AND DISCUSSIONS

Results of this study revealed that the educational qualification of the extension workers in South Eastern Nigeria ranged from Ordinary National Diploma (OND) in General Agricultural to Doctorate Degree (Ph.D.) in different disciplines in Agriculture. This shows that these extension workers possessed basic academic qualification for result-oriented work in agricultural development programmes. Hence low educational qualification cannot be said to be responsible for the low and ineffective implementation of crop protection extension services in the area. Inadequate funding and poor management of research were however observed to be constraints in locating and processing crop protection

research information. Noted specific issues are aggravating inadequate funding were: long distance to research institutes, farmers' reluctance to provide land for research and farmers' failure to devote required time for adaptive research (Table 1). Long distance to research institutes affected the cost of getting research results. This loss of interest contributed to farmers' reluctance to provide land and hence did not participate in adaptive research. Ijere (1992) stated that adequate funding is greatly needed for effective sourcing of research information for the farmers. This is because the more realistic the funding, the more committed the research personnel will be in sourcing appropriate technology and providing timely technical information to enhance change among the farmers. Poor management of research was noted to be caused by three major factors. These include: inadequate qualified crop protection personnel for research; research not emanating from

farmers' field problems and available technology not being suitable to farmers farming systems (Table 1). Research not emanating from the farmers field may be due to poor identification of field problems, which often was caused by lack of qualified crop protection research personnel.

Provision of needed crop protection provision of needed crop protection inputs to farmers was also noted in this study to be constrained by poor "Distribution Criteria" and "Poor conditions of the farming communities". Irregularity in the supply of disease resistant/tolerant crop varieties' distribution of agrochemical to non-farmers, and ineffective distribution system characterized the input distribution pattern in south Eastern Nigeria (Table 2). These poor distribution criteria grossly limited adequate provision of crop protection extension service to farmers. Goods feeder roads,

Table 1: Varimax Rotated Constraint Factors in Locating and Processing Crop Protection Research Information

Constraint Variable to locating and Processing Crop	Factor 1 (Inadequate Funding)	Factor 2 (Poor Management of Research).
Technology not suitable to Farmers' Farming system.	0.12	0.64
Farmer's Failure to devote the required time for adaptive researcher	0.53	.0.01
Research not emanating from Farmers' field problems.	0.25	0.56
Long distance to research institutes	0.54	-0.18
Inadequate materials for adaptive research.	0.45	0.16
Inadequate mobility facilities	0.33	0.20
Inadequate monitoring of research set ups	0.21	0.43
Poor maintenance of established field trials.	-0.08	0.55
Farmers' reluctance to provide land for research	0.63	0.12
Inadequate qualified personnel for research	-0.04	0.66

Table 2: Varimax Rotated Constraint Factors in Providing Needed Crop Protection Inputs to the Farmers

Constraint Variable to Providing Needed Crop Protection Inputs	Factor 1 (poor distribution)	Factor 2 (Poor conditions of Farming).
Ineffective distribution system of crop protection inputs	0.16	0.01
Irregularity in supply of crop protection inputs	0.72	-0.03
Distribution of agrochemicals to non-farmers.	0.69	-0.06
Inadequate provision of natural protectants	0.53	0.23
Inadequate provision of disease resistant crop varieties.	0.59	-0.07
Poor storage facilities	-0.07	0.64
Lack of accessible roads to farming communities	0.09	0.78
High cost of inputs	0.50	0.04
Delay in fertilizer allocation	0.53	0.23
Delay in release of capital	0.35	0.16

transport, storage facilities for inputs which enhance effective distribution of crop protection inputs were obviously grossly inadequate in the farming communities of the study area. Fadayomi (1988) stated that good feeder roads, transport and storage and storage facilities are important for effective input provision and food production. Also identified as contributing to ineffective crop protection extension service in South Eastern Nigeria were the constraints in training extension workers for crop protection. Such observed constraints include lack of training incentives and facilities. Training incentives identified as limiting to extension staff training were lack of technically competent training personnel, training not being related to crop protection and poor extension teaching background of trainers (Table 3). Technical incompetence of the training personnel in the area of crop protection contributed to the non-emphasis on crop protection during extension staff training. This finding lends support to Osuagwu (1991) who stated that incompetent trainers are problems limiting to extension staff training in Imo State. Training facilities such as, skill plots, audio-visuals and training venues were also noted to be grossly lacking (Table 4).

Inadequate "Logistic support" and "excess workload" were also identified to impair extension staff visit to the farmers for crop protection technology transfer. Such important logistic supports as improved disease resistant/tolerant planting materials, natural protectants, fertilizers, pesticides and mobility facilities were lacking in South-Eastern Nigerian (Table 4). These logistic supports are believed to enhanced extension staff efforts in securing change among the farmers. This is because their availability will make the extension staff become more committed in making effective contacts and in securing the confidence of farmers in the area. Excess workload which depicts the entirety of all the functions the extension staff performer as employees of the Agricultural Development Programmes shows that both formerly prescribed job schedule and regulatory functions such as data collection, input procurement and delivery, soil survey and market survey were assigned to the extension workers in South-East Nigeria. This thereby reducing concentration of efforts in contacting the farmers for crop protection technology transfer. This finding is supported by Benor et al (1984) who stated that performance of non-extension duties by extension workers constitute a serious

Table 3: Varimax Rotated Constraints Factors In Extension Staff Training in Crop Protection

Constraint Variable to Extension Staff Training in Crop Protection	Factor 1 (Lack of Training Incentives)	Factor 2 (Lack of Training Facilities)
Lack of Training Venues	0.19	0.63
Unavailability of skill plots for training in crop protection	-0.07	0.70
Inadequate opportunities for external training	0.11	-0.02
Lack of technically competent training personnel	0.56	0.22
Poor extension teaching background of trainers	0.65	0.12
Inadequate training materials (audio-visuals)	0.07	0.55
Training has little relevance to farmers need	0.28	0.53
Training not related to areas of staff need	0.47	0.34

obstacle to professionalism and concentration of efforts in training and visit extension system.

Inadequate crop protection experts and political interference were identified as major constraint in involving professional crop protectionists in agricultural extension service. It was observed that the inadequate crop protection experts were caused by poor option for crop protection in schools and faculties of Agriculture (Table 5). Majority of the people in Nigeria who chose agriculture as a discipline, graduate as agricultural economists. This is because they have flair

Table 4. Varimax Rotated Constraints Factors in Extension Staff Contacts with the Farmers

Constraint Variables to Extension Staff Visits	Factor 1 (Inadequate Logistic Support)	Factor 2 (Excess Workload).
Lack of improved disease toleran. planting materials	0.17	0.07
Too many farm families to cope with	0.18	-0.57
Inadequate quantities of Agrochemicals	0.70	-0.06
Inadequate availability of fertilizer to farmers	0.66	0.13
Poor extension teaching skill of extension workers	0.07	-0.39
Assignment of non-Extension functions to extension workers	-0.15	0.71
Poor mobility for extension workers	0.50	0.14
Extension message not suited to farmers	0.32	0.34
Frequent transfer of extension workers	0.09	0.48

for becoming policy makers in agriculture. This has however been to the disadvantage of crop protection option, which is highly indispensable for adequate food and fibre production. Political interference, which depicts the use of political position and authority in staff recruitment, has severely constrained employing crop protection experts for crop protection extension service. Non-crops protection experts were often employed to handle both crop protection and other aspects of agricultural extension services in South-Eastern Nigeria (Table 5).

RECOMMENDATIONS

To achieve effectiveness in crop protection extension service in South Eastern Nigeria. funding and management of research are important factors to consider in sourcing appropriate crop protection technologies for transfer to the farmers. Improved funding and employment of more qualified

research personnel are therefore recommended. Prompt provision of needed crop protection input and improved condition of farming communities will certainly achieve performance target in implementing crop protection extension service. To achieve this therefore, input distribution is recommended to be done through full-time farmers' groups and cooperatives.

Adequate food and fibre for urban and rural requirements will be elusive if the extension workers are not regularly and effectively trained in the area of crop protection. The same will be true if the trained extension workers do not make the required contacts with the farmers. To achieve effective extension staff training, employment of technically competent training. Personnel who have good extension teaching background is recommended. Also such logistic supports as mobility facilities, agrochemicals, disease resistant/tolerant crop varieties, and natural protectants should be provided for effective extension-farmer contacts.

Table 5. Varimax Rotated Constraints of Factors in Involving Professional Crop Protectionists in Agricultural Extension Service

Constraint Variables to Involving Crop Protection Expert in Agricultural Extension Service	Factor 1 (Poor option for Crop Protection)	Factor 2 (Political Interference).
Poor choice of crop protection as areas of specialization	0.80	0.11
Inadequate technical Crop protection experts	0.74	0.01
Rural farmers' reluctance to provide farms for Crop protection	0.20	0.34
Poor participation of rural farmers in crop protection	0.14	0.26
Political interference in extension staff recruitment	0.11	0.70
Inadequate crop protection equipment.	0.45	0.06
Lack of concern among rural farmers for diseased Crop farms	0.39	0.24
Extension workers recruitment not based on areas of need and specialization	0.36	0.61
Non-payment of agrochemical hazard allowance	0.47	0.34
Crop protection has little relevance to crop farmers	0.28	0.08

Removal of non-extension functions from extension is also recommended. This will reduce the workload of extension workers and enhance concentration of efforts.

Creation of awareness on the indispensability of crop protection for sustainable food and fibre production is recommended. This will certainly shift emphasis to crop protection option in the study of agriculture as a discipline and hence make more crop protection experts' available Crop protection service should be handled by crop protection experts knowledgeable in extension methods of communication. Political interference in the recruitment of crop protection extension workers should be avoided.

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