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TWO EXPERIMENTS IN KENYA

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DISCUSSION PAPER NO. 230

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NAIROBI, KENYA

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Views expressed in this paper are those of the authors. They should not be interpreted as reflecting the views of the Institute for Development Studies or of the University of Nairobi.

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ABSTRACT

This paper focusses on techniques for managing agricultural extension staff.

A system of staff meetings, recording and reporting is described which was tested in the Mbere Special Rural Development Programme area. The purpose of this system was to provide closer supervision of the routine activities of agricultural extension staff, and its achievements and limitations in meeting this goal are discussed here.

A system of inservice training and planning workshops associated with new and/or more comprehensive extension activities was tested in Kisii and Homa Bay. This is basically a management system for extension planning which provides a tool for the effective participation of grass-roots level field staff.

The two management systems are considered complementary, and it is proposed that they be combined to form a useful management tool for agricultural extension.

## MANAGING EXTENSION STAFF -- TWO EXPERIMENTS IN KENYA

STAFF MANAGEMENT -- A FACTOR IN EXTENSION EFFECTIVENESS

There are many aspects of extension work which can be improved to increase the effectiveness of the extension effort. Such aspects include criteria for selecting farmers, techniques for mobilising the community, for communicating information, for stimulating the motivation to adopt an innovation, for demonstrating, teaching, etc. Such activities have been discussed by the authors in detail elsewhere. (See 8, 9 and 10.)

In this paper we are focussing on one aspect of extension work which influences all these sorts of activities -- the staff management system. No doubt, new extension techniques and strategies, be they ever so useful, will not be implemented effectively if the management of field staff is weak. Efforts to improve extension, therefore, must always take into account issues of staff management. These issues must be resolved in order to carry out successful extension activities.

All too often proposals for improving extension overlook the important aspect of staff management, perhaps because few useful management techniques have been worked out or publicised. However, a number of techniques have been tested recently in Kenya, and they will be discussed in this paper.

RESEARCH ON FIELD STAFF MANAGEMENT IN KENYA

Research into field staff management problems has generally received little attention in developing countries until recently. This is surprising given the importance of effective staff management. In Kenya, the Ministry of Agriculture alone employs nearly 10,000 field workers who are responsible for organising and promoting agricultural development at the grass roots level. Most general crop production, livestock and other agricultural innovations and improvements are supposed to be passed on to the farmers by the field staff.<sup>1</sup> Thus, since agricultural development is at present the most important component of national development in Kenya, the effectiveness of the agricultural field staff has a significant impact on the rate of development of the nation as a whole.

1. The production of important cash crops and certain other specific crops is the responsibility of special organisations such as marketing boards, authorities, etc.

E.M. Kulp, in his 1970 book, Rural Development Planning: Systems Analysis and Working Method (7), analyses general management issues of development planning and implementation. This work has apparently stimulated greater interest in the question of management systems for rural development. In a book published in 1974 (1), Robert Chambers discusses the research he carried out at the University of Nairobi's Institute for Development Studies on management issues in the context of the Kenyan Special Rural Development Programme.

Although a number of field staff management experiments have been carried out in Kenya and some of them have been published, it is obvious that very little is known about these issues in Kenya itself. For example, one of the experiments reported by Chambers -- the field staff meeting, recording and reporting system -- had apparently been forgotten in Kenya until it was rediscovered during the second I.D.S. evaluation of the Special Rural Development Programme.

In this paper the feasibility of two field staff management systems is discussed. The first system is devised for dealing with routine work, and the second deals with new and more comprehensive planning and implementation activities.

#### THE IMPORTANCE OF MANAGEMENT AS A DETERMINANT OF FIELD STAFF WORK PERFORMANCE

In order to determine the impact of management on the behaviour of field workers, four factors should be considered: motivation, skills, organisation and management. The field workers need to be motivated to carry out their responsibilities, and their skills enable them to do their jobs competently. Organisation is needed to combine and coordinate many specialised tasks to achieve a particular objective, and a system of management is the instrument whereby information is communicated between the field staff and the supervisors and the activities of all staff members are guided in accordance with the objectives of the organisation.

A ministry or other large bureaucracy generally considers that its staff is motivated and possesses appropriate skills. Motivation is usually provided by the salary scale and other incentives, including disincentives such as dismissal or lack of promotion. The skills necessary to carry out

field work responsibilities are provided by requiring certain standards of education and training prior to employment and by further inservice or on-the-job training.

Many writers and government officers tend to consider the level of motivation and skills the crucial determinant of field staff work performance. Improvement in work performance is usually sought by providing better training for the field staff, requiring higher educational qualifications or dismissing workers who are not properly motivated. The organisation is usually taken more or less as a constant, and little opportunity is recognised for organisational reform.

However, the field staff's level of motivation and skills is determined to a large extent by the effectiveness of the management system. This factor is often overlooked. For example, if an extension worker is asked to achieve unclear or unrealistic objectives, his motivation will probably decline. On the other hand, realistic targets and well planned procedures will often enhance the work performance of the field staff and increase their motivation.

Three factors are of crucial importance if the field workers are to be managed effectively in order to improve their job performance:-

1. The guidance of the field staff by their supervisors,
2. The feedback of information from the field staff to the supervisors, and
3. The motivation and skill level of the field staff.

#### PROBLEMS OF FIELD STAFF MANAGEMENT

It is widely known that the efficiency of agricultural field staff in developing countries tends to be low. For example, Kulp writes:-

Despite the lack of planning techniques, almost every developing nation has had its rural development projects, its credit projects, extension projects, cooperative projects, and other agricultural projects. These activities have generally failed to reach most of the farmers. They have variously been misguided, miscoordinated, ... and basically have suffered from lack of working method. (7, p.4)

Hursh, Rüling and Kerr describe a situation in Eastern Nigeria which appears similar to the state of affairs in East Africa:-

Agricultural extension agents often live in villages under conditions that foster lethargy, with no meaningful communication with supervisors, inadequate supervision and advice. All these factors create feelings of personal alienation and dislocation.. (4, p. 159)

In briefly reviewing the literature on the subject in East Africa, Chambers concludes that the efficiency of the extension service in general is low. (1, pp. 55-65) A recent workshop on "Agricultural Extension in Ujamaa", held in Morogoro, Tanzania with participants from all three East African countries, revealed that the work performance of agricultural extension agents in Tanzania has not been significantly improved by the restructuring of the village community and the extension organisation.<sup>2</sup> As usual, the management system was not considered to be the crucial factor in determining the work performance of extension staff.

In summary, the weaknesses of the extension system, as revealed in the literature and generally recognised at ministry headquarters, can be listed as follows:-

1. The extension workers are often asked to meet unrealistic targets.
2. The extension staff often provide their supervisors with inaccurate and irrelevant reports.
3. The extension staff do not usually record their activities and the results of their activities in an appropriate form.
4. Staff members do not usually plan and programme their activities properly.
5. The supervisors must rely on poor information which provides them no basis for realistic target-setting or effective supervision.

EXPERIMENTATION IN EXTENSION MANAGEMENT TO IMPROVE ROUTINE PLANNING,  
RECORDING AND REPORTING

In recent years, experimentation has been carried out to improve the management of agricultural field staff in connection with the Kenya Special Rural Development Programme. Between 1971 and 1973 an experiment was initiated in the Mbere S.R.D.P. area to overcome routine field staff management problems. Since this system was devised to deal with routine problems only, we shall not use its original name, the "Mbere Field Staff Management System", but rather name it according to its component parts, the "Field Staff Planning Meeting, Recording and Reporting System". The

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2. This workshop was held in September 1975 and organised by the Faculty of Agriculture of the University of Dar-es-Salaam. (3)



system was described by Chambers, one of the researchers who helped design and test it (1, pp. 65-78 and 190-198), and was evaluated briefly in the second I.D.S. evaluation of the Special Rural Development Programme. (6, pp. 19/10-19/13 and 8/7-8/8)

This system was aimed at coordinating and improving staff meetings, recording and reporting in order to overcome the following deficiencies in the extension system:-

1. Unrealistic target setting from the top down,
2. No systematic assignment of priorities among competing demands on staff time,
3. No organised work planning for the field staff,
4. Little feedback to supervisors concerning staff activities, and
5. A lack of standard reporting procedures. (1, p. 67)

The basic administrative unit of the system was the Division, the basic supervisor was the divisional head of the extension staff (A.A.O.) and the subordinate staff were assigned at the locational and sublocational levels.

#### The Components of the Field Staff Planning Meeting, Reporting and Recording System

There were five main components of this experimental management system which will be described in this section.

(a) The Monthly Planning Meeting: The A.A.O. was supposed to conduct one staff meeting a month with the field staff of each location. The standard agenda for these meetings was:-

1. Debriefing of each staff member,
2. Discussion of general matters, and
3. Joint planning for the period up to the next meeting.

The main purpose of these meetings was the joint planning of staff activities. Specific targets and priority activities had to be designated, reconfirmed or revised. In order for each staff member to be able to provide accurate and relevant information to facilitate effective planning, certain recording and reporting tools were devised.

(b) The Daily Activities Record: This was kept by each staff member. It showed the days of the month available for extension work, the extension

targets and activities planned for the period and the work actually carried out each day. This record provided each extension worker with targets and a work plan for the month, and it also provided the A.A.O. at each monthly meeting with a record of what had been done in the preceding period.

Figure 1. The Daily Activity Record Form.

EXTENSION AGENT'S DAILY ACTIVITY RECORD (DAR) NAME.....SUBLOCATION.....FROM.....TO..... inclusive TOTAL DAYS.....

Use Pencil to plan. Enter actual. in ink.	Weekends/Pub. Hols.	PLANNED																								Actual
	Leave																									
	Pay/Office Work																									
	Official Meetings																									
	Courses/Shows																									
	Total																									
		Days planned available for extension =																			less	=				
		Days actually available for extension =																			less	=				

Priority	Crop	Crop Operation	Ext MTD	Target																			Actual
Farmers Advised - Totals -																							

Above enter number of farmers advised  
 Abbreviate crop operations and extension methods e.g. W=weeding A=agric.Baraza D=demonstration  
 FV=farm visit  
 Complete after work every day

Source: (1), p. 193.



(d) Farm Visit Records Kept by Extension Staff: Each staff member listed in a black book the farmers he visited and the number of visits made.

(e) Farm Visit Records Kept by Farmers: As a check on the records kept by staff members, each farmer who received a visit from the extension staff was meant to record the visit in a red book. Usually the staff member had to sign the entry made by the farmer.

Advantages and Disadvantages of the Field Staff Planning Meeting, Recording and Reporting System

This system was initiated in 1971 in one location in Mbere, and later two additional locations were included. The experiment was carried on until late 1973. Unfortunately, no systematic evaluation was carried out during the time in which this system was in operation. In December 1974, the team of I.D.S. researchers who were carrying out the second overall evaluation of the Special Rural Development Programme interviewed some of the officers who had been involved.

The general conclusion from these interviews was that the system had been a successful organisational device for improving staff performance. (6, p. 19-12) The following specific improvements were identified:-

The A.A.O. obtained much more information about the activities of his staff. If a particular crop were being neglected, the system drew his attention to the fact. Also, joint target-setting enabled the A.A.O. to make sure key extension activities were included in each month's plan. Earlier the field staff had set their own targets informally with little involvement of the A.A.O. Finally, it seems likely that the system, once it was properly understood, encouraged field staff members to be more committed to their work since they felt their views were being considered by the more senior officers. (6, p. 19-12)

This system tried out experimentally in Mbere was a first effort to introduce innovation into the management of the Ministry of Agriculture's field staff. However, two important problems in the administration of the extension service in Kenya were not considered:-

1. The basic unit for planning, implementing and coordinating development activities in Kenya is the District. The management system devised in Mbere encompassed only the Division, a subunit of the District. The problem of integrating divisional efforts with District level planning and coordination was not addressed.

2. Planning extension services in single monthly meetings is only possible for routine activities. Quite often, new and comprehensive extension projects are called for which cannot be planned in one meeting. The system devised in Mbere offered no suggestions for this sort of planning.

A Proposal for Interlinking Divisional Extension Management within the District

We would like to propose a way in which the system of planning meetings, recording and reporting at the divisional level might be integrated within the District framework. A possible tool for coordinating divisional extension activities at the District level could be a monthly staff meeting chaired by the District Agricultural Officer (D.A.O.) and attended by other Ministry of Agriculture officers at the District level and by the A.A.O. from each Division.

Using the recording and reporting system devised in Mbere, the A.A.O.s could provide the D.A.O. and other officers with accurate, comprehensive and timely information about extension activities and problems in each Division. With this information, the D.A.O. could make appropriate adjustments in targets and priorities, and he could resolve problems which involve operations at higher levels without delay.

This possible management system could then be integrated into the system of District-level project planning and project implementation. Such a planning and implementation system was introduced into all six S.R.D.P. areas in 1970-1972 and has apparently been successful. This is the Programming and Implementation Management System (PIM). With minor adjustments it could be used for District development planning, which is already being proposed in part through the new District Development Planning devices. This system might, of course, also be used by other operational Ministries at the District level.

EXPERIMENTATION IN MANAGING THE PLANNING OF NEW AND MORE COMPREHENSIVE EXTENSION PROJECTS

We have already mentioned that comprehensive planning of new extension projects cannot be carried out at monthly staff meetings. For one thing, a meeting lasts only a few hours, and this is not enough

time for comprehensive planning. Furthermore, the style in which meetings are conducted is not appropriate for carrying out this sort of planning.

It is extremely important to plan new extension projects carefully and thoroughly. The importance of the planning component is often underestimated, and for this reason, we shall discuss in more detail some of the common planning needs which must be met when organising extension at the locational level.

#### Planning Requirements for Extension Projects

We have prepared a list of planning needs which, in our opinion, must be met in most cases if extension projects are to be carried out successfully.

(a) Planning the Field Staff's Acquisition of Skills: Agricultural field workers in Kenya are basically generalists.<sup>3</sup> They are supposed to have some basic general knowledge of agriculture, but for each new extension activity they are liable to require some specific "top dressing" of their skills. The content of this specific "top dressing" has to be planned and decisions made as to when, where and how the necessary training will be conducted. The use of inservice training as a management tool will be discussed further on in this paper.

(b) Planning the Selection of Farmers: Usually only a very small proportion of the farm population can be reached directly by the extension staff in a given period of time, such as during one agricultural season. Thus it is necessary to select which farmers are to be approached and provided with specific extension services, such as training courses, seeds or credit.

The selection of farmers must be made according to certain specific criteria: Should the best or the average farmers be chosen? Should they be chosen as a group of neighbours or as individuals scattered throughout the sublocation? Should they be commercial or subsistence farmers, or should their orientation in these terms not be taken into consideration?

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3. Field staff with specialised knowledge of certain crops are employed by organisations which cater for particular cash crops, such as the Kenya Tea Development Authority and the pyrethrum, coffee and cotton boards.

After the selection criteria are agreed on, a recruitment procedure must be worked out: Should the agricultural extension workers choose the farmers to be included in a particular project independently? Should the local administration be involved in the selection? Should the local community take part in the selection process, for instance through an Assistant Chief's baraza (meeting)? Perhaps a number of people should be involved: the field staff could inform the Chiefs concerning the selection criteria, the Chiefs could call barazas, the farmers could select groups of farmer demonstrators at these meetings, and then the groups could elect their own leaders who would be in direct contact with the extension staff.

One reason the selection process must be carefully planned is that it must be carried out well before the beginning of other extension activities. An appropriate time table is an important aspect of the plan.<sup>4</sup>

(c) Planning Farmer Training: The method of training must be chosen according to the specific message which the extension service is trying to transmit to the farmers. This message can be more or less complicated and more or less compatible with the farmers' way of thinking. If the message is very simple and is compatible with what farmers are doing already, it can be conveyed rather quickly and it would be a waste of resources to conduct a long training course. A field day at the village might be more appropriate. If a message is more complicated, but is not incompatible with the farmers pre-existing practices, a two-day training and demonstration course conducted at the village might be desirable. If, on the other hand, an innovation changes the whole farm management system, it may be necessary to hold a one-week training course at a Farmers Training Centre.<sup>5</sup>

The farmer training component must be closely coordinated with other aspects of an extension project. It should meet a particular need. For example, if there are two components of a project, such as demonstrations plus training courses, which are meant to provide the farmers with new skills, their separate functions should be clarified and coordinated.

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4. Effective selection procedures are discussed and evaluated in the second S.R.D.P. evaluation (6, Ch. 8). The theoretical reasoning behind certain recruitment procedures is discussed in I.D.S. Discussion Paper No. 200. (8)

5. A detailed discussion of effective farmer training methods is found in the second S.R.D.P. evaluation. (6, pp. 8/19-26)

The demonstrations might concentrate on how new practises are to be carried out, and the training course might emphasise the reasoning behind the new practises.

Obviously, the training sessions must be carefully timed. They must be held after the farmers have been selected and before they are expected to put their new knowledge into practise, for example at the time of seedbed preparation. It might be necessary to conduct a number of training courses more or less simultaneously in different areas, such as sublocations, and in this case the need for careful planning is clear.

(d) Planning the Provision of Inputs and Credit: A number of questions concerning the provision of inputs and credit must be answered during the planning stage of an extension project: Should inputs be provided to farmers, and should they be sold, given free, or sold on credit? If loans are made, the criteria for recipients need to be decided upon and the procedure for repayment worked out. The distribution of the inputs must also be organised; for example transport might have to be arranged. A careful time schedule for the provision of inputs must also be made.

(e) Planning Demonstrations: New ways of carrying out a number of farming operations such as seedbed preparation, planting, the timing of harvesting, threshing, grading and storing, might be demonstrated to farmers. Several questions must be answered when demonstrations are planned: Should the demonstrations be carried out on special plots used for this purpose only or on the farmers' own fields? How many farmers should participate in a demonstration, and how should farmers be selected to act as demonstrators?

(f) Planning Follow-up Activities: If training courses are to be conducted, inputs and credit distributed and demonstrations held, follow-up activities must be planned carefully to make sure that farmers are using new information and materials effectively and that the extension effort is having the greatest possible impact. How should the initial extension activities be followed up, and by whom, when and where? This stage of the project must be planned at the outset.

(g) Planning the Marketing Arrangements: A number of questions concerning the marketing of crops have to be anticipated at the planning stage. When and where will the farmers be able to sell their crops? Who determines the



criteria by which the crops will be graded in terms of quality? Will the farmers only be able to sell their crops in full bags, or can they sell smaller quantities as well? Who is going to negotiate on these issues with the buyers, who might be the branch managers of the Maize and Produce Board or their local trading agents? What arrangements need to be made for transporting the crops to market? Should the repayment of loans be administered through the marketing system?

(h) Planning for the Following Season: Should the farmers keep seed from this season's crop to use as planting material for the next season? Where can new farmers who become interested in the crop obtain seed? Should credit facilities be extended to these new adopters? How can the further diffusion of a new crop or cultivation method be made self-generating, reducing the need for administrative intervention? These issues must all be addressed when the project is first being planned.

#### The In-service Training and Planning Workshop as a Management Tool

In-service courses for agricultural field staff are already widely used in Kenya. These courses are usually held for one or two weeks or sometimes longer, at a Farmers Training Centre, and they are aimed at improving the general knowledge of field workers in such areas as farm management, or conveying more specific knowledge such as information about particular crops or livestock problems.

Since the facilities for conducting these courses are already in existence, it should not be too difficult to use them more systematically to enhance the effectiveness of the extension programme. In-service courses could be conducted as an integrated part of the preparation of more comprehensive extension projects, and all staff members involved in the project, including supervisors, could participate. In addition to the specific agronomic training needed to carry out a project, a course should include planning sessions in which the details of project implementation are worked out jointly by all the staff members involved. The course would be conducted in the form of a training and planning workshop.

In-service courses in Kisii and South Nyanza Districts were reorganised in 1974 on an experimental basis into training and planning workshops geared to specific extension projects. Two such workshops were organised by the Farmers Training Centres and the offices of the D.A.O.s, with assistance in curriculum development from the Institute of Adult Education at Kikuyu and the Institute for Development Studies. An

exchange of ideas was also arranged with the Training Section of the Ministry of Agriculture.

The workshops were held at the Farmers Training Centres and lasted for five days. Participants were agricultural field staff members from specific locations where a soya bean extension project was to be carried out, together with the appropriate A.A.O.s. District level Agricultural Officers also participated in the planning sessions.

The two components of the workshops were the transmission of project-specific knowledge and skills to the field staff during the first three days, and project planning during the last two days. The following objectives, which probably can be replicated for any other crop innovation, were set out for each day of the workshops:-

First Day: First the extension workers were informed about the advantages which the farmers would enjoy as a result of the innovation to be introduced. They were also given information about effective extension methods for this particular innovation, and both topics were discussed.

Second Day: The husbandry techniques necessary to successfully carry out the innovation were explained to the field workers, and specific husbandry problems were discussed.

Third Day: The fieldworkers spent the day practicing in the field the skills necessary to successfully carry out the crop innovation.

Fourth Day: During the first three days the extension staff received the relevant training necessary to introduce the crop innovation to the farmers. During the fourth and fifth days the plan for the extension project was prepared. First the extension procedures were worked out. The most appropriate procedures were devised for selecting farmers to participate in the project: this entailed answering such questions as, how many farmers to select, which selection criteria to follow and what procedures to use for selection. Then the best way to transmit the extension information to the farmers was decided. Choices were made among such extension techniques as training farmers in their fields or at the Farmers Training Centres, holding field days, carrying out demonstrations, distributing handouts or calling barazas. Then the selection and dissemination methods decided upon were combined into a procedural framework and this was written up and given to each staff member in the form of a guideline.

(See Appendix A: Extension Procedures for the Soya Bean Project - Guideline.)

Next the actual information to be transmitted to the farmers had to be decided - the content of the extension message. This message had two main purposes: to motivate the farmers so that they would want to adopt the innovation, and to provide them with the necessary knowledge and skills so that they could adopt the innovation successfully. To be motivated, the farmers needed to know the advantages of the innovation, so the advantages discussed on the first day of the workshop were systematised and listed in a written guideline for the staff. (See Appendix B: Extension Message - Advantages of Growing Soya Beans.)

To provide farmers with the necessary knowledge and skills, two teaching methods were proposed: a two-day training course in the field to teach the farmers the proper husbandry methods, and a demonstration of the practical cultivation skills. Field staff members participating in the workshop would conduct the training course in teams of two or three, and at this time they prepared a detailed teaching outline for the course. (See Appendix C: Extension Message - Husbandry Methods for Growing Soya Beans.) A written guideline was also prepared for the demonstrations to be conducted. (See Appendix D: Layout of Demonstrations - Guideline.)

Fifth Day: The objectives for the fifth day were to work out the time plan for implementing the project, and to allocate specific responsibilities to the staff members. Schedules and specific duties were worked out by small working groups, each consisting of the staff members from one location. These were revised and approved by the appropriate supervisory staff member, the A.A.O. or the District level Agricultural Officer. (See Appendix E: Timing of Extension Activities for West Kitutu and South Mugirango Locations.)<sup>6</sup>

#### Impact of the Workshop on Staff Members' Performance

Researchers from the Institute for Development Studies were able to monitor the implementation of the Soya Bean Extension Project in Kisii. Some aspects of the project were observed, and field staff and participating farmers were interviewed by means of a questionnaire in Wanjare Location, comprising six sublocations, Bogitaa, Bokeira, Bomorenda, Bonyando, Bomuanda and Bomariba. The major conclusions of the evaluation are summarised in Table 1.

6. Further details of the workshop curriculum are provided in I.D.S. Working Paper No. 186. (9)

Table 1. Implementation of major project components by field staff in Wanjare Location - achievements and problems.

Project Component	Achievements	Problems
Assistant Chief's baraza for selection of farmers	Carried out in each sublocation according to schedule and selection criteria.	In each sublocation 12 farmer-demonstrators were to be selected by the community. Asst. Chiefs tended to appoint demonstrators. This was reported by staff to supervisors who then influenced Asst. Chiefs to drop this unwanted behaviour. Lesson: Asst. Chiefs should be involved in relevant extension planning.
2-day field training course conducted by field staff and F.T.C. teachers	Held in each sublocation according to schedule and written guidelines. Average attendance per sublocation was 60 farmers, including the 12 demonstrators.	In 1 sublocation factions fought about location of the course. Field staff handled problem with assistance from Chief.
Seedbed preparation and planting demonstration	Carried out in each sublocation according to schedule and guideline.	No problems observed.
Seed distribution	The 12 demonstrators in each sublocation received seed on time.	Vehicle needed. Supervisory staff alerted D.A.O. and he provided vehicle.
Planting	All 72 demonstrators planted pure stand in rows.	Rains stopped for 3 weeks after planting, causing poor germination for about 40% of the farmers. Reported to supervisors at follow-up meeting. Farmers given new seed, replanted with no problems.

Table 1 Cont'd.

Project Component	Achievements	Problems
Demonstrations during growing and harvesting period.	Only partially carried out systematically.	Some field staff considered further demonstrations unnecessary since husbandry is similar to that for other beans and had been taught in field courses. This view was apparently justified with 1 exception: rains lasted late so there were drying problems. Some farmers who had demonstrations on construction and use of drying racks dried their beans successfully, others who had no demonstrations had losses from rotting.
Marketing	All 72 farmers delivered crop in good grades and received payment.	Marketing arrangements delayed for reasons beyond staff's control. Payment arranged directly through D.A.O. to avoid further delay.

The working performance of the field staff who participated in this project was quite good. Surprisingly, there were no significant differences in staff performance in the six locations, although the level of qualifications and experience varied greatly. We would guess that the management system used for this project was a more significant determinant of staff performance than characteristics of individual staff members. If this hypothesis proves to be correct, then the key to improving extension performance in Kenya would appear to be the management system.

The routine aspects of this project were not organised systematically, as, for example, according to the meeting, recording and reporting system devised in Mbere. As soon as field staff reported problems, ad hoc meetings were called for field workers and staff from the D.A.O.'s office. The researchers from the Institute for Development Studies initiated a few meetings, records and reports, but this intervention would not have been necessary had there been an effective routine management system.

INTEGRATING THE ADMINISTRATION OF COMPREHENSIVE PROJECTS AND OF ROUTINE ACTIVITIES

the management systems described here for routine activities and for comprehensive projects are complementary and should be integrated. Every extension project includes both new and routine activities, and a management system which encompasses both sorts of activities is described in Table 2.

Table 2. Combined field staff management system for agricultural extension projects.

SYSTEM A New and Comprehensive Planning	SYSTEM B Routine Planning and Implementation
<p><u>For the project area</u></p> <p>Supervisor: A.A.O. plus relevant District-level officers</p> <p>Management Tool: Inservice Training and planning workshops for all relevant field staff in project area.</p> <p>Implementation is largely routine and should be managed with System B.</p>	<p><u>For the District</u></p> <p>Supervisor: D.A.O. or relevant District-level officer</p> <p>Management Tool: Monthly planning meeting at District headquarters with A.A.O.s.</p> <p><u>For the Division</u></p> <p>Supervisor: A.A.O.</p> <p>Management Tool: Monthly planning meeting in each location with all relevant field staff. Recording and reporting system for relevant staff members.</p>

This combined field staff management system could easily form part of the Project Implementation Management System (PIM) currently in operation in all six S.R.D.P. areas and considered fairly successful. With only minor adjustments it could also be used by District headquarters.

THE ADVANTAGES OF FIELD STAFF PARTICIPATION IN EXTENSION PLANNING

The participation of field staff in extension planning has important implications for the success of the extension effort. This is because each extension supervisor is responsible for workers spread over a large area, each dealing with specific local conditions and problems. The supervisors and higher personnel are not fully informed about these conditions and problems. To meet with individual field workers regularly to help solve their specific problems, the supervisors would need a great deal more time and transportation facilities than they actually have.

With the participation of field workers, projects can be planned which take into account the workers' knowledge of local conditions so that extension activities are devised which are suitable for specific areas. Inservice training and planning workshops to prepare extension projects and regular staff meetings, recording and reporting paperwork to monitor routine activities should enable supervisors to be in closer communication with extension staff and to plan more realistic and appropriate extension activities. This does not mean that field staff have to be trained in the intricacies of planning: their role is to assist their supervisors at the workshops in preparing timetables and written guidelines which are then used for organising and carrying out their own work. (See Appendices A to E.)

Most staff members seem to be in favour of this more participatory management style. Twenty-six staff members who attended the training and planning workshop in Kisii were interviewed by I.D.S. researchers. They were asked whether it would be better for the instructors to prepare the guidelines (handouts) before the workshop or for the participants and the instructors to prepare them together. Only 4 thought that the instructors should prepare the guidelines before the workshop, and 22 felt that the participants and instructors should prepare them together. When asked the reasons for their responses, the four who would have preferred to receive guidelines already made out by the instructors stated that the course would be easier for the participants if they could receive prepared material, or that it was not appropriate to spend time preparing materials during a course. One respondent felt that the instructors had not prepared for the course adequately since they had not written the guidelines.

The 22 staff members who preferred to participate in the preparation of guidelines, on the other hand, clearly recognised that this procedure entailed definite advantages for their own work. They felt that guidelines

prepared jointly were more appropriate to their working conditions and that all foreseeable problems had been considered. They mentioned specifically that a variety of good ideas had been raised during the planning sessions and that the resulting timetable was realistic.

Another important benefit can be expected from the participation of field staff in project planning: Staff members should identify more fully with the goals of projects which they helped plan and they should have a better understanding of the projects' components and objectives. They are more likely to feel that the goals of a project are realistic and that achievement of these goals depends directly on their own performance. Thus both motivation and skills are enhanced.

#### SOME FINAL RECOMMENDATIONS

1. The introduction of a field staff management system is meant to lighten the work load of field workers and their supervisors. It should not function merely as an additional burden of meetings and paperwork.
2. The management system -- its paperwork, scheduling and other devices -- must be simple. When choosing among alternative procedures to serve a particular purpose, the simplest one should be selected. Systems of reporting and recording on paper should improve and simplify communication and supervision.
3. The introduction of more efficient field staff management systems is an innovation which must be introduced and supported at the level of ministry headquarters. Usually it is appropriate to introduce such an innovation in phases. For example, in the first phase the new system could be introduced into three Districts of one Province; in the second phase it could be introduced throughout the Province; and in the third phase it could be introduced in the rest of the country. This phasing provides the opportunity to evaluate and improve the new system before it is widely expanded.



APPENDICES

Guidelines for extension procedures for a soya bean project were developed by agricultural field staff members at an inservice training and planning workshop held at the Homa Bay Farmers Training Centre on July 29 to August 2, 1974. Participants were agricultural extension staff from Kisii, South Nyanza and Kilgoris and F.T.C. staff from Kisii and South Nyanza. Agricultural research staff from the Nyanza Agricultural Research Station and extension researchers from the Institute for Development Studies, University of Nairobi, assisted in conducting the workshop.

APPENDIX A: EXTENSION PROCEDURES FOR THE SOYA BEAN PROJECT (GUIDELINES FOR FIELD STAFF)

How extension should be initiated at the sublocational level:-

1. Inform the Chief of the location about your planned extension activities.

It might be useful to inform the local people at a locational baraza (Chief's baraza).

2. Involve the Assistant Chief and ask him to call a sublocational baraza.

In this baraza you must explain to the farmers the basic aspects of:-

- (a) The advantages of growing soya beans,
- (b) the husbandry involved in growing soya beans, and
- (c) how extension will be organised.

After having explained this sufficiently the selection of farmers to participate in the project can take place.

Follow these steps:-

1. Let the farmers themselves select an area where they want to start the project.
2. Then let the farmers themselves select the group of participants (Do not interfere but make sure the group forms a geographic cluster with all participants living close together; no exception should be allowed).
3. Then let the selected participants chose their group chairman and secretary. (Explain that only farmers living permanently among

the group members should be eligible. Honourable persons such as businessmen, pastors and teachers have not proven to be effective leaders since they are absent too much of the time.

Lastly you must set and announce the date and place of the first meeting with the group of farmers (with agreement from the group leaders).

#### First Meeting with the Group

1. Let the group leaders organise the meeting, giving consideration to the chairman as the true group representative.
2. This first meeting should be considered a training course for adults. Do not merely give instructions!  
Let the farmers discuss your points!  
Listen carefully to the farmers' questions!  
NEVER treat them like students.
3. The farmers want to discuss with you the following points:-
  - a. Details about the advantages of growing soya beans,
  - b. Details about husbandry methods,
  - c. How you are going to assist them in carrying out soya bean cultivation.
4. Set up the next extension activity (plot preparation).

#### Supervision of Plot Preparation

1. Control the preparation of each group member's plot. Control the size of the plots.
2. Advise the farmers on how they can improve soil fertility by using available means.
3. Give advice and strictly control soil conservation measures.

If you have carried out all those preparations carefully, your further extension work will be very easy.

#### Demonstrations

You should demonstrate the following points (for details see the demonstration handout):--

1. Seed bed preparation, how to improve soil fertility with locally available means and how to prevent soil erosion.
2. Planting
3. Weeding
4. Harvesting
5. Drying, if there is too much rainfall
6. Threshing, winnowing and grading.

Storing and Marketing

You must supervise crop storage, give the farmers information about marketing and make sure the marketing is successful.

You will receive special handouts to help you

1. Explain the advantages of growing soya beans,
2. Teach appropriate husbandry methods and
3. Carry out demonstrations.

APPENDIX B: EXTENSION MESSAGE-ADVANTAGES OF GROWING SOYA BEANS (GUIDELINES FOR FIELD STAFF)

1. There is an excellent market both within the country and overseas for soya beans used for food and oil.  
Marketing is carried out through the Maize and Produce Board.  
If soya beans are grown widely, factories will be attracted and will be built close to growers.
2. The price for soya beans is high compared to that of other beans.  
In 1974/75, Shs. 115/80 were paid per 90 kg bag with a commission to the agent of Shs. 4/60. If a farmer takes his soya beans to the Maize and Produce Board himself he receives this commission plus 9 cents per mile per bag for transport.
3. Yields are good: 4 - 6 bags per acre are obtained on soils of average fertility, and higher on more fertile soils. Soya beans can be grown without fertiliser.
4. Inputs of labour and capital are similar or less than for other beans. For  $\frac{1}{2}$  acre, seeds cost shs 10/- to shs 15/-. Seeds could be obtained from the previous crop, unlike hybrid maize.
5. Soya beans mature in just three to four months. Two crops in one year might be obtained easily.

6. Soya beans are more drought resistant and suffer less from pests and disease than most other bean varieties.
7. They are suitable for crop rotation because they take fewer nutrients from the soil and add nitrogen to the soil. They also improve soil fertility because of their deep root system.
8. As food, they are more nutritious than many other crops. They contain 40 per cent protein and 20 per cent oil. They are excellent food for humans and for livestock, but they require special preparation.

APPENDIX C: EXTENSION MESSAGE - HUSBANDRY METHODS FOR GROWING SOYA BEANS (GUIDELINES FOR FIELD STAFF)

Preparation of the Soil

1. Prepare soil to a fine tilth for good germination. Dig in the weeds, but remove couch grass roots completely. Remove stones, stumps and cut bushes.
2. Soil fertility is a crucial factor for high yields. Many soils are nearly exhausted or at least are deteriorating in fertility. Farmers can improve their soil fertility without spending cash, if you advise them properly to use:-
  - a. Dung
  - b. Boma manure
  - c. Compost (look at your course notes!)
  - d. Green manure
  - e. Crop rotation of heavy feeders with leguminous crops
  - f. Deep ploughing (removal of "plough pan")
  - g. Fertilisers, if there are no better means available locally and if profitable.
3. Farmers lose considerably through soil erosion. Once soil erosion has occurred it is extremely difficult to cure the damage. Soil erosion can be prevented if you explain to the farmers what they should do. You know about the following measures:-
  - a. Ploughing across the slope
  - b. Planting across the slope
  - c. Making drains and little walls (with stones or branches)
  - d. Strip cropping if the slope is steep
  - e. Terraces if the slope is extremely steep.

Of course the improvement of soil fertility and soil conservation should not be restricted to soya bean growers. It is a necessity for every farm and every crop.

Planting

1. The seeds should not be older than twelve months. After twelve months the viability is low which means germination is poor. If the only seeds available are a bit older than one year, you may still achieve a fairly good germination by putting two beans, instead of one, every three inches.
2. "Belgian Congo" variety is the highest yielding; its maturing time is about four months. "Hill" variety yields less but matures in three months.
3. Plant late in the long rains (after maize is planted) and early in the short rains.
4. Plant only when the soil contains sufficient moisture.  
DANGER: DRY PLANTING SPOILS GERMINATION!
5. Plant in furrows two to three inches deep. Put loose soil on top and do not press the soil.
6. Plant in pure stand. Do not interplant soya beans. Soya beans do not grow well in shady places.

Seed Variety	Spacing between rows	Spacing within rows	Seed amount for the $\frac{1}{2}$ acre
Belgian Congo	1 $\frac{1}{2}$ ft.	3 inches	8 kg.
Hill	1 ft.	3 inches	12 kg.

The spacing between rows is less with the "Hill" variety because the plants are considerably smaller than the "Belgian Congo" variety and the root system is smaller as well.

Weeding

1. Weeding must be done when all weed seeds have germinated, about three weeks after planting.  
Leave the uprooted weeds between the rows - it improves soil fertility and prevents soil erosion. (Only couch grass should be removed from the shamba completely.)

2. Weed a second time later if necessary.

#### Protection of Growing Soya Beans

1. Right after germination birds, especially doves, can damage the crop if they come in large numbers. Use watchmen or erect scarecrows,
2. Rabbits and antelopes like growing soya beans. Dogs can chase them away.
3. Moles can also do some damage. Use poison "Rodent" or "Pangabloc".

#### Harvesting

1. When the pods are brown and the leaves have fallen, the plants should be uprooted.

DANGER: IF THE PLANTS OVERMATURE THE PODS WILL BURST AND THE SEEDS WILL BE LOST.

Remove a little soil from the roots. It will make grading easier later.

2. The uprooted plants must be dried by putting them in the sun. If there is rain continuously there is danger of rotting. To avoid rotting, the plants have to be put on drying racks (see your course notes). Never stack the uprooted plants for more than three days in a heap if they are wet.

#### Threshing, Winnowing, Grading

1. Thresh as for other beans (put it in a bag and beat with sticks).
2. Winnow with wind.
3. Remove all soil and other particles as well as spoiled beans.  
The quality depends largely on grading. (Badly graded beans may not be accepted for marketing.)
4. If the beans are still too soft, they have to be dried further. (Beans are dry if you cannot press in your fingernails.)
5. Mix the thresh with dung and put it back into the shamba. This will improve soil fertility.

#### Storing

Store away from rats and mice, in a dry and airy place (never in closed plastic bags!).

APPENDIX D: LAYOUT OF DEMONSTRATIONS (GUIDELINES FOR FIELD STAFF)

Days	What to be demonstrated	What to be used for demonstration (apparatus)
	1. Soya bean seeds	seed sample
	2. Soya bean plant	whole soya bean plant with roots and pods
A	3. $\frac{1}{2}$ acre area	pace, for example, an area 35 steps by 70 steps or use a tape measure ( $\frac{1}{2}$ acre will always be 2420 sq. yards).
	4. Land preparation: digging or ploughing and removal of clods. Explain what is plough "pan".	panga; jembe; plough
	5. Planting	string marked in 3-inch intervals, sticks $1\frac{1}{2}$ ft long and 1 ft long, another stick marked 2 inches and 3 inches for depth of furrow, pegs, seed, jembe and people to assist
B	6. Weeding	small hoe or jembe
C	7. Harvesting	whole plant with brown pods and dropped leaves; another plant with shuttered pods (overmatured)
D	8. Drying on racks	sample of racks
E	9. Threshing	sticks; empty sacks, mats or hardened ground
	10. Grading and Winnowing	winnowing trays; impure seeds and dirt
	11. Proper drying	well dried and poorly dried seeds
F	12. Increasing soil fertility by ordinary means	animal dung, plant remains suitable for putting in cattle boma; green plants suitable for green manure; compost
	13. Advise about proper crop rotation	plants with long and short root system, leguminous plant with nodules, fertile soil through leaf fall

APPENDIX E: TIMING OF EXTENSION ACTIVITIES FOR WEST KITUTU AND SOUTH MUGIRANGO LOCATIONS (GUIDELINES FOR FIELD STAFF)

West Kitutu

Programme Point	Administrative unit and place	Time	How and what to be arranged.
1. Securing seeds	for West Kitutu with D.A.O.'s Office	immediately	contact A.A.O. and/or D.A.O.
2. Involvement of Chief and Asst. Chiefs	West Kitutu	5th Aug. 13th Aug.	Locational Instructor, Full briefing about the Programme by Locational Instructor
3. Sublocational baraza	All 7 sublocations of West Kitutu	13th - 31st August	Arranged with Asst. Chiefs, (a) <u>Intro-duction</u> of S.B. to farmers by explaining the basic points of: advantages of S.B., husbandry, assistance by extension staff (b) <u>Selection of Area Group Group leader</u>
4. First meeting with group of farmers (training)	in all 7 sublocations	18th - 25th August	Detailed instructions and discussion about advantages (of Soya B.) husbandry fixing date for 1st demonstration (See your special handout)
5. Supervision of land preparation	in all 7 groups	after first meeting	Special emphasis on improving soil fertility by local means and soil conservation
6. Planting demonstration	in all 7 groups	after short rains have started	(see special handout)

If the group size is 12 farmers, in W. Kitutu 84 farmers (each cultivating  $\frac{1}{2}$  acre) are going to start growing soya beans.



South Mugirango

Programme point	Administrative unit and place	Time	How and what to be arranged
1. Securing seeds	D.A.O.'s Office	immediately	Locational Instructor
2. Involvement of Chief and Asst. Chiefs	Chief's Centre - S. Mugirango	5th August	Full information and arranging barazas: Locational Instructor
3. Sublocational barazas	all 41 selected Sublocations of S. Mugirango + control Sublocation	12th Aug. (simultaneously)	Introduction (advantages, husbandry, assistance), selection (of area, group, group leaders)
4. Locational staff meeting	Chief's Centre	16th Aug.	Discussion of project matters and planning next steps
5. First meeting with group of farmers (training)	all 4 selected Sublocations	around 20th Aug.	(see special handout)
6. Land preparation	all Sublocations	after first meeting with groups	(see special handout)
7. Demonstration: planting	all Sublocations	after short rains have started	(see special handout)

If the group size is 18 farmers in S. Mugirango, one expects 72 new growers.

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