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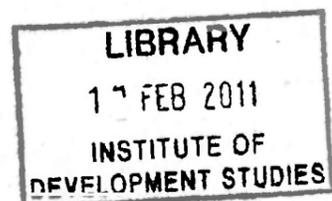
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MARKETING FARM SUPPLIES IN RURAL AREAS:

A Study of Farm Inputs Availability in Tetu Division

by

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MARKETING FARM SUPPLIES IN RURAL AREAS
A STUDY OF FARM INPUTS AVAILABILITY IN TETU DIVISION

by

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Abstract

The present study presents the results and recommendations stemming from a baseline survey on the nature of marketing farm supplies in Tetu Division, Nyeri District. The survey was conducted among retail traders in the Division early this year. It was concerned with determining the degree to which crucial farm inputs were available in the Division, especially deep within the rural areas. It focussed particularly upon the availability and distribution of those inputs necessary for effective hybrid maize husbandry as an example, paying special attention to the need for repackaging these inputs in smaller quantities and for relabelling them with more meaningful terminology. Other issues investigated include determining the accuracy with which stockists estimate the seasonal purchasing needs of their clients and the degree to which main supplies are engaged in delivering inputs to stockists.

Since the present study is a concomitant of the parent study, the Tetu Extension Pilot Project, recommendations are cast in the light of this parent study. Thus, the study concludes that the problem of farm supplies in Tetu Division may be summarized as undersupply in some areas part of the time, and non-supply in other areas most of the time. This problem is made worse by packaging of some supplies which is too bulky for the needs of many farmers and package labelling which is product rather than use oriented. One way of overcoming these problems is by extending loans from commercial banking sources to farm supply stockists to enable them to carry a comprehensive and adequate shopping list of supplies. To ensure a steady market and increase predictability of demand, however, the programme should be closely connected with the Tetu Extension Pilot Project which is currently experimenting with extending farm input loans to trainee farmers. These loans could be extended as vouchers redeemable in farm supplies from stockists and repayments made into a revolving fund which, in time, might well evolve into a farmers credit union.

PURPOSE OF THE STUDY

In 1964, de Wilde et al noted that both co-operatives and commercial firms were performing a satisfactory supply function in or near areas where there were many European farms. The problem then was that "... in traditional African areas, equipment, fertilizers and insecticides were often unavailable unless farmers were prepared to travel considerable distances" (De Wilde et al, 1964, p.74).

It is the intention of the present study to determine the degree to which the small holding farmers, particularly those located deep within the rural areas, are still experiencing difficulties in acquiring farm supplies. We are especially interested in those supplies concerned with the cultivation of hybrid maize since maize growing is an enterprise which is amenable without restriction to most African farmers. It is further the intention of the present study to forward suggestions directed towards alleviating the problem of supplies availability for the small holding farmer.

Two further constraints which may be militating against the ready acquisition of farm supplies by small holding farmers will also be studied. Firstly, it has been observed by extension personnel that farm supplies, especially fertilizers, are packaged in sizes which often exceed the immediate or seasonal needs of small holding farmers. The smallest package of phosphatic and nitrogenous fertilizers currently available on the market is the 50kg. package. This quantity might well exceed the needs of many small holding farmers. It is the intention of the present study to determine the degree to which rural stockists of farm supplies are currently repackaging farm supplies with smaller units more convenient and commensurate with the needs of small-holding farmers.

Secondly, it is noted that current labelling practices of farm supplies are such that they frequently connote the chemical or technical properties of the products rather than the use for which they are intended. For example, a fertilizer labelled "Double Superphosphate 42% H₂O soluble" does not help the average farmer to know what the purpose or function of that fertilizer is. It is thus also the intention of the present study to determine the degree to which customers of stockists are experiencing difficulties in internalizing and reproducing supply terminology, and also the extent to which localized terminology is being carried.

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Justification of the Study

The present study is not an isolated inquiry. It forms part of a comprehensive and integrated approach to rural development being experimented with in Tetu Division of Nyeri District in the foothills of the Aberdares. Tetu Division has been designated a Special Rural Development Programme area in which new strategies for accelerating rural development may be tried and tested. The guiding principles for undertaking this experimental development as set out in the Development Plan 1970-74, p.177, stress that, projects and methods which are found to be successful in the SRDP areas must be replicated subsequently in other similar areas, and that therefore existing resources of staff and finance must as far as possible be used in producing what, in effect, is a large scale self-help effort. The problem of the availability of farm supplies in adequate quantities and reasonable proximity to rural peasant farmers involves most small-holding farmers in Kenya. Finding a solution in Tetu Division, therefore gives promise of providing a solution for the rest of Kenya.

Currently underway in Tetu Division is an experiment aimed at rapidly increasing the proportion of farmers growing hybrid maize (see Ascroft et al, 1971). The present study is designed to complement this experiment by focussing specifically upon the market availability of those supplies associated with progressive maize husbandry. The underlying aim is to ensure the long run success of the experiment by ensuring that marketing constraints of the type spelled out below are minimized.

The Need for Widespread Market Availability of Farm Supplies.

The existence of demand presupposes the existence of supply. It is fruitless to promote the utilization of some commodity when it is not readily available in the market. This appears to be the case with farm supplies which seem to be available mainly in bigger towns or in co-operative stores where they are accessible to members only, rather than deep within the rural areas where they would do the most good for the small-scale farmer. It is believed that traders in farm supplies deep in the rural areas are few and far between, thus constraining many farmers to travel long distances to purchase their supplies. The cost of this travel coupled with the loss of time from the farm incurred by making the journey might very likely cancel out whatever economic benefit which was to be realized from using recommended inputs.

It is further believed that rural stockists of farm supplies are frequently inadequately stocked so that shortages frequently occur. Inadequate stocking might arise from poor estimation of the demand for the supplies or to poor financing to purchase adequate stocks. Whatever the cause, the effect is once again for some farmers to travel long distances in search of supplies.

It is also believed that few stockists in the rural areas carry a comprehensive shopping list of related farm supplies so that it may be necessary for a farmer to purchase his supplies at more than one store, a pursuit that might likely entail costly travel.

Finally, it is believed that the burden of initiating orders and affecting deliveries is upon the small rural trader rather than the large commercial distributors of farm supplies. Apart from the fact that the rural trader must be self-motivating to engage in the farm supplies business, it is further necessary that he finds it within his meagre resources to lay on his own transport which is likely to increase the cost of the supplies. In an era when alcoholic beverages and patent medicines are transported by the distributors to remote places, it seems anachronistic that farm supplies upon which a substantial portion of Kenya's rural economy depends, are not being similarly marketed.

Yet withal, agricultural extension agents are engaged in persuading farmers to adopt such supplies as fertilizer, pesticide and new seed varieties, more of which may be immediately available nearby. Indeed, de Wilde et al (1967, Vol I, p.74) observed that "... extension workers often did not know where they (supplies) could be procured."

The Need for Repackaging in Smaller Quantities

Small scale farmers have small acreages and few resources for investment. Farmers in Tetu Division, Nyeri District, have an average acreage of $4\frac{1}{2}$ acres and the lower quarter of farmers in terms of progressiveness have an average of about $2\frac{1}{2}$ acres. (see Ascroft et al, 1971, p.20). In Tetu Division, less than 7 percent of all farmers ever grow more than one acre of hybrid maize, the average being less than a half acre (see Ascroft et al, 1971, p.18).

Thus it is clear that in Tetu Division, a great many farmers growing hybrid maize require small quantities of these supplies commensurate with the small acreages they devote to the enterprise.

Furthermore, diffusion of innovations theory indicates that there are basically five stages in the innovation decision making process. In adopting an innovation, farmers usually pass from

(1) awareness that the innovation exists, (2) to interest in it, usually indicated by seeking information about it, (3) to persuasion, where the individual becomes convinced that the innovation is advantageous, (4) to trial, when the new idea is tried out on a small-scale basis, (6) to decision, when the individual chooses to adopt or reject the innovation (Rogers with Shoemaker, 1971). It is at the trial stage when a very small acreage of an enterprise like hybrid maize is sampled that the farmer also needs very limited supplies of fertilizer, pesticide and hybrid maize seed in order to effect the trial. If these are not available in small quantities, then the chances increase that the farmer will forego the trial and consequently not adopt the innovation. To forestall this tendency, it would be desirable if small sample quantities of various farm supplies and inputs were available for trial purposes.

In Kenya today, all phosphatic and nitrogenous fertilizers are available in the rural areas only in the 50kg. and 100kg. bags. Hybrid maize of all kinds is available only in the 10kg bag. A 50kg. bag of NPK compound 20:20:0 is usually sufficient for a half acre of hybrid maize. The 10 kg. bag of hybrid maize covers an acre of land.

Considering the problem of fertilizers, a farmer wanting to plant one quarter or three quarters of an acre of hybrid maize, must either buy the fertilizer in co-operation with others with similar needs as himself, or buy more fertilizer than he needs in the hope of saving the balance for the next planting season.

The disadvantage of co-operative buying is finding reliable others with whom to co-operate in buying supplies. To have to be dependent on the co-operation of others in satisfying one's own needs is frequently more feasible in the short rather than in the long run. Yet even in the short run, our understanding is that co-operative buying is tedious to set up, being dependent as it is upon co-incidences of needs and the simultaneous availability of cash among the co-operating parties.

The disadvantage of buying more than one's immediate needs is twofold. Firstly, the scarcest of resources for the small-scale farmer, capital, is being unnecessarily tied up for long periods of time, capital which the farmer might well have invested in some other equally and immediately needed input such as pesticides. Secondly, unsealed fertilizer does not store well over long periods, tending as it does to decompose and become useless for application as a

fertilizer. Thus, a farmers' investment in excess fertilizer might well prove to be an unforeseen liability which does considerably more economic harm than good.

The present study seeks to determine the degree to which bulk supplies are being repackaged in smaller quantities by retailers to suit the needs of small-scale farmers. Support for experimentation with a variety of smaller packages of such supplies as fertilizer is contained in recommendation No. 44 of the Havelock Commission on Agricultural Inputs⁵ which states "That fertiliser distributors introduce 25 kg. packs of fertilizer as an alternative to the 50 kg. pack" (Chapter 4, para 34).

The Need for More Communicative Labelling of Farm Supplies

Communication theory argues that it is more useful to define the purpose of communication in terms of the goals of the creator and receiver of a particular message, rather than in terms of the property of the message. Berlo (1960, p.12) states that "... we communicate to influence - to affect with intent." A label on a bag of fertilizer is essentially a communication about the contents of that bag. However, if we are to communicate with intent to influence farmers to use the contents, then communication theory suggests, that the label should be addressed not to describing the chemical or other technical properties of the contents of the bag, but rather to describing the utility, purposes or functions of the contents, the goals that they are intended to achieve. Looking at the trade names assigned to various farm supplies, the labelling is almost exclusively addressed to the chemical properties of each product, as for example the label "DDT 5 percent. This places a heavy burden upon the stockist to explain to a farmer not only what Diphenol Dichloro. Tripropionic Acid means in terms of hybrid maize growing, but also that 5 percent does not mean that the cost of treating five maize plants is one cent. It places an even more onerous burden upon the farmer who is expected to achieve functional understanding of terminology entirely outside his normal vocabulary.

One wonders what the rate of non-adoption is which is caused by a farmers' inability to absorb, internalize and repeat the terms when making orders. In the present study, we shall attempt to determine from retailers what words or terms are actually used by farmers in placing orders in order to determine whether there is involving more explicative terminology that could be advantageously borrowed or modified to make labelling more communicative.

Methodology

Field work on the present study was carried out in collaboration with a DANIDA team of researchers interested in rural entrepreneurship in general (see Inukai and Okolo, 1972⁷). A structured questionnaire was developed for the DANIDA team. Questions for the present study were piggy-backed onto the DANIDA questionnaire.

Our sample consisted of all retail traders in all the market centres of Totu Division. Interviewing proceeded from December 1971 to January 1972.

The specific farm supplies upon which we focussed our attention were (1) Double Superphosphates, (2) Single Superphosphates; (3) Ammonium Sulphate Nitrate (ASN); (4) Calcium Ammonium Nitrate (CAN); (5) DDT dust; and (6) Hybrid Maize Seed.

In all, 126 retail outlets were interviewed in the four locations of Tetu Division. This figure includes four co-operative society shops. Of this 126 retailers, only 18, including all four co-operative shops, were found to stock at least one of the six types of farm supplies studied. About half the stockist of four supplies, including all four co-operative shops, were found to have a wide variety (five or six of the types studied) of farm supplies available in their stocks. The remaining half tended to stock one or two types of supplies, usually fertilizers. Thus, it is clear that a comprehensive shopping list of farm supplies are only available within very few shops in the Division.

Distribution of Farm Supplies Stockists

In Map 1, we have indicated the sub-locations in which each of the six types of farm supplies studied were found to be available. Of the 23 sub-locations in Tetu Division, 12 of them are without a stockist of any of the types of farm supplies studied and only four of them contain a set of traders who, singly or collectively, provide a comprehensive shopping list of all six varieties of farm inputs studied.

Muhoyas and Tetu Locations are especially destitute of stockists, corresponding to the findings of Ascroft et al (1971, p. 17) who showed adoption rates of hybrid maize in these two locations; especially Tetu location, to be considerably lower than they were in Thigingi and especially Aguthi. It is interesting to note that the best stocked sub-locations are rarely adjacent to Nyeri Town, but this may be because such supplies are available in Nyeri Town.

It may be seen, therefore, that stockists of farm supplies are thinly scattered throughout the division with a bias for the low-land sub-locations farther away from Nyeri Town.

As regards the distribution of the actual farm supplies, it may be seen from Map 1. that fertilizer, especially double superphosphates enjoy the widest distribution, being available in all 11 of the sub-locations found to be stocking at least one type of farm supplies. Hybrid maize seed is available in seven of the 23 sub-locations, A.S.F. or CAN. in 6 of them and DDT dust in only 4 of the sub-locations of Tetu Division. Thus, the distribution of farm supplies shows a marked favour towards phosphate fertilizers.+

+ It might be mentioned here that the latest Fertilizer recommendation of the Ministry of Agriculture for hybrid maize requires the farmer to buy compound fertilizer, 20, 20, 0, and not straight fertilizers.

Of the 18 stockists of farm supplies, 13 stocked single superphosphates, 12 stocked double superphosphates, 12 stocked hybrid maize seed, seven stocked DDT dust, four stocked C.A.N. and three stocked A.S.N.

All stockists were asked to estimate the quantity of stocks they intended to have on hand in readiness for the 1972 long rains. Those stocking double superphosphates expected to have an average of 3,600kg. on hand, whereas stockists of single superphosphates expected to have an average of 5,600 kg. on hand. Taken collectively, the eleven stockists of double supers expected have a total stock of around 39,600 kg. whereas the 12 stockists of single super expected to have 67,200 kg. on hand in the whole Division for the 1972 long rains. Calculating acreage at the rate of 100kg. phosphate fertilizer e.g. Single Supers per acre of hybrid maize, these figures translate into a total potential hybrid maize acreage that stockists are expecting to supply consisting of roughly 1000 acres, for the whole of Tetu Division.

Ascroft et al. (1971) show that only 30% of the farmers of Tetu Division grow hybrid maize at present. On the average, these farmers grow about one acre of hybrid maize. It is estimated that there are 11,000 registered farms in the Division, 30 percent of which is 3,300, which figure also provides an estimate of the actual total acreage of hybrid maize in the Division. Since the stockists in the Division are expecting to provide fertilizers for only 1,000 acres, it is evident that they have underestimated the Divisional needs, and that many farmers are going to have to make excursions out of the Division, probably to Nyeri, Karatina and Othaya, in search of fertilizers.

Regarding hybrid maize seed, the total estimated by the 12 stockists in the Division is about 14,000 kg. which, at the rate of 10 kg. per acre, is likely to cover 1,400. acres; i.e. producing the same conditions as for fertilizers.

As regards nitrogenous fertilizers and DDT, stockist on the whole feel considerably less confident in estimating demand for the phosphatic fertilizers and hybrid maize seed. Indeed, the uncertainty with regard to ASN and CAN is so great among half of those stocking these two products that they might stop stocking them.

All stockist of farm supplies in Tetu Division acquired their stocks from distributors located in Nyeri or Karatina. Mentioned were such distributors as the Nyeri District Co-op Union, Farmco, Mt. Kenya Suppliers, Abernethy Suppliers, KFA (Karatina), and Kenya Seed Merchants Co. Ltd. in Karatina.

Generally speaking, individual traders do not get stocks of farm supplies delivered to their shops by the distributors. Exceptions to this rule are the KPA who frequently deliver hybrid maize seed, and the manufacturers of DDT dust, who sometimes sell the product to traders direct from their mobile vans. Interestingly, hybrid maize seed and DDT dust packaging are the least bulky of the farm supplies studied.

The period of greatest demand for phosphatic fertilizer appears to be February through April and September and October, corresponding to the annual long and short rains. Nitrogenous fertilizers are usually in greatest demand three to four weeks after the start of each rain season, i.e., around April to May and November to December. As regards DDT dust, the period of greatest demand is from one to two months after the beginning of the rains.

Hybrid maize seed is in greatest demand in January; i.e., two to three weeks before the advent of the rains.

It would seem, therefore, that farmers tend to buy their supplies only when absolutely needed. That is, they do not buy all the fertilizers, seeds and insecticides they need at one time, but rather according to when each input becomes necessary to use. Given a knowledge of the seasonal purchasing practices of farmers and, hence, stockists, it seems feasible not only for main distributors to pin point peak periods of demand to within a week, but also to arrange distributive transport to cover that period.

These various constraints acting upon the distribution of farm supplies in the Division, particularly the propensity to under-estimate demand, have given rise to widespread shortages of most supplies in Nyeri District as at the time of writing. That is, the errors of estimate recorded during the interviews in December and January have come home to roost in April and May.

Packaging and Repackaging

As expected, stockists reported being able to acquire fertilizers from the distributors only in the 50 kg. and 100 kg. package sizes. Hybrid maize was available only in the 10 kg. package whilst DDT dust could be purchased from the distributors in the 5 kg. 400 gram. and 25 gram package.

Two out of every three stockists of double superphosphates are in some degree engaged in breaking down the 50 kg. and 100 kg. bags into smaller units for retail purposes. The figure is only one out of every two for single superphosphates whereas none of the stockists of A.S.F. or C.A.F. practiced repackaging.

The phosphatic fertilizers were most frequently repackaged into packages of up to 2 kg. bags but, in addition, could also be found repackaged in 25 kg.

Those stockists practicing repackaging declared themselves to be satisfied with the profitability of repackaging whereas those not practicing repackaging gave as reasons for not doing so the fact that they doubted the profitability of the practice because of the high labour cost of repackaging involved. A few non-repackagers also believed it to be illegal to open the distributors' packages for repackaging.

No retailers were engaged in repackaging DDT dust since existing package sizes were deemed small enough. Of the 12 stockists of hybrid maize seed in the Division, however, one was found who was repackaging the 10 kg bag into 1 kg. and 5 kg. bags. The balance either believed the 10 kg. bag to be small enough or thought it to be illegal to open and repackage the 10 kg. bag of hybrid maize seed.

Thus, repackaging for the convenience of the small-holder farmer occurs most frequently with phosphatic fertilizers than with other types of farm supplies.

Labelling and Relabelling

Stockists appear to be able to distinguish between three types of customers ranged seemingly according to the level of sophistication of the customers. The most sophisticated customers generally are able to specify accurately the name of the product they want according to the labelling on the package or to employ a convenient abbreviation such as double or single "supers".¹⁴ A second group would tend to employ some corruption of the labelling or to coin some local label highlighting some particular characteristic of the product. Double superphosphates are some times called "Ndabu" (corruption of "double") or "Goro" (the expensive type). Single superphosphates are frequently called just "Singles" or "raithi" (the cheap type). No special localised names were found for CAN, ASN or DDT. Hybrid maize seed, on the other hand, is variously known as "haimburindi" (corruption of "hybrid"), "mbembe cia ngirigacha" (agriculturalists maize), "mbembe cia fertilizer" (maize planted with fertilizer), and "mbembe cia grade" (grade maize).

The third group of customers are given to merely specifying the general category of the product required, such as "fertilizer" or the Kikuyu corruption for fertilizer "mbateretha". In such

cases, the burden is upon the stockist to probe deeply to determine precisely which fertilizer is wanted by his customer.

It may be noted, then, that few farmers have successfully managed to internalize and reproduce the mouth-filling English terminology given to agricultural inputs. It leaves us wondering how many farmers are not purchasing these inputs because they do not know what to ask for.

Summary of Main Finding.

The main finding emanating from the present study are:

1. Few retail outlets exist in Tetu Division carrying a comprehensive shopping list of farm supplies. Among these few, phosphatic fertilizers as opposed to nitrogenous fertilizers, pesticides and hybrid maize seed, are the most ubiquitously available.
2. Stockists of farm inputs are thinly scattered throughout the division especially in those low-lying sub-locations of Aguthi and Thigingi which are farthest from Nyeri Town. About half the sub-locations of Tetu Division are without a local stockist of any type of farm supplies.
3. Fertilizers in general present problems of bulk packaging/more so than pesticides and hybrid maize seed. Some stockists are resorting to repackaging of the 50 kg. and 100 kg packages of phosphatic fertilizers in smaller, more saleable quantities.
4. Stockists in general are experiencing grave uncertainties in accurately predicting the purchasing needs of their customers. They have grossly under estimated the farm supply needs, especially hybrid maize seed, for the 1972 long rains so that there currently exist severe shortages throughout the Division. +
5. Since only half the sub-locations have at least one stockist of farm supplies, and since those which do are frequently out of stock due to under estimation, many farmers are forced with expensive journeys to Nyeri town and Karatina in search of farm supplies.
6. While all main distributors are able to supply stockists from Nyeri town or Karatina, few of them are willing to deliver the supplies to the stockist, thus forcing the local traders onto their own usually meagre transport resources.
7. The seasons of peak demands for different farm supplies appear to be well defined and predictable within

+ Such shortages are, of course, aggravated by the fact that more farmers adopt hybrid maize each year, so that last year's requirement may be a bad guide for next year's order, especially if one is on the steep part of the diffusion curve.

narrow limits, so that distributors usually have ample notice and opportunity for laying on distributive transport.

8. The present terminology used for labelling farm supplies is seemingly understood and reproduced by only a small section consisting of more sophisticated farmers. The balance must struggle to coin suitable corruptions or leave the entire burden of specificity to the stockist.

9. There apparently exists a felt need among the farmers of Totu Division for smaller packages of fertilizers, a need which has prompted many retailers to repackage bulkier supplies in more convenient package sizes.

Conclusions and Recommendations

Taken as a whole, the problem of supplies availability in Totu Division might be summarized as undersupply in some of the areas part of the time, and unavailable supplies in the rest of the areas most of the time. This problem is exacerbated by bulk packaging of some supplies such as fertilizers, and property—rather than use—labelling of most supplies. It is easy to fall prey to pat solutions, to recommending that the base of farm supply stockists must be expanded, that the range and quantity of their stocks must be enlarged, that smaller packages must be introduced, and that supplies must be labelled more appropriately. More difficult to specify is the manner in which these ends are achieved. To this end, it is necessary to go beyond the data, to search elsewhere for existing solutions or to create new viable ones in order to lay a firm foundation for self-generating problem-solving development.

We have as yet not addressed ourselves to credit specifically directed at encouraging rural entrepreneurs to engage more effectively in the farm supplies business. Yet it is evident that most stockists, ~~being~~ perhaps the co-operative stores, treat farm supplies as a sideline which therefore occupies the lesser part of their concern. To jar stockists into a more central concern for farm supplies, some special action is needed. This special action might well take the form of credit extension to stockists as is being successfully tried in Migori Division, a sister SRDP area to Totu Division,

In Migori, an experiment to increase the base of farm supplies stockists throughout the Division is currently underway. A tripartite meeting of minds has occurred, involving the extension personnel and rural entrepreneurs who together assess the demand for farm supplies in the Division, and a commercial bank which sets criteria for loan

extension to the entrepreneurs. Together they make a careful selection of credit - worthy entrepreneurs to whom bank loans can be extended for the specific purpose of carrying a comprehensive shopping list of farm supplies. Bank loans are preferable to parastatal body loans because (1) of the decentralized nature of banks which reduces red-tape delays and muddling; (2) banks are less interested in extending once-and-only-loans and more interested in establishing a base of reliable clients to whom they can extend loans on a recurrent bases; and (3) extension personnel are relieved of the burden of loan repayment supervision. This procedure has established 13 comprehensive and committed stockists of farm supplies in Migori where previously there were hardly any and has encouraged the bank to seek more loanes to further widen the base of farm supplies stockists. We recommend that this same procedure might well be feasible in Teta Division.

However, broadening the base of stockists does not necessarily broaden the base farmers patronizing these stockists. There is no parallel credit scheme for farmers in the Migori experiment. Thus, while there is admittedly a greater volume of farm supplies being consumed in Migori Division, it is likely that the majority of consumers are (1) already well-to-do farmers taking advantage of the ready availability of farm supplies; and/or (2) farmers whose credit worthness is already established with individual stockists who, therefore, extend credit to them on an informal basis. Whatever the case, a problem exists for extension personnel because (1) they have little way of knowing or controlling which farmers are purchasing the supplies or receiving informal credit, thereby rendering extension follow-up very difficult, and (2) it is difficult to ensure equitable distribution of farm supplies to all sections and levels of farmers. Therefore, specific action is needed to ensure a broadening of the base of consumers to parallel the broadening of the base of stockists of farm supplies. This special action is already a feature of the Extension Pilot Project experiment currently underway in Teta Division (See Ascroft et al, 1971).

The Tetu extension experiment⁸ centres upon classifying farms according to level of development, then bringing farmers of the same level to the Farmer Training Centre for training according to a curriculum specially tailored to suit that level. Some 200 farmers who have so far not adopted hybrid maize are currently receiving training in hybrid maize husbandry in preparation for the June 1972 short rains. This figure will be greatly increased for the next long rains. A special feature of the project is the extension of supplies to the value of 49/- to each of these farmers to encourage them to engage in a small-scale (half an acre) hybrid maize trial, a trial which is carefully supervised by extension personnel to ensure proper adoption and application of the new techniques. The sum of 49/- is a loan, repayable in cash or in maize. In this scheme are to be found the seeds for a decentralized, self-regulating and hence self-generating system for equitably expanding the base of consumers of farm supplies.

Firstly, the Tetu Extension experiment is dedicated to training farmers by systematic selection from all levels of farmer development. Loan extension for initial small-scale trials is also systematic since it is dependent upon FTC attendance. Thus also is extension follow-up systematic, being at its most intensive immediately following FTC attendance. The basic aim, of course, is to give the uninitiated farmer a self-generating appetite for full adoption of progressive farming technologies.

Secondly, initial loans for trial purposes are extended at the level of the FTC on a criterion of selective attendance rather than on the risk-involving criterion of title-deed security. A measure of loan decentralization is thus achieved. A successful trial crop coupled with loan repayment renders the farmer eligible for a recycling through the FTC to receive more sophisticated training, thereby elevating him to a higher level of progressiveness. This introduces a measure of self-regulation with regard to loan repayments on the part of the farmer, thereby reducing the amount of loan repayment supervision on the part of extension personnel.

The question, of course, is one of recurrent loans for continued and expanding adoption for already mastered enterprises. Is the initial trial loan to be a once-and-only loan never to be repeated by the present system? If a farmer initially needed a loan to engage in a half acre trial, then surely the likelihood exists that further loans will be needed to engage in full adoption especially if he plans to expand beyond the initial half acre.

In other words, just as banks seek for reliable clients to whom to extend loans on a recurrent basis, so too should it be the aim to create a reliable clientele of farmers to whom to extend recurrent loans until such time as they are sufficiently established to allow the processes of self-generation to take root. Begging an affirmative answer, we prefer the following recommendations which are based upon ensuring that the measures of systematic selection, follow-up, self-regulation and decentralization so far achieved are not short-lived.

1. That repayments of small-scale trial loans so far extended are made to a revolving fund set up for the purpose.
2. That such repayments constitute membership to the revolving fund such that a farmer having completed repayment is entitled to negotiate a fresh loan from the fund for purposes of continued adoption and expansion of the enterprise which occasioned the initial loan.
3. That the burden of supervision of loan repayments devolve upon the farmers themselves, since it is in their own best interests to discourage tardiness of loan repayments and hence depletion of the revolving fund.
4. That therefore farmers themselves have an increasing responsibility for processing loan applications subsequent to the initial trial loans.
5. That over time the revolving fund evolves into a farmers credit union owned and operated by farmers for farmers, with provisions for shareholding by members, the issuing of low interest multi purpose loans to bonafide members and the investment of excess capital in reliable ventures.

At present the supplies to the value of 49/- per farmer are being handled entirely through the farmer Training Centre rather than through the normal commercial outlets in the Division. This, of course, is a short term arrangement dictated by the exigencies of experimentation. In time, distribution of supplies will revert to the commercial sector. It is at this point where our recommendations for expanding the base of stockists of farm supplies came into functional relationship with our recommendations for paralleling this expansion at the level of the consumers of farm supplies, namely, the farmers of Tetu Division.

Finally, problems of repackaging and relabelling farm supplies would be offered a context for solution given the machinery recommended above. The issues determining appropriate package sizes and labels are perhaps best handled in consultation

with the farmers themselves during the course of their training, and with the stockists during the course of their selection. Clear-cut recommendations do not, in our view, readily emerge from the data so far gathered.

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