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## An Experiment in Introducing Change.

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COMMUNICATION IN EASTERN NIGERIA:  
AN EXPERIMENT IN INTRODUCING CHANGE

by

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Diffusion of Innovations Research Report 14

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Economic Development Institute, University of Nigeria  
Ministry of Information, Eastern Nigeria  
Ministry of Agriculture, Eastern Nigeria  
Ministry of Rural Development, Eastern Nigeria  
Ministry of Education, Eastern Nigeria  
Ministry of Health, Eastern Nigeria  
United States Agency for International Development

DIFFUSION OF INNOVATIONS IN RURAL SOCIETIES, A Research Project  
Funded by the United States Agency for International Development

Department of Communication  
Michigan State University  
East Lansing, Michigan  
July, 1968

## ABSTRACT

This report describes the beginning of a field experiment which was to have been Phase III of the Diffusion Project in Eastern Nigeria. Due to hostilities which broke out after Biafra's Declaration of Independence, the experiment was stopped and all personnel were evacuated from Eastern Nigeria.<sup>1</sup>

The objective of the experiment was to test the effectiveness of two communication strategies, which seemed promising because of:

1. their ability to increase knowledge and use of agricultural, health, and community development innovations in the rural areas of Eastern Nigeria,
2. their simple modes of operation and relative cheapness which made them suitable strategies for the Eastern Nigerian Government to use, given their present resources,
3. their use of the philosophy of self-help and cooperative self-reliance characteristic of the rural areas of Eastern Nigeria.

The communication strategies used were both based on the combination of a mass medium and interpersonal communication, allowing the advantages of each to be used. Radio Development Forums (RDF) were discussion groups in each village, organized to listen to and discuss a half-hour radio program once a week. Agricultural Progress Committees (APC) were groups of sociometrically selected village leaders, organized to work with their local change agent and learn the technical aspects of the innovations described in the "Progressive Farmers' Handbook". Much effort was invested in the preparation of each strategy. The RDFs required an elaborate multi-ministry organization. The APCs required the preparation of the Handbook and the training of change agents. Both strategies required, and received a great deal of inter-

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<sup>1</sup>In May, 1967, Eastern Nigeria seceded from the Federation of Nigeria, and became the Republic of Biafra. While the experiment was underway, the region was known as Eastern Nigeria, and this name has been used in this report.

ministerial cooperation from the Eastern Nigerian Government.

The experiment involved a "before-measure" (Phase II) of the awareness and adoption of several innovations, among which NS-I Maize, Aldrin Dust and Fertilizer were studied in depth. This was followed by the treatments, which were administered in 10 Ibo villages. Two villages received both treatments, two villages received only the RDFs, two received only the APCs, and two were control villages, which received no treatments. All villages, except the controls, were supplied with enough Fertilizer, Aldrin Dust, and NS-I Maize to satisfy any demand that might have been generated by the treatments. There was a possibility that the availability of supplies for farmers might result in adoption, even without any treatments. Thus two villages were given only supplies without treatments. The final phase of the experiment was to have been an "after-measure," to assess the impact of the treatments.

Even though there was no "after-measure", there are some indications that the treatments were successful, with the farmers as well as the Government change agencies. Both strategies were adopted enthusiastically by the Ministries, RDFs were established in more than 60 villages, and preparations were being made to print 10,000 copies of the Handbook. About 50 more villages had requested RDFs and the Handbook was in great demand, both from villages and townsmen. In all treatment villages supplies were rapidly used and it became necessary to send out extra to keep up with the farmers' demands.

## FOREWARD

The present report describes the way in which a field experiment was conducted in 10 villages in Eastern Nigeria. The experiment, which constitutes Phase III of the Diffusion Project in Nigeria, was designed to assess the effects of "agricultural progress committees" and "radio development forums" on farmers' knowledge, attitude, and adoption of three agricultural innovations. Both of the communication treatments represent combinations of a mass medium with directed interpersonal communication channels.

Mainly, this report describes the operational procedures by which the treatments were conducted. As such, it will be a useful guide to other researchers or change agents who seek to institute radio forums or an opinion leader approach to diffusing innovations.

Unfortunately, the Nigeria field experiment was terminated at about the half-way point by the outbreak of hostilities in July, 1967. Thus, it is only possible to present some very indirect indicators of the effects of the two communication treatments.

The main advantages of field experiments over the one-time survey is that one can determine (1) the time order of his variables, and (2) better methods of control over extraneous variables is possible. But an important disadvantage of field experiments is that they are subject to the whim of events over which the communication worker has no control. The present experiment thus represents this disadvantage as well as the advantages of the field experimental approach. Nevertheless, we feel it will be especially useful to those planning and conducting similar research on the diffusion of new ideas to villagers in less developed nations.

Everett M. Rogers  
Director  
Diffusion Project

## PREFACE

This brief report describes the design and execution of an experimental field study, Phase III of the DIFFUSION OF INNOVATIONS research project in Eastern Nigeria. About one-half of the way through the experimental phase, prior to the data-collection on the results of the experiment, the Project was abruptly terminated when civil-war broke out in the country.

While we cannot report much specific empirical evidence of the effectiveness of the communication techniques used in the experiment, we will describe the operations involved in setting up the study and organizing the experiment in rural villages in the Eastern Region of Nigeria.

The authors of the report wish to thank many individuals and institutions for the guidance and assistance. Particular mention should be made of Dr. Sylvester Ugoh and his staff at the Economic Development Institute, University of Nigeria, Enugu, who provided offices and a headquarters for the Project. The members of Radio Development Forum Program Committee, and their respective staffs, gave willing cooperation and advice. They were, Mr. S.N. Osakwe, Ministry of Information, Mr. H. Okereke, Chief Information Officer, Ministry of Agriculture, Mrs. N.G. Shields, Deputy Rural Development Secretary, Ministry of Rural Development, Mr. J. Ekwere, Director of Programs, Eastern Nigeria Broadcasting Corporations, and several officers from the Ministries of Health and Education. Special thanks also go to Mr. H. Okereke for his assistance with the production, and editing of the "Progressive Farmers' Handbook. The producers and actors of the Forum radio program did an excellent job, and their colleague who ran the Forum Clearing House was most efficient.

Our own field staff, Mr. E. Okiri, and Mr. E. Onwusika, cheerfully worked the oddest hours and saw that all the preparations for the experiment were completed rapidly. Together with our office staff, Mrs. Armstrong, and Mr. A. Udofia, the project was fortunate to have a hardworking and efficient staff.

We would like to thank the Ministry of Health, and the local mission of USAID who provided some radios, in case some experimental villages did not have their own.

Finally, we wish to thank people in the experimental villages for their hospitality and cooperation. These villages were

Amaovu-Itu  
Obollo Eke  
Ogboji  
Ohaffia Oduma  
Owutu

Abo/Umuduru Egbe Aguru  
Umuezeawala/Ihiala  
Umoke  
Umuseke/Okwudor  
Uwana

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COMMUNICATION IN EASTERN NIGERIA  
AN EXPERIMENT IN INTRODUCING CHANGE

by

Gerald D. Hursh, Allan F. Hershfield  
Graham B. Kerr, Niels G. Roling<sup>1</sup>

Introduction:

The project is funded by U.S.A.I.D. and administered through the Department of Communication, Michigan State University. Broadly speaking, the Project is a three-nation, four-year study of patterns of the diffusion of new ideas in agriculture, health, and community development among rural people. In Nigeria, the project was located at the Economic Development Institute on the campus of the University of Nigeria in Enugu, the capital of Eastern Nigeria.<sup>2</sup> Two similar projects were conducted in India and Brazil.

The three-country Diffusion Project, one of the largest research undertakings of its kind in the world, is at the fore of an international trend toward research on the diffusion of new ideas in rural areas of developing nations.<sup>3</sup> Underlying research

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Allan F. Hershfield, was Associate Project Leader in Nigeria, and is now Assistant Professor in the Department of Political Science, University of Kentucky.

Graham B. Kerr, and Niels G. Roling, were Assistant Project Leaders in Nigeria, and are now Research Assistants in the Department of Communication, Michigan State University.

<sup>2</sup>In May, 1967, Eastern Nigeria, seceded from the Federation of Nigeria, and became the Republic of Biafra. The University of Nigeria was renamed the University of Biafra.

<sup>3</sup>Reports of the two earlier phases of the Project are being completed at Michigan State University, and will be published soon.

Hursh, G.D., et al.: Innovation in Eastern Nigeria: Success and Failure of Agricultural Programs in 71 villages. Research Report 8, "Diffusion of Innovations in Rural Societies" Research Project, East Lansing, Department of Communication, Michigan State University.

Ascroft, J., et al.: Patterns of Diffusion in Rural Eastern Nigeria: Research Report 11. "Diffusion of Innovations in Rural Societies," Research Project, East Lansing, Department of Communication, Michigan State University.

of this nature is the realization that economic factors alone--e.g., the scarcity of land or money--do not fully explain the process or change in rural areas of developing countries, especially the modernization of agricultural practices. This statement holds whether rural people are considered as individual decision makers or as members of communities.

On the surface, two villages may seem economically and geographically similar, but there often are great differences between them in terms of the villagers' awareness and acceptance of new ideas in agriculture, health, or community development. The Diffusion Project, therefore, is an attempt to determine some of the social and cultural differences that, together with economic resources, help explain why new agricultural ideas are generally accepted in some villages, while in other villages they are rejected.

The Project is divided into three major phases:

Phase I. The first phase (April-August, 1966) was a study of villages as whole social systems, attempting to learn which village characteristics are most important in predicting whether farmers will accept or reject new practices and programs sponsored by the Ministry of Agriculture (MOA) of the Eastern Region. Altogether, to collect data for this phase, a trained staff of 9 Nigerian interviewers talked with 947 rural people in 71 villages throughout the region.

Phase II. The second phase (October, 1966-February, 1967) was a study of individual farmers, attempting to learn which personal characteristics (e.g., age, education, external contact) are most important in explaining why the farmer accepts or rejects new agricultural practices and programs. Altogether, 18 trained Nigerian interviewers talked with 1367 farmers in 18 villages throughout the region to collect data for this phase.

Phase III. On the basis of Phase I and II data, ten of the villages studied in Phase II were selected for the final phase (April, 1967-June, 1968) of the

Project. Two communication strategies were planned for nearly a six-month period of operation in the study villages. One involved village discussion groups coordinated with special radio broadcasts (called "Radio Development Forums"), and the other involved village discussion groups using specially printed information (called "Agricultural Progress Committees"). This period of time was called the "treatment" stage of the project. Later, after a six-month "sinking-in" period following the conclusion of the treatment stage, interviews were to be conducted again in the ten villages in order to compare the effects of the two methods of communication.

The Phase III study represented an integration of theoretical and practical research objectives. That is, the purpose of this part of the study was to apply earlier research findings to practical objectives of agricultural extension education and community development.

The experiment was designed to test the effectiveness of two different communication strategies for increasing knowledge, changing attitudes, and increasing use of specific agricultural, health, and community-development innovations. If successful, this "pilot study" would have provided development agencies with practical knowledge (1) about the usefulness of alternative methods of communicating new ideas in rural areas and (2) about operational procedures for evaluating communication effectiveness.

Objectives:

First, it must be remembered that the data to be collected in the small-scale Phase III study were in no way intended to be representative of villages in Eastern Nigeria. Rather, the purpose of the study was to provide initial bases for government consideration of the potential effects that different communication strategies may have in promoting rural development.

Second, any appreciable success in the conduct of Phase III can be attributed in large part to the intense involvement of several government ministries, and to

the enlightened realization by key officials of the applicability of our research objectives to the on-going development programs of the government.

Both as a research program and as a medium of communicating new information to rural areas, the long-range policy objectives of the experiment as presented to government officials in Eastern Nigeria were:

1. To increase knowledge, favorable attitudes, and use of agricultural, health, and community-development innovations in rural areas of Eastern Nigeria.
2. To strengthen the philosophy of self-help development and cooperative self-reliance in rural areas of Eastern Nigeria.
3. To provide useful information that rural people could use for guidance in the progressive development of their communities and their individual enterprises.
4. To provide bases for predicting rates of rural awareness and adoption of development innovations in response to specific communication strategies.
5. To provide government ministries and other development agencies with an objective appraisal of the effectiveness of specific communication methods for increasing awareness and acceptance of development innovations and for stimulating participation in community development programs.
6. To provide an empirical rationale, establish a feasible mode of operations, and devise a useful method for evaluating communication strategies within the existing development policies and objectives of the government.

Procedure:

The Phase II study commonly is known as a controlled field experiment.<sup>1</sup> Over a 20-month period, it was to consist of (1) a "before" measure of people's information about, attitudes toward, and use of different agricultural, health, and

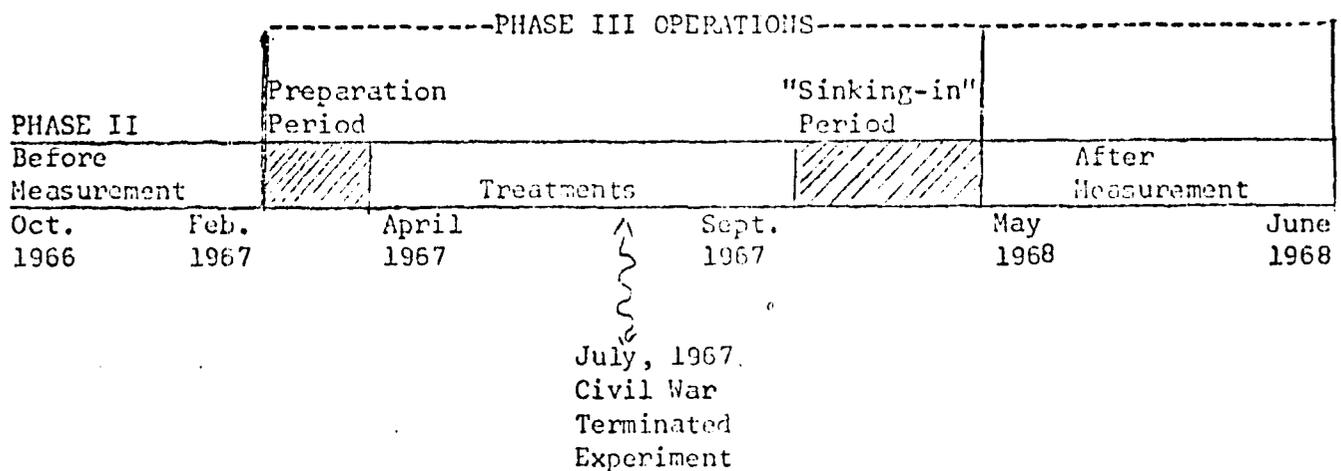
<sup>1</sup>For details of field experiments see: Hursh, G.D. (ed.) Survey Research Methods in Developing Countries (in press.)

community-development innovations; (2) an interim six-month period of exposing the same people to new information about those innovations; and (3) an "after" measure about six months later in which the same measures would be re-obtained regarding people's awareness of, interest in, and adoption of the innovations concerned.

By controlling the influence of factors other than the new information, this procedure would have indicated the degree of changes in information, attitudes, and adoption that could be attributed largely to the effects of the communications themselves.

The schematic below illustrates the study's operational time schedule:

Figure 1: The Timing of Phase III



Data collected earlier for ten villages in Phase II (October, 1966-February, 1967) were to serve as the "before-treatment" measurement, and would have provided a benchmark from which comparisons could have been made in the "after-treatment" measurement of the changes in farmers' awareness and acceptance of specific innovations. Phase III information campaigns (or "treatments") began in April, 1967, and were scheduled to run formally under the auspices of the Diffusion Project until mid-September, 1967. Approximately six months later, in May, 1968, Phase III interviewing--the "after-treatment" measure--was to have been conducted in the same ten villages. The six-month "sinking-in" period between treatments and the follow-up

measurement was considered sufficient time to permit farmers to respond to the new agricultural ideas, to realize something of their usefulness, and to reach a decision more or less to "commit" themselves to future use of the innovation. Unfortunately, civil war in the country terminated the project in mid-July, 1967.

Communication methods:

The Phase III communication methods used mass-media information to influence two kinds of groups, Agricultural Progress Committees and Radio Development Forums, which were organized in the study villages for the purposes of the experiment. The two communication strategies relied on the participation of community discussion groups--a print-media discussion group and a broadcast-media discussion group--in order to create conditions for supplemental face-to-face discussions to strengthen the intended effects of the printed or broadcast information coming to the groups.

Thus both communication strategies combined a mass medium and interpersonal communication, a combination optimizing the advantages of each. The mass medium carries a uniform message rapidly to a great number of people; providing information and producing awareness. The interpersonal communication, as a face-to-face discussion of the message provided by the mass medium, assists understanding, evaluation and conviction.

Radio Development Forums (RDF) were discussion groups in the village organized for the purpose of listening to a half-hour broadcast once each week and then discussing the program. Agricultural Progress Committees (APC) were discussion groups organized for the purpose of working with their local agricultural extension agent in learning technical aspects of development innovations contained in a publication, the Progressive Farmer's Handbook, written by members of the Diffusion Project.

Basically, Radio Development Forums worked as follows: (1) a field worker extended a village and proposed the establishment of a listening and discussion group

comprised of 15-20 villagers; (2) if the village accepted the idea, the village council, or some important administrative group, elected or appointed members to the forum--usually important village leaders were among those included in the forum; (3) a forum chairman, or discussion leader, and a forum secretary were elected by the forum members to preside over discussion meetings; (4) a radio set was provided by someone in the village--normally a school teacher or a member of the forum--and a common meeting place was selected; (5) each week on the same day at the same hour, the forum met to listen to the 30-minute broadcast about new ideas in agriculture, health, education, or rural development;<sup>1</sup> (6) following the broadcast, members discussed the major points of the broadcast according to an established procedure and for whatever time they wished;<sup>2</sup> and (7) questions from the group were mailed to the government radio station, and were either answered by mail or over the air in a later forum broadcast.

The Agricultural Progress Committees worked along somewhat the same lines as the radio forums, only the discussions concerned printed information: (1) an agricultural extension agent obtained permission from village chiefs, and elders to work in the village; (2) he talked to several informants in order to learn the most important development projects needed in the village; (3) he also obtained the names of people in the village considered to be most important for carrying out such projects; (4) the agent formed a group of eight to twelve persons most often mentioned in the village as important leaders for carrying out development projects; (5) once the group was formally constituted, higher agricultural officials from county or district offices came to the village to explain and promote the work of the group for development; (6) in subsequent meetings, the agent led group discussions of technical information contained in The Progressive Farmer's Handbook

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<sup>1</sup>See Appendix A, for a sample script of a radio broadcast.

<sup>2</sup>See Appendix B, for a sample discussion guide.

a specially written compendium of numerous agricultural innovations.<sup>1</sup>

The intended results of the communication strategies were that the members of both types of discussion groups would carry information from the group to other persons in the community, thereby creating a kind of "two-step" flow of information by which other villagers received a "secondary exposure" to information about new development practices. It was expected that the new information would stimulate both individual and group decisions to innovate, as well as to stimulate neighboring villages to establish their own Radio Development Forums or Agricultural Progress Committees.

The principal reasons for using community groups with both communication strategies were that (1) both in terms of feasibility and effect, radio forums have been used with considerable success in many countries--e.g., Ghana, India, Canada;<sup>2</sup> (2) research evidence suggests that the mass media message has relatively greater or more immediate impact on human behavior when supplemented by organized group discussion, than it does when presented alone; (3) studies of the mass media indicate that their effects largely must be evaluated in terms of the interpretations selectively attached to media content by the individual's social groups and (4) research evidence indicates that human behavior is more susceptible to change when efforts are made to change group behavior rather than individual behavior.

Moreover, although the procedures for selecting group members were different for the two communication strategies, both the RDF and the APC involved village leaders. Leader involvement was considered important to the success of the experiment since much anthropological and sociological research suggest that widespread adoption--or "popularization"--of new ideas in a community is dependent upon

<sup>1</sup> See Appendix C, for a sample chapter from the Handbook

<sup>2</sup>Abell, H.C., Farm Radio Forum Project, Ghana 1964-65. Guelph, Ontario Agricultural College, University of Guelph, July, 1965.

Bhatia, J.D. and Neerath P. *An Indian Experiment in Radio Farm Forum*. Paris, UNESCO, 1959.

Cilicol, J., Shea, A.A., Simmons, G.J.P., Sim, R.A., *Canada's Farm Radio Forums*, Paris, UNESCO, 1954.

d Klongan, G.E. *Radio Listening Groups in Malawi, Africa*, Ames, Iowa, Rural Sociology Report no. 70, Department of Sociology and Anthropology, Iowa State University, October, 1957.

the participation and encouragement of local leaders.

Perhaps most important to the selection of the communication methods used in the study was that they were considered to be both important and realistic strategies in terms of existing government apparatus and long-term planning for rural development of the Eastern Region. More specifically, in establishing criteria for the selection of communication strategies, it was decided that each method must be:

- (1) feasible for government use;
- (2) adaptive logistically and conceptually to existing government policy and resources;
- (3) acceptable as a strategy the government would be able and willing to adopt;
- (4) important in terms of its potential for inducing change;
- (5) efficient in terms of a favorable ratio of cost-to-benefit (or cost per unit of change);
- (6) fast-acting to induce changes within the time limits of the project;
- (7) specific so as to be clearly defined in terms of government objectives;
- (8) transmissible so as to be easily communicated in statements of government policy;
- (9) measurable so that new changes in awareness and acceptance could be determined readily;
- (10) applicable to large-scale replication and generalization irrespective of cultures or circumstances; and
- (11) relevant to future communication research and rural development.

Radio Development Forums, demanded extensive government participation. A Program Committee was established, composed of members of the Ministries of Information, Health, Education, Agriculture, and Rural Development, and the Diffusion Project. This committee--the policy-making, executive body for RDF--was itself an important innovation within the government, in that it represented the first wholly integrated communication effort of several ministries. Previously, all public information campaigns were conducted separately within the information section of each

ministry, or channeled through the Ministry of Information's publication or broadcast facilities when mass-education programs were undertaken.

Initiation of RDF resulted in the creation of a new department, called the Clearing House, in the Eastern Nigeria Broadcasting Company (ENBC) for the purpose of servicing requests for information from village forum groups as well as for the purpose of acting as a liaison among the participating ministries. Another organization, the RDF Secretariat, was set up within the Ministry of Information to create new forums in each of the 20 provinces in the region.

While the Agricultural Progress Committees required fewer government resources, it required great cooperation particularly from the Ministry of Agriculture. The project would have been severely hampered without the help of the M.O.A. in providing technical content and production facilities for the experimental publication; in assigning extension agents to work with the project in the villages; and in providing supplies for distribution in the villages. As it was, although less prominent than the radio forums, the APC strategy enjoyed considerable success for the short time it was operational. While no new agencies had to be created within the Ministry of Agriculture, ministry officials were sufficiently impressed with the experimental publication, The Progressive Farmer's Handbook, to plan for an initial printing of 10,000 copies of a revised edition for 1968.

Innovations studied:

The specific agricultural innovations selected for study in Phase III were (1) fertilizer; (2) HS-1 maize, a new maize variety; and (3) aldrin dust, an insecticide for yam beetle. During previous Phase II interviewing, data were collected on farmers' knowledge of, attitudes toward, and use of each of these innovations. The same information, attitudinal, and behavioral questions were to be repeated in Phase III interviewing in an attempt to determine the effects, of the experimental communication strategies.

Patterns of rural awareness or adoption of other, non-agricultural innovations also were to be compared across the two phases of interviewing. Specifically, data were to be contrasted regarding (1) community cooperatives; (2) round worm; (3) malaria; (4) water boiling; (5) maternity childbirths; (6) smallpox vaccinations; (7) latrine construction; and (8) hospital or dispensary visitations.

Studies of the effectiveness of introducing experimental communication methods in rural areas of developing countries--e.g., Senegal, indicate that great frustration can be expected among farmers when, after responding to the communications directed to them, they are unable to get the supplies necessary to enact the programs which they are urged to adopt. When such frustration occurs, communication fails and development is retarded.

To guard against this eventuality, at least as regards the three major agricultural innovations being studied, the Diffusion Project bought supplies of aldrin dust from the Shell Oil Company, and induced the Ministry of Agriculture to furnish supplies of fertilizer and NS-1 maize without charge. These supplies were stored and distributed under the supervision of the project, in order that they could be made available upon request to farmers in the study villages responding of supplies was essential to completing the communication chain of events leading ultimately to successful adoption and continuance of new agricultural practices. The system for distribution of supplies is too involved for description here. Suffice it to say that an efficient accounting and distribution system was devised for rapid dissemination in response to requests from the study villages.

#### Village selection:

Phase III was to include interviews with about 750 of the same factors from ten villages studied in Phase II. The criteria for selecting from among the original 18 villages were similarity of language and distance from Enugu. Thus, all villages from the non-Ibo speaking areas as well as from the Southern areas of the

region that were in the Ibo areas but of considerable distance from Enugu were scheduled.<sup>1</sup> As a result, the ten Ibo villages purposively chosen for Phase III lay in a "middle belt" running from the town of Afikpo, on the Cross River, in the Eastern part of the region to the major town of Onitsha in the West. The ten villages selected for the study were:

Figure 2

## PHASE III STUDY VILLAGES

<u>Village</u>	<u>County</u>
Abo/Umuduru Egbe Aguru	Okigwe Northern
Uwana	Afikpo
Owutu	Edda
Oduma	Awgu
Umucke	Ettiti
Amaovu	Mbaise
Umuoseke/Okwudor	Isu
Obollo Eke	Nsukka
Umuezawala/Ihiala	Onitsha Southern
Ogboji	Agata

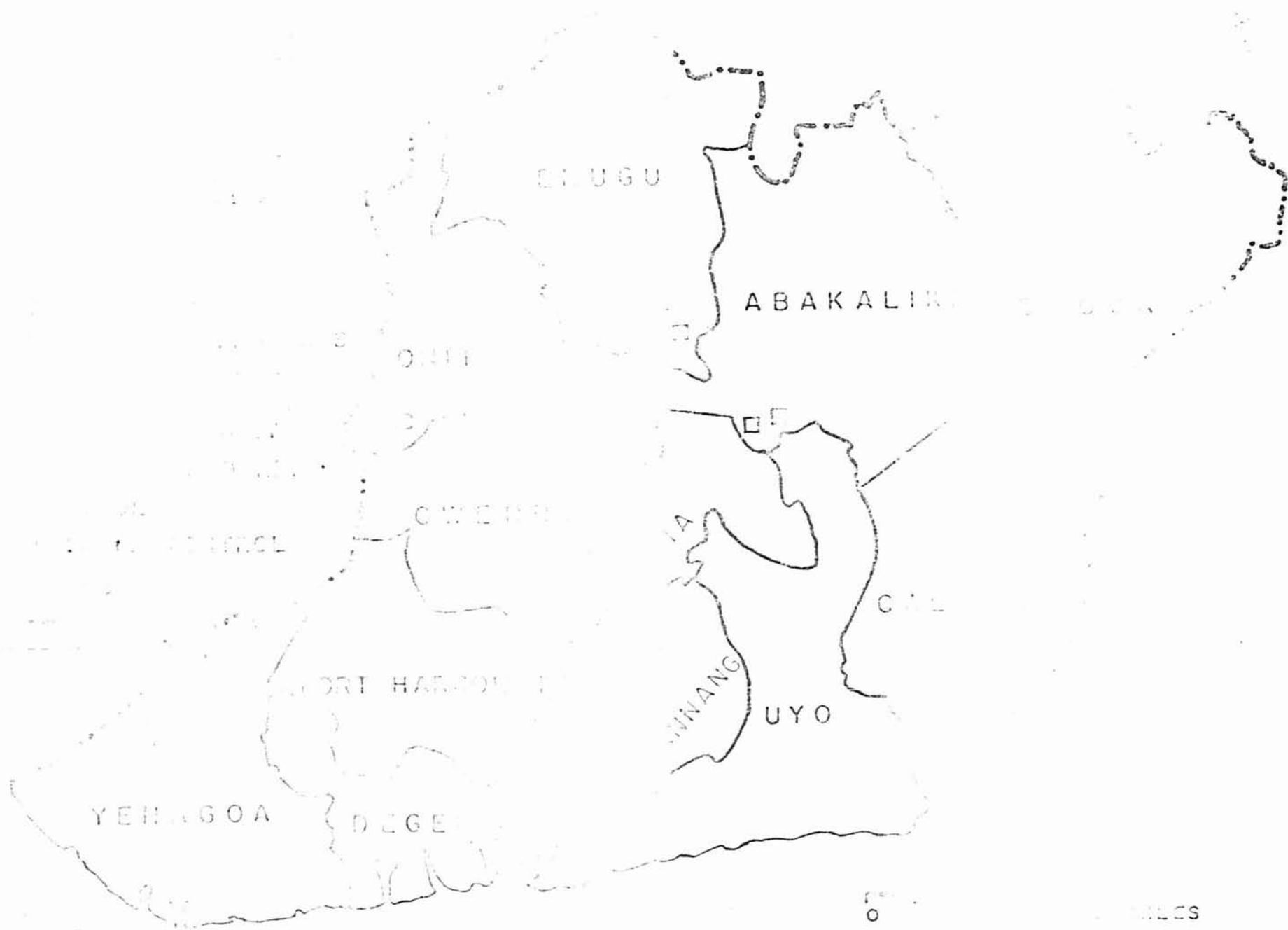
Study design:

The design of this "controlled field experiment" was quite simple. As outlined elsewhere, two communication methods (treatments) were used: Radio Development Forums and Agricultural Progress Committees. To control for the effects of non-communication factors, some of the ten villages were exposed to one or both of the communication methods (experimental villages) and others were exposed to neither method (control villages).

Since supplies were to be available to the study villages, we had to control for their possible effects as well. So, two kinds of control villages were included

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<sup>1</sup> One exception was made after the original selection of villages, but before information campaigns began. In one village, a chieftancy dispute forced the project to discontinue operations. A substitute Ibo village, was selected in the Northern part of the region.





on accessibility.

Next, the ten villages were paired so that a high-innovative/high-access village was matched with an opposite low-innovative/low-access village. Since Ogboji and Umuezeawala/Ihiala were the two exceptions in the ratings and since they were diametric opposites (Ogboji was a high-innovative/low-access village Umuezeawala/Ihiala was a low-innovative/high-access village), they were matched to offset each other.

After matching the ten village into five pairs, each pair was assigned a number. Then, by selecting from a table of random numbers, each pair was randomly assigned to one of the five experimental or control groups (Cells A to E below) used in the design of Phase III.

Figure 3

PHASE III EXPERIMENTAL AND CONTROL VILLAGES:  
ASSIGNMENT TO TREATMENTS

	Cell	Communication Treatment	Village Name	Innovative Rating	Accessible Rating
EXPERIMENTAL GROUPS	A.	Radio Forum + Agric. Committee	Unuduru Uwana	Low High	Low High
	B.	Radio Forum Only	Ogboji Umuezeawala	High Low	Low High
	C.	Agric. Committee only	Amavvu Umuoke	Low High	Low High
	D.	Pure (no media and no supplies)	Awatu Uwaka	Low High	Low High
	E.	Partial (no media but supplies)	Mbuna Oholo Ike	Low High	Low High
CONTROL GROUPS					

As mentioned earlier, the matching of village pairs in each of the cells in **Figure 3** was made partly on the basis on their innovativeness. In other words, with- in each cell of the design a "high success" village (relatively high acceptance of new practices) was matched with a "low success" village (relatively low acceptance). This was done in order to provide some comparison of the different effects of com- munication treatments in villages which were characteristically different in their use of modern agricultural practices. It should be remembered, of course, that the small number of villages involved would have permitted only scant bases for generalization of the results.

As can be seen in the figure above, two villages were exposed both to RDF and APC communication (Cell A: combined treatments); two villages were exposed only to RDF communication (Cell B: single treatment); two villages were exposed only to APC communication (Cell C: single treatment); two villages were exposed to neither method (Cell D: pure control); and two villages were exposed to neither method, but were provided access to supplies of the three major agricultural innovations used in the study (Cell E: partial control). Perhaps the study design is better illustrated by the following schematic:

Figure 4

PHASE III EXPERIMENTAL AND CONTROL VILLAGES: EXPERIMENTAL DESIGN WHERE EACH CELL CONSISTS OF TWO VILLAGES

<u>TREATMENTS</u>	Agricultural Progress Committees	No APC
Radio Development Forums	(A) Radio Forum and Agric. Committee	(B) Radio Forum
No RDF	(C) Agric. Committee	(D) Pure Control
		(E) Partial Control (supplies only)

The Phase III design would have permitted the following types of inferences:

(1) Cell A: the combined effects of both communication methods where supplies were available; (2) Cell B: the separate effects of RDF where supplies were available; (3) Cell C: the separate effects of APC where supplies were available; (4) Cell D: the relative amount of change in the villages during the time of the study which occurred neither as a result of the presence of new communication or agricultural supplies; (5) Cell E: the relative amount of change in the villages which is not attributed to the presence of new communication but which may be attributed to the presence of supplies; and (6) All Cells: the relative amount of change over time in "high success" and "low success" villages whether induced by the presence of new communication, or as a result of the availability of agricultural supplies, or simply due to the passage of time.

In short, the design suggests the differential effects of communication methods when agricultural supplies are available to the village; the effects when supplies are available to the village in the absence of new communication; and the effects of time when neither new communication nor supplies were purposively available to the village.

We did not expose villages to new communication in the absence of supplies because this has been shown to produce high degrees of frustration among farmers encouraged to change after communication exposure.

In many respects, the Phase III design "idealizes" the agricultural extension process because it created rural situations in which villages were exposed to intensified communication and provided ready access to normally hard-to-get agricultural supplies. Impressionistically, such typically was not the case in the rural areas of Eastern Nigeria.

#### Effects of the experiment:

The first Radio Development Forum program was broadcast on April 23, 1967, and

the first Agricultural Progress Committee meetings were held on or about May 5, 1967. Both treatments were definitely continuing--relatively unhindered by the political crisis and subsequent civil war--at the time the last expatriate member of the Project staff was evacuated in July, 1967.

Each of the four RDF and APC groups kept detailed records of their activities, including attendance at meetings, subjects discussed, decisions reached, actions taken, and innovations adopted. These records were inspected at least every other week by the project's Nigerian field staff. Errors and omissions were quickly identified and corrected, and record-keeping soon reached a fairly high level of accuracy and completeness.

The records were returned regularly to the project office. The information they provided would have been essential (along with the data to have been obtained during the Phase III resurvey) to evaluating the effectiveness of the two communication treatments.

The records, without the resurvey material, still would have provided a sound basis for some impressionistic judgements about the comparative effectiveness of the two treatments. The records, unfortunately, remain in Eastern Nigeria, and the statements made here are based on the collective memories of the project staff, now assembled in East Lansing. Fortunately, all the records were carefully studied by the staff members, so the following judgements are not based on mere random recollections of fleeting impressions.

We can say, in general, it appears both treatments were in the process of becoming very effective. Committees and/or forums in all treatment villages had decided to adopt one or more innovations, and had taken steps to implement their decisions. Members of three of the four RDF villages planted HS-1 Maize, and used Aldrin Dust, and all four villages used fertilizer. Supplies, which the Diffusion Project had thought would meet the demands of the farmers in the treatment villages

were very rapidly used. Extra supplies had to be made available to keep up with the unexpectedly large demands by the farmers. Latrines were dug in at least two villages, and another village wanted more information about the care and isolation of children with measles. Two of the APC villages started community plantations and cooperatives, and the other two had begun planting MS-1 Maize and using fertilizer.

Judging from the demand for the establishment of new forums and for the Progressive Farmer's Handbook, the treatments perhaps became successful too quickly. Neither the Ministry of Information nor the Ministry of Agriculture was prepared with sufficient personnel or resources to handle the deluge of requests stimulated by the two treatments.

The Ministry of Information had originally included an announcement at the end of each RDF program, inviting villagers to write for assistance in establishing forums in their own non-study villages. Within two months after the first broadcast, forums had been established in more than 60 villages (not including the four study villages), and the MOI had neither the personnel nor the resources to service requests for the establishment of new forums. At that time, the Secretariat had approximately 125 additional requests for the establishment of new forums. The announcement was, thus, eliminated from the programs, until the Ministries were properly organized.

The Progressive Farmer's Handbook stimulated a similar response. Originally, only 45 of the first 100 copies were distributed in the four APC villages and to the agricultural extension agents serving those villages. The rest were distributed to the people in each Ministry who had contributed the descriptive material for each program and, of course, to senior Nigerian and U.S. government personnel. Under pressure for more books, the Information Section of the Ministry of Agriculture hastily produced and distributed an additional 250 copies, using stencils which had been intended to produce only a draft prototype manuscript.

On the basis on the growing demand, the Information Section planned to produce, as quickly as possible, a more polished version of the book in about 2,500 copies, and a revised 1968 edition of the book in more than 10,000 copies. The book initially was sold for two shillings (20 cents), and several farmers were heard to say that it would have been cheap at one Nigerian pound (\$2.80). In almost every instance where Nigerians came in contact with the book (at the printing plant, in the bindery, and in the project offices), they tried to obtain copies.

#### The Participation of the Ministries.

The staff of the Diffusion Project had, of course, hoped that both treatments would be favorably received, but we were unprepared for the magnitude of the favorable response. If anything, the apparent success of the project must be credited to the enthusiastic cooperation of the participating Ministries of the Eastern Nigerian government.

While the successful conduct of Phase III depended heavily upon the quality of the participation of five ministries of the regional government of Eastern Nigeria, Ministry officials generally were quick to see the benefits to be gained from their participation.

First, and perhaps most important for the initiation of the experiment, we did not approach the ministries until we had compiled a written record of similar communication experiments in other countries, and had successfully completed and partially tabulated the results of the earlier phases of the project. By approaching top officials in the government with an established record of accomplishment and with pertinent information concerning agriculture, health, and community development awareness in the rural areas, it was not difficult to encourage their active support and participation.

Specifically, the Ministries of Information, Health, Education, Agriculture, and Rural Development were asked to participate in creating a six-month radio forum

broadcast series. The Ministry of Agriculture alone was asked to participate in the development of Agriculture Progress Committees in the villages. For the radio series, each ministry was required to provide one top-level representative to the Program Committee, the RDF executive board; to provide technical content and advice for scripts; to service requests for information from the villages; and to plan well in advance for future programs concerning its development interests.

Along with providing 15 provincial information officers to set up new forums outside of the study areas, the Ministry of Information was required to establish and provide the staff and supplies for two new departments: one a Clearing House in the government radio station, for coordinating information requests from the villages to the participating ministries; and the other a Secretariat for the purpose of coordinating development of new forums in non-study villages and for coordinating radio programming. The ministry also provided six radio sets in addition to the four sets furnished the Diffusion Project by U.S.A.I.D. The sets were to be sold to villages on a time-purchase plan, and the proceeds used to create a revolving fund to provide radios for other villages wishing to start RDFs.

The government radio station, ENBC, provided producers (who also acted as translators), actors, and script-writers for the four language broadcasts as well as for four 30-minute 'prime' time periods each week for broadcasting in different native dialects: Ibo, Ijaw, Efik, and 'Pidgin' English.

The Ministry of Agriculture provided supplies of MS-1 Maize (2 1/2 tons) and fertilizer (3 1/2 tons) to make available to study villages. To complement this, the Diffusion Project bought 1 1/4 tons of Aldrin Dust. The ministry also assigned four extension agents to work on the APC project, and provided labor and technical equipment for the production of the Progressive Farmer's Handbook.

One of the most important areas of cooperation was that of "non-contamination" of study villages. In order for the study to conclude realistically about changes

under stable conditions, participating ministries agreed to do no more than the amount and intensity of government programming that was present in study villages in the previous year. Obviously, if the government field workers suddenly increased their activities in the study villages, it would have been impossible to determine to what extent changes in information, attitudes, and adoption could be attributed to the effects of the communication treatments.

Another significant area of cooperation was that of informing provincial officers of the work of the project in their areas. Without each ministry properly informing its field supervisors, we risked antagonizing them and, therefore, jeopardizing the successful conduct of the study. For example, it was important that the Divisional Agricultural Superintendents knew (1) the reasons we selected certain villages in their areas, rather than the most successful or most important "showcase" villages which they would have preferred us to see; (2) the reasons the Project controlled certain quantities of supplies and made them available only to study-village areas, and not to "more needy" villages in the county; and (3) the necessity that local agents in their areas be released for training and participating in the study.

In return for their active participation, the government ministries were to receive a sensitive and objective evaluation of the potential of two heretofore untried communication methods for the future dissemination of new ideas in health, education, agriculture, and community development. Moreover, personnel of the Ministries of Information and Agriculture were receiving inservice training, at the time the study terminated, in the procedures for establishing village forums and agricultural committees.

The prospects for the continuation of both techniques were excellent both in terms of the government personnel and administrative machinery committed to the experiment. The Permanent Secretary of the Ministry of Finance and the Chief of

Economic Planning made a special exception to the already established estimates for fiscal 1967-68, by inserting a substantial budget for developing a regional RDF system.

In terms of the kinds of information that would be available regarding rural patterns of knowledge, attitudes, and adoption, each ministry was aware of the benefits resulting from its cooperation in the Phase III experiment.

The nature of development topics that could be presented, especially through radio forums, was virtually unlimited: ranging from technically specific instructions to more abstract, long-term government policy goals. As presented to the participating ministries, the flexibility of professional radio communication suggested such diversified topics as:

1. Ministry of Agriculture: (a) functions and objectives of the extension service; (b) requirements, subsidization, and participation in major tree--crop schemes; (c) purchase, application, and benefits of plant foods and plant protectives; (d) clearing, spacing, mulching, and other forms of land preparation and maintenance.

2. Ministry of Rural Development: (a) reinforcing the philosophy of rural self-help; (b) explaining the purpose and procedures for forming community cooperative societies; (c) describing community plantations and farm settlement schemes; (d) promoting local youth brigades (work groups) for planting or construction projects.

3. Ministry of Health: (a) discussions of provincial and county planning for future hospitals, maternities, and dispensaries; (b) instructions for building latrines and other desirable forms of community sanitation; (c) descriptions of modern health practices--e.g., prenatal and post-natal child care and proper diet; feeding and nutrients; (d) information about the causes, prevention and treatment of diseases.

4. Ministry of Education: (a) promoting the desirability of formal education and proper classroom facilities; (b) availability and requirements for adult education

classes; (c) information on government scholarships and requirements; (d) dealing with juvenile delinquency, petty misdemeanors, and the medically indigent.

The Ministry of Information was the principal agency in the conduct of the radio forums. In enlisting the cooperation of officials in this Ministry, the Diffusion Project agreed to train Information Officers in the methods of organizing and evaluating radio forum groups throughout the provinces as well as to script and produce the first five programs in the radio series. Beyond the long-term research implications, Ministry personnel saw as their practical rewards for participation: (1) new members attracted to the general radio audience; (2) increased radio purchases; and (4) heightened prestige and acceptance of radio as a reliable source of information.

#### Conclusion

In both personal and scientific terms, the planning and conduct of the Phase III communication experiment in Eastern Nigeria was an exceptionally rewarding experience. While empirical data are not available with which to judge systematically the efficacy of the experiment, hopefully this brief accounting conveys something of the enthusiasm with which the study was implemented in the Governmental Ministries, the alacrity with which the innovations were adopted in the villages, and the regret with which project staff members saw the program terminated.

APPENDIX A

Sample Script of a Radio Development Forum Broadcast

This is a script of a broadcast made during the week of the 25th June 1967, for the Radio Development Forums. The broadcast concerns fertilizers.

RADIO DEVELOPMENT FORUM

"Helping People to Help Themselves  
Means Progress"

PROGRAMME: Ministry of Agriculture - Fertilizers.

BROADCAST DATE:	<u>Time</u>	<u>Producers:</u>
23.6.67	6:30 p.m.	(Mr. Julius Eke (Ibo)
25.6.67	6:30 p.m.	Mr. Kesie Iyabi (Ijaw)
27.6.67	7:00 p.m.	Mr. Okon Attakpo (Efik)

(all of E.N.B.C.)

Ministry of Agriculture Contact:

Mr. Herbert Okereke, Senior Agricultural Officer, In-Charge Agricultural  
Information Section, Ministry of Agriculture, Enugu. Phone: 2871/1, 2783/1

-----  
THEME: (20 seconds, up and under)

NARRATOR: Radio Development Forum ... a special series of programmes to help Easterners progress.

THEME: (up and out)

NARRATOR: This is ... welcoming you to our usual weekly get-together in the Radio Development Forum. Last week, we heard how Mr.... nearly lost his favorite son when he got the measles.... Today, we shall hear how the use of Fertilizers brought happiness to a poor family. But before we hear our play, let's hear from our answer man. Here is ... with answers to questions sent by Radio Development Forums.

NOTE: QUESTIONS AND ANSWERS SHOULD BE LIMITED TO FIVE MINUTES.

ANSWER  
MAN: The first question this week comes from our Radio Development Forum in ...  
They want to know... This is the answer supplied by Mr..... of the  
Ministry of ..... ANSWER.....

ANSWER  
MAN: Those were the questions received last week. We hope the answers were  
satisfactory. If they weren't,--don't hesitate to write again. Remember,  
your Forum Covenor has the proper form on which to write the questions,  
and he will send your questions to us. We'll try to have them answered as  
soon as possible. Be sure to listen next week for more questions and  
answers. Bye for now.

NARRATOR: Thank you ... In a few moments, we'll bring you the market reports. But  
first, here's a song. It's a folk song from ..... and is sung for us by.....

MUSIC: (insert title and time. Not more than 2 minutes).

NARRATOR: That was ... sung by .... Hope you enjoyed it. Now for the market reports.

NEWS  
READER: Good evening... (Market Price Reports). Those were the market prices for  
the week. Listen again next week when I'll be back with more news about  
prices in the major markets of Eastern Nigeria. Until then, ... (Ibo, Ijaw,  
Efik Greeting.)

NARRATOR: Before we hear this week's play, let's have some music. Here are ... to  
sing..... Music (insert title and time....not more than 2 minutes).

NARRATOR: That was ... singing..... And now for our play of the week. Do you  
remember our friend, Mr..... whose favorite child got the measles in  
our story of last week? Now he's in trouble again, because he has refused  
to learn new ways. You may remember that Mr.... is about 60 years old.  
He's married and has 7 children. Mr.....went to school for several years,  
but he didn't really learn much. He's always getting into trouble because  
he keeps thinking old ways are the best ways of doing things.

It is evening, after work, and Mr..... is sitting with some friends over a keg of palm-wine. They are discussing the refugee question - how many old friends and relatives have now come back to their village after several years' absence.

FIRST OLD MAN: Ah, it is nice seeing all these people again. My grandson, for instance.

I thought I would never see him again.

SECOND OLD MAN: And do you know they are still returning? Everyday, a new face appears in the village.

YOUNG MAN: By the way, did you see the young men who visited the village yesterday?

FIRST OLD MAN: Which young men?

YOUNG MAN: The two young men from the township who went about talking of new methods of farming?

ANOTHER YOUNG MAN: Oh, do you mean the people who were talking about some substance they called fertilizer?

FIRST YOUNG MAN: Yes. I met them yesterday and the things they talked about looked interesting.

FIRST OLD MAN: What was so interesting?

FIRST YOUNG MAN: Oh, they talked about quite a number of things, all aimed at improving farm yield and making a big profit.

NARRATOR: At this juncture, our friend, Mr....., unable to control himself any longer, bursts into

MR. .... Ha! Ha! Ha!

What was that you said? Big profit? It seems these township boys have come with their funny ideas.

SECOND YOUNG MAN: This is nothing to laugh at. What they said was an important message on how we rural people can improve our lot. They promised they would be at

SECOND the villagers all about this new idea. If you think it's all a fairy tale,  
YOUNG MAN:  
 (CONT.) come and hear for yourself tomorrow morning.

NARRATOR: After this, the whole group decided to be at the village square the next day, which now brings us to the next scene of the play. The villagers are gathered in the village square. Our friend Mr..... is also present with his friends of the evening before.... but he is here more to amuse himself than to be convinced. The two young men from the town have just arrived, and already people are asking them eager questions.

FIRST What exactly is this "Fertilizer"  
VILLAGER:

FIRST NEW-You see, as human beings eat in order to live, so crops also eat to live.  
COMER:

The plant gets its own food from the soil through its roots. Most soils do not contain enough of this plant food. Some do contain enough to grow a good crop. But as such soils are farmed on year after year, the plant food in them is gradually removed. Very soon, the rich soil becomes a poor soil. Poor soils give poor crop yields and waste the time, energy and money of the farmer.

Fortunately, Scientists have found out what the plant actually takes out of the soil as food. There are many of these things that make up plant food. Scientists have been able to manufacture and mix them into a substance called Fertilizer. When added to the soil, this Fertilizer supplies plant food. Thus, Fertilizer is plant food made by man, which, when added to the soil makes the crop grow strongly and produce a good yield.

FIRST OLD What does this "Fertilizer" look like?  
HAN:

FIRST NEW There are many types of Fertilizer. Some look like ash and some like salt.  
COMER:

SECOND How can we believe you? We have never seen where this your Fertilizer was  
OLD MAN:  
 used and how it works.

SECOND NEWCOMER: Fertilizers were the main reason for the large increase in farm produce in Europe and America. Similar increases have been obtained in developing countries like Japan, India, Ghana, Senegal and Mexico.

FIRST NEWCOMER: In Nigeria, experiments and demonstrations have shown average yield increases of more than half per acre with most food crops. In some cases, yield increase up to one and a half times have been obtained by farmers. For vegetables, yield increases of 5-8 times have been achieved.

NARRATOR: Another of Mr.....'s colleagues, beginning to get convinced, tells him that this Fertilizer idea, must be a good thing. At least, it is worth trying.

FIRST OLD MAN: I think I will use Fertilizer during the next planting season, for I have good reason for wanting more money. My eldest son has just passed an Entrance Examination into a Secondary School and I must make enough money to support him.

Mr..... Don't be a fool! There is never any good in these new things. In any case how can you hope to raise so much more yield on the little farm you have, or is the newcomer going to give you more land or money to buy the Fertilizer? I, too, have a son who has passed an Entrance Examination but since I have no money, he is going to sit right here at home with me and farm the way our forefathers always did. They never died of hunger.

FIRST OLD MAN: But how can we possibly raise so much more yield on the small farms we have or is the government going to give us more land? Moreover, such a wonderful thing as this Fertilizer must be very expensive. How can poor farmers like us possibly buy it?

FIRST NEWCOMER: The use of Fertilizer is the cheapest and quickest means of increasing the size of your farm. And when your farm is small and your soil poor, it is the only practical way, especially if you are already a good farmer.

SECOND NEWCOMER: And when Fertilizer use is combined with improved variety, control of insect pests and crops diseases, and efficient farm management, the yield of most crops can be increased from 2 to 5 times. Even, here, Fertilizer accounts for more than half of the total increase.

FIRST NEWCOMER: But that is not all. There are other advantages connected with the use of Fertilizers. Apart from earning 1 1/2 to 6 times the cost of the Fertilizer as a net return (i.e. after subtracting the cost of the Fertilizer) the use of Fertilizer also makes it unnecessary for land to be left fallow (i.e. bush) in order to become fertile again. And when farm land is limited as in many parts of Eastern Nigeria, the use of Fertilizers will permit the farmer to crop the same land every year and still reap good yield without ruining the soil.

NARRATOR: By this time it has become obvious from the faces of the audience that many more people are now interested. They begin to discuss among themselves that they like the idea. But our friend Mr.....still refuses to believe. He is arguing with his own group of the night before, trying to convince them of how dangerous such an innovation might be. At least, he speaks up, directing his words to the newcomers.

Mr..... "You have been telling us all these good things, wanting us to buy your so-called "Fertilizer". But you have kept away from us the great disadvantages involved. I know a friend in a nearby village who used this your Fertilizer last year for his yams. I also know the result. All his yams rotted in the ground!"

FIRST NEWCOMER: This old accusation, that fertilizer causes yam-rot, is NOT true. It has been thoroughly checked and found to be false. Yam rot is a disease caused by some very minute living things in the soil. It has nothing to do with Fertilizers. Remember, Fertilizer is nothing more than plant food.

VILLAGER: I think I'll buy this Fertilizer, so that I won't have to work so hard to make a good yield.

SECOND NEWCOMER: Do not think that the use of Fertilizer will make up for poor farming.

Before a Fertilizer can give you the best result,

(1) you must use improved varieties. This is why the Ministry of Agriculture distributed certain varieties, e.g. N.S.I. maize BG 79 rice or GCH 7 Cassava;

(2) you must practice crop protection - that is, control pests and diseases either by hand-dusting or spraying with recommended chemicals - whichever is applicable in your farm situation;

(3) you must practice good farm management, plant healthy seeds or seedlings at the correct time, space the seedlings correctly and in well-prepared seedbeds; weed promptly and apply the right type of Fertilizer according to recommended practice.

For example, if you do not weed, the weeds will eat up the Fertilizer and your crop still suffers. Unless you can practice good farming, you waste your money if you buy Fertilizers.

FIRST NEWCOMER: I know a man in a nearby village who thought Fertilizer would do his farming for him. He lost heavily.

VILLAGERS: Ha, ha, ha! (Laugh)

FIRST NEWCOMER: But if you are a good farmer already then the use of Fertilizer will more than double your gain.

NARRATOR: By this time, it is obvious that nearly everybody is interested except, of course, our friend, the unbelieving Mr.....

VILLAGERS: Tell us more, tell us more! How can we get this Fertilizer?

SECOND NEWCOMER: The present situation in the country in which we must increase food production has made the Eastern Nigeria Government concerned in the Fertilizer

SECOND programme. It is so important to the Eastern Nigeria Government that  
NEWCOMER:  
(CONT.) government helps the farmers to buy Fertilizer by having the Fertilizers subsidized. This means that the Fertilizer is bought by Government, but sold to the farmers at reduced price - in this case, at half the price. The Government pays for the other half. Thus a 15lb bag of mixed Fertilizer is sold for 4/-, instead of 7/6d. A 56lb bag for 15/- instead of £2.16/-. This is a wonderful offer by Government, isn't it?

VILLAGERS: Indeed it is! Yes, it is wonderful!

FIRST It means that your profit begins to show immediately you buy the Fertilizer!  
NEWCOMER:

VILLAGERS: Yes, yes!

FIRST Secondly, Fertilizers can be issued to you on credit if you are a member of  
NEWCOMER: of a cooperative society, and also if you plant BG 79 rice, NSI maize or GCH 7 cassava. You pay for the Fertilizer after harvesting and selling the crop. This credit is a new offer to help the farmers produce more food. Thirdly, Fertilizers sales agents are being appointed to sell Fertilizers to farmers.

VILLAGERS: Tell us, where are these Fertilizer agents?

SECOND Fertilizer agents and Ministry of Agriculture staff will reach your  
NEWCOMER: village to sell Fertilizers to you. In fact, some of you can even register as agents and make some money that way.

FIRST On the use of Fertilizers, the Ministry of Agriculture has trained a  
NEWCOMER: special group of staff called Fertilizer Promotion Staff who work in the field to assist and guide farmers in the proper use of Fertilizers. Short courses will be organized for farmers and sales agents. All these are free Government assistance and you will be wise if you take advantage of them.

NARRATOR: After that, the gathering breaks up. Most of the farmers determine to use Fertilizers during the next planting season, but a few people like our

NARRATOR: friend Mr.....think it won't do any good, and look forward to having a good laugh when, as they think, all those who will use Fertilizer will fail.  
(CONT.)

But here they were mistaken. In the next scene, we shall see what happens to Mr..... But first, let's have some music. Music.

That song is entitled..... and was sung for us by.....

We have now arrived at the last scene of this play. It is evening, and our friend Mr.....is standing at the door of his house, looking left and right as though he wanted to run away. Close behind him inside the house is his wife, nagging him about their poverty and consequent inability to send their son to College.

MR... 's You lazy farmer! You never make enough money for the family. Look now,  
WIFE: your son can't go to College, like your friend's son. Are you not ashamed...

NARRATOR: Meanwhile on the road is that old friend Mr.....'s who also had a son about to enter College. He had taken the advice of the young newcomers to their village at the beginning of the farming season, and had used Fertilizer for his farming.

SECOND Hello, Mr.....! Why do you look so sad? I am a happy man now. I have  
OLDMAN: just seen my son off to College. Oh, I'm so happy. I'm glad I used Fertilizer for my farming!

Mr..... Stop bragging for me, you fool! Go on your way and leave me alone with my troubles!

NARRATOR: Mr.....is jealous and angry, and his wife makes it all worse for him by nagging him. Do you want to be like Mr.....? Then take the advice of the Newcomers and take advantage of all the help the government has offered you. Your Extension Agent will tell you more about the sale of Fertilizers.

If you have any questions about today's programme, please discuss them after this programme. If you don't find out the answers, write them down

NARRATOR: on the special forms provided for them. Your Forum Convenor has some, (CONT.) and he will mail them to ENBC to have them answered as soon as possible. Answers to questions from Forum members are broadcast at the beginning of each programme.

If your village does not have a radio forum and it would like to have one, please write to the Secretariat, Radio Development Forum, c/o Head, Research & Evaluation Division, Ministry of Information, P.M.B. 1036, Enugu. The Ministry will send someone to help you organize a forum soon.

That's all for now. Don't forget to listen to another programme in the series, same time, same day next week.

THEME: (up and under).

NARRATOR: Content for today's Radio Development Forum programme was supplied by Mr. H.E. Okereke, Senior Agricultural Officer. The programme was produced by the Eastern Nigeria Broadcasting Corporation in cooperation with the Research And Evaluation Division of the Ministry of Information, Enugu.

THEME: (up and out).

## APPENDIX B

### A Sample Radio Development Forum Discussion Guide.

After each Forum broadcast the members of the group discussed the topic of the broadcast under the guidance of an elected Chairman. The Forum guides were sent to the Chairmen in advance of the broadcast so that he could introduce the broadcast and lead the discussion after the group had listened to the radio.

#### RADIO DEVELOPMENT FORUM

"Helping People To Help Themselves  
Means Progress"

FORUM GUIDE  
for  
Programme Number Four

Measles - Control and  
Innoculation

#### FORUM GUIDE FOR PROGRAMME NO. 4 - "MEASLES CONTROL AND INNOCULATION"

Dear Chairman,

Here is the Forum Guide to help you with the programme on Measles, which will be on the air at the following times:

Ibo	Sunday, May 14th	7:10 p.m.
Ijaw	Wednesday May 17th	7:15 p.m.
Efik	Friday, May 19th	7:15 p.m.

#### Introduction

You must have noticed that among the refugees who returned to Eastern Nigeria as a result of the disturbances in other parts of the country, is a large number of children under 10 years of age, and many under 5 years. With so many young children and babies pouring into your community, infectious diseases, like Measles can spread very easily, unless special care is taken to prevent the outbreak and control the epidemic.

The Government of Eastern Nigeria is anxious to preserve the good health of all its citizens, whether children or adults, and this programme is aimed at teaching the people in the rural areas how to prevent and check an outbreak of Measles. It has been arranged in cooperation with the Ministry of Health which is willing and able to render help to all those in rural areas.

#### The Broadcast

Tell the Forum members that they will hear a play about what happened to a man who refused to take his son to hospital when the child was sick - until it was so late that the child nearly died. In order to save the child, the father eventually spent a large sum of money - all of which would not have been necessary if he had taken his wife's advice. In the end, he blames his wife!

Next, they will hear an interview with the Doctor, which will tell them more about the cure and control of Measles. He will tell them the exact number of aspirin, how much liquid and how many spoons-full of salt and water solution to be given to the child each day.

#### Important points to note about this Programme:

1. The symptoms of Measles.
  - (a) A running nose
  - (b) sneezing
  - (c) tiny grey spots in the mouth
  - (d) a fever.
2. If not properly treated in its earliest stages, it gives the patient diarrhoea (frequent stool) and loss of body fluid.
3. By this time, it becomes difficult and expensive to heal the patient.
4. Measles can be avoided by having all the children innoculated against the disease.
5. If a child contacts Measles, many things can be done to help the child to recover.

more quickly:

- (a) do not use any folk remedy, because it does no good and, instead, may hurt the child;
- (b) keep the child quiet and in bed;
- (c) give the child small doses of aspirin (as advised by the Doctor) and lots of liquid (water and fruit juices). These help to reduce the fever;
- (d) give the child one teaspoon of water with salt in it and one tablespoon of water with sugar in it each day;
- (e) most important, report the case immediately to the nearest health officer, clinic, hospital, dispensary etc.

Here are a few questions to use in starting off the discussion

NOTE Do NOT tell the members the answer until you are sure that no one present can answer it correctly.

QUESTION 1 How do you know when your child has Measles?

ANSWER:

- a) the child has a running nose, sneezing, and tiny grey spots in the mouth;
- b) the child also has a fever.

QUESTION 2 What happens to the child if not properly and promptly treated?

ANSWER: The child develops diarrhoea (frequent stool) and loses body fluid.

QUESTION 3 How can Measles be avoided?

ANSWER: By having all the children inoculated against Measles.

QUESTION 4 Where can this inoculation be done?

ANSWER: Your nearest health Officer will tell you - at the nearest Health Office, Hospital or Clinic.

QUESTION 5 Should you use folk medicine on the child?

ANSWER: No! Folk medicine may hurt the child.

QUESTION 6 What should you do if your child should catch Measles?

- ANSWER:
- 1) Most important, report the case to the nearest Health Officer, Hospital, Clinic, Dispensary, etc.;
  - 2) keep the child quiet and in bed;
  - 3) give the child small doses of Aspirin (as advised by the Doctor) and lots of liquid (water and fruit juices) which help to reduce the fever;
  - 4) give the child one teaspoonful of salt solution and one tablespoonful of sugar solution each day.

## APPENDIX C

### Sample Chapter from the "Progressive Farmers Handbook 1967; A Guide to the Programmes of the Ministries of Agriculture and Rural Development in Eastern Nigeria."

This Handbook is a 321 page guide to the programs of the Ministries of Agriculture and Rural Development in Eastern Nigeria. It was used a print mass medium in the "Agricultural Progress Committee" strategy. A local change agent met with the group of sociometrically selected village leaders, regularly, to discuss one project with the assistance of a chapter from the Handbook. An example of such a chapter is reproduced below.

#### FERTILIZER (pages 164-172)

"How to get more money from the same land"

##### 1) What is fertilizer?

Fertilizer is a man made, concentrated plant food. It is not a medicine. A medicine cures sickness. Food makes things grow. Fertilizer is not for sick crops. It makes good crops grow better. A sick crop will not become healthy by giving it fertilizer. Fertilizer looks like salt or small pebbles.

A man cannot eat just yams. To remain strong, he must also eat oil, vegetables, and other things. A crop needs different foods too. That is why fertilizer is a mixture of plant foods. We call it mixed fertilizer.

Different crops need different foods. Just like animals. A goat eats leaves and a chicken eats maize. Different crops, therefore, need different types of fertilizer. You can buy two different types of fertilizer: "rootcrop" fertilizer and "graincrop" fertilizer. Rootcrop fertilizer is best for cassava, yams, onions and other rootcrops. Graincrop fertilizer is best for maize, vegetables and other leaf crops. Your agriculture extension staff will tell you which type to use on your crops.

Fertilizer is not more poisonous than salt. People should not eat it just like they do not eat much salt. Because it is very concentrated, it should not be put too near crops. If you put it too close it will burn the stem. This book will tell you how far from each kind of crop to put fertilizer.

Fertilizer is sold in plastic bags of 15 lbs for 4 shillings and in plastic bags of 112 lbs (a hundred weight) for £1 : 8s. Fertilizer is easily spoilt by moisture. You should, therefore, keep it in a dry place in your house. Also, "close the bag very well with rope.

## 2) Why the Ministry of Agriculture wants you to use Fertilizer

Fertilizer is plant food. There are many plant foods in fertile soil. That is why crops grow well on fertile soils. If you grow crops for some years on a certain plot, the plant foods will be used up by the crops. That is why you leave that plot fallow for some years. Doing that restores fertility. Leaving soil fallow will bring back plant foods in the soil. To get sufficient plant foods back in the soil, you have to leave the plot for at least 7 years. This means that you must have 8 times as much land as you need in one year for farming.

It is very difficult for a farmer to have so much land nowadays. The population of Eastern Nigeria is growing very fast. There are almost 2 million refugees who have recently come back to the East. Besides, every three years the population of the East grows by about 1 million people. This is so because babies stay alive now than in the olden days. Then, there were no maternities and doctors.

This increase in population means that there is less land for every Easterner. Fallow periods, therefore, become shorter and the land becomes less fertile. The plant foods in the soil are being used without being restored. It is just like money you have saved. If you eat from it all the time without putting money back, your savings will be finished soon. Much land in the East has become useless in this way. If crops in the Eastern Region could shout from hunger, you

would hear a terrible noise. Some farmers say their soil is fertile. They think they do not need fertilizer. Yet, they have fallow period. That means their farm does not have enough plant food.

Fertilizer is plant food. If you use fertilizer, you bring fertility to your land. In developed countries like the United Kingdom, much bad land is now fertilized. Likewise, in Nigeria you can grow crops on much unused land if you use fertilizer. Fertilizer will put more plant foods in the soil. With fertilizer, you do not need a fallow period anymore. You can see how much a village has progressed in agriculture by looking at the amount of fertilizer it uses. Because you do not need fallow period, you can use all the land you have at the same time.

Investing in fertilizer gives you a good profit on many crops because with fertilizer, you will get higher yields. Some improved crops especially will give much better yields. You even need to give fertilizer to them, otherwise you will never benefit from the fact that they have been improved by the Ministry. They have been improved on the basis of the fact that fertilizer will be used. It is just like a tall boy. That boy can grow into a very strong man if he gets good food. If he does not get enough food he may not be stronger than other men. Crops that are improved like this are: NS-1 maize, improved oil palm, onions, other vegetables, GCH cassava, rice and many other crops. The Ministry has improved them so you can get better yields, but you must use fertilizer.

### 3) How the Ministry of Agriculture helps you to get fertilizer

It is very necessary that the farmers in the Eastern Region start to use fertilizer, like the farmers in developed countries. The Ministry of Agriculture is, therefore, trying to get all farmers to use fertilizer.

To encourage farmers to use fertilizer, the Ministry sells fertilizer at a subsidized price. 15 lbs of fertilizer would cost 7/6d in the market. The Ministry sells 15lbs for 9 shilling.

The Ministry brings fertilizer very close to your town. Every agricultural extension staff will sell fertilizer to you. There are also special staff who do nothing but help farmers get fertilizer. They lay out demonstrations to show farmers of the effect of fertilizers. To do this, they fertilize a small part of a part of a plot of cassava, yam or maize. They do not fertilize the rest of the plot. After some time you can clearly see the difference between the two parts of the plot. The fertilized part will carry a sign: FERTILIZER, the unfertilized plot will carry a sign: NO FERTILIZER.

The farmers on whose land the demonstrations are made get the fertilizer free. Normally, demonstrations are on farms along the road where people can see them. In many towns fertilizer is sold for the Ministry by ordinary people like shopkeepers. They are called "sales agents." These sales agents also sell 15 lbs of fertilizer for 4 shillings. However, they get some commission, but you do not pay them more than the ordinary price of 4 shillings for a bag.

In the book:

Photograph of demonstration plot, showing effect  
of fertilizer on cassava.

The Ministry explains how to use fertilizer. The agricultural extension staff will tell you what fertilizer to use on which crop, how much fertilizer to use, when and how to apply it. Remember; you can find an agricultural extension staff in the Headquarters of your county, maybe even in your own town. He has a green and yellow sign saying: MINISTRY OF AGRICULTURE, EXTENSION STAFF.

The Ministry gives fertilizer on loan to members of recognized cooperatives. They have to pay it after the harvest. This is very helpful because fertilizers cost money, and some farmers have no money before harvest. As you can see, it is a good thing to be a member of a registered cooperative. If you want to know more about cooperatives, see page 286 for loans.

#### 4) Benefits that fertilizer gives farmers

A farmer who user fertilizer can use more of his land. He does not leave his land fallow for long periods. Each fertilized plot will give a yield he could only get from a much bigger plot without fertilizer. This is so because fertilizer is plantfood and gives fertility to the soil. Instead of renting or buying land, you can spend your money on fertilizer.

Fertilizer makes land fertile. It makes crops yield better. You get bigger yields. NS-1 maize, for example, will yield almost 2 times as much with fertilizer than without it. Fertilizer used on yams will yield 1 1/3 times more yams. Fertilizer will double yields. With fertilizer, you get twice as much cassava from the same land as you would get without fertilizer. Fertilizers bring bigger yields on other crops as well: groundnuts, improved oilpalm, oranges, rice, vegetables and many others. Because fertilizer puts so much plantfood in the soil, you can put your crops closer together. You can put twice as many stands on an acre when you use fertilizer.

Fertilizer brings more profit. Of course a farmer would not benefit if he spent 4 shillings on fertilizer and only got 4 shillings more profit from selling

his bigger yield. Luckily, that is not so. If a farmer spends 4 shillings on fertilizer he will normally get back more than 4 shillings from selling his bigger yield. How much profit you make depends on the crop. On MS-1 maize you get back 3 shillings for every shilling you spend on fertilizer. That is a profit of 2 shillings. To put it in another way: 1 hundred-weight of fertilizer at 1 : 8/- will give you an increase in yield of 5 hundred-weights which will bring you 6. On local maize you can make only a small profit, although you will get higher yields than before. On cassava you can get 2 shillings for every shilling you spend on fertilizer. That is a profit of 1 shilling on every shilling spent on fertilizer.

On yam you should get 3 shillings for every shilling you spend on fertilizer. That is a profit of 2 shillings. To put it in another way: 1 hundred-weight of fertilizer (1 : 8/-) will give you an increase in yield of 5 hundred-weight. It is sometimes said that fertilizer causes yamrot. The Ministry has done experiments to see if this is true. The Ministry put fertilized yams and unfertilized yams in the same yam barn. The Ministry found that there was no difference. Fertilizer does not cause yamrot. Yamrot is a disease that spreads on yams that have a spoilt skin. Yamrot existed before fertilizer came to this Region. A fat yam and a small yam can both get it. You must handle both carefully, so that you do not spoil the skin.

5) How to use fertilizer. For every crop you want to know:

1. when to put fertilizer
2. which fertilizer to put
3. how much fertilizer to put
4. where to put fertilizer.

You will find the answers to these questions, for different crops in this book.

To find out about maize, you should look under "maize" and so on. Every agric. extension staff can also help you answer questions.

Here are a few answers to the questions:

When to put fertilizer. You always put fertilizer when the roots are big enough to eat it. For NS-1 maize, apply fertilizer 1 week after planting, for yam and cassava 8 and 12 weeks.

Which fertilizer to put. The Ministry sells rootcrop fertilizer for root crops like yam, cassava and onions, and graincrop fertilizer for maize, vegetables and other leafy vegetables. Always ask your agricultural extension staff.

How much to put. 15 bags of fertilizer of 15 lbs each (2 hundred weight) are enough for a whole acre (about the size of a football field). Vegetables, like onions, need 30 bags (4 hundred weights).

You give 1 or 2 handfuls to each plant. This is the minimum you can give. You can give more and get higher yield, but you would have to spend more money.

Where to put fertilizer. You should remember that fertilizer is a concentrated plant-food. Do not, therefore, put it too close to the plant, otherwise it may burn the stem. Your agricultural extension agent will tell you exactly where to put fertilizer for each crop. When you use fertilizer, you have to weed your farm well. Weeds like fertilizer just as much as farm crops. Do not let the weeds eat all the plant-food.

#### 6) How to get fertilizer.

Every agricultural extension staff will sell you 15 lbs bag of fertilizer for 4 shillings a bag. You can always find an agricultural extension staff in the headquarters of your county. Very often, there will be one in your town or in a nearby town. Ask the headmaster of the school in your area where to find extension staff. Fertilizer is also sold by agents. These people are ordinary shopkeepers who get a commission from the Ministry to sell fertilizers. They also sell it for 4 shillings a bag.

RESEARCH REPORTS  
ON THE DIFFUSION OF INNOVATIONS\*\*

- #1 Bibliography of Research on the Diffusion of Innovations, 1964.\*
- #2 Opinion Leadership in Traditional and Modern Colombian Peasant Communities, 1964.
- #3 Bibliography on the Diffusion of Innovations, 1965.\*
- #4 Bibliography on the Diffusion of Innovations, 1966.\*
- #5 Achievement Motivation Among Colombian Peasants, 1966.
- #6 Bibliography on the Diffusion of Innovations, 1967.
- #7 Innovation in Brazil: Success and Failure of Agricultural Programs in 76 Minas Gerais Communities, 1967.
- Summaries of Diffusion Research Report #7, (English and Portuguese).
- #9 Innovation in India: The Success or Failure of Agricultural Programs in 108 Indian Villages, 1967, (hardback and mimeo).
- #12 Patterns of Agricultural Diffusion in Rural India, 1968, (hardback and mimeo).
- #14 Communication in Eastern Nigeria: Experiments in Introducing Change, 1968.
- #15 Communication in India: Experiments in Introducing Change, 1968.
- #18 Correlates of Family Planning in Eight Indian Villages, 1968.
- #19 Adoption of High Yielding Varieties in Three Indian Villages, 1968.
- #20 Development and Change in a Bengal Village, 1968.
- #21 Adoption of Health Practices in Village India, 1968.
- Forthcoming
- #6a (Printout Supplement) will appear in 1968.
- #8 Innovation in Eastern Nigeria: Success and Failure of Agricultural Programs in 71 Villages, 1968.
- #9 Popularized, shortened version will appear in 1968.
- #10 Patterns of Diffusion in Rural Brazil, 1968.
- #11 Patterns of Diffusion in Rural Eastern Nigeria, 1968.
- #13 Communication in Brazil: Experiments in Introducing Change, 1968.
- #16 Survey Research Methods in Developing Nations, 1968.
- #17 Comunicacao de Novas Ideias: Pesquisas Aplicadas Ao Brasil, 1968.
- #22 Opinion Leadership Analysis, 1968.
- #23 Opinion Leaders and Their Role in Social Change, 1968.

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\*No longer available.

\*\*The reports can be requested by number from the Department of Communication, Michigan State University, East Lansing, Michigan, U.S.A., 48823.