

PJ-AY-600
ISN 53018
62

*REVIEW OF THE COMPUTER
REQUIREMENTS
OF THE
UGANDA AGRICULTURAL FINANCE AGENCY*

Prepared By:
Edward Murray
ACDI Computer Consultant

For Submission To:
The United States Agency for International Development

Agricultural Cooperative Development International
50 F Street, NW
Washington, D.C. 20001
Phone: (202) 638-4661
Telex: 160923 AGCODEV

000038

000041

S

November 1986

TABLE OF CONTENTS

RECOMMENDATIONS.....3
 Need for Computerization.....3
 Information: Key to UAFA Success.....3
 Equipment.....4
 Field Service Support.....5
 IBM Compatibility.....5
 Software and Training.....6
 Informal Training Resources.....6
 Training Support Material.....7
 Software Selection.....7
 Tentative Software Recommendations.....8
 A Self-Sustaining Program.....10

REVIEW OF UAFA'S COMPUTER NEEDS.....11
 Emphasis on Loan Management.....11
 Accounting.....12
 Planning and Research.....13
 Computerization: An On-Going Process.....13

COMPUTERIZATION PLAN.....15
 Micro Computers.....15
 Compatibility With Existing Resources.....17
 Strengthening Local Resources.....18
 Equipment Requirements.....18
 Equipment Specification and Costs.....19

TRAINING STRATEGY.....22
 Use of Local Resources.....22
 Training the Entire Staff.....23
 Development of Informal Training Systems.....23
 Other Training Resources.....24

CONTACTS.....25

LOAN TRANSACTION VOLUME.....26

PRINCIPAL DATA BASES.....27

SOCIETY BASIC DATA BASE FILE.....28

LOAN DATA BASE FILE.....34

RECOMMENDATIONS

The Need for Computerization

The Uganda Agricultural Finance Agency (UAFA) is designed to extend credit to farmers who are not served by current credit programs. By providing credit to the farmer through the well-established co-operative movement, UAFA will play a pivotal role in Uganda's development.

Three factors are seen as critical to the success of UAFA:

1. Provision of loans to farmers in a timely manner to ensure that funds and in-kind supplies are available when needed;
2. Timely payment to in-kind product suppliers to assure their full support and participation in the program; and
3. The availability of management information to permit UAFA to:
 - a. Evaluate loan applications for soundness;
 - b. Ensure timely repayment of loans; and
 - c. Provide accurate information to the agricultural input sector on expected demand for inputs to assure availability.

Information: The Key to UAFA Success

With the success of UAFA's program dependent upon the ready availability of information, it is recommended that UAFA's loan processing, management, payment and collection systems be automated.

Also, it is suggested that at least one computer be purchased immediately so that UAFA's staff can become familiar with computers before the loan program is formally launched and to be certain that necessary systems are in place when needed.

The role of computers in UAFA's program is not to replace people with machines, rather, they are seen as a vital tool extending UAFA's management capabilities to assure success of the loan program. The ability to process large amounts of information rapidly and keep it current will mean:

- ** Timely provision of loans to farmers;
- ** Greater control over loans to ensure their soundness and that of the loan program; and
- ** Control over reimbursements to in-kind supply vendors to ensure their satisfaction and full participation in the UAFA program.

Suggested Development Strategy: Equipment

An analysis of transactions associated with loan application processing, making loans, interest accounting, payments to suppliers and loan collections suggests that UAFA will have a large number of concerns to deal with as the program expands. This large volume implies the use of large computers but it is recommended that micro computers be used by UAFA for several key reasons:

- ** ***Cost***
Micro computers usually are less expensive than minis for the same computational power by a factor of 5 to 10.
- ** ***Environmental Concerns***
Mini computers are many times more environmentally sensitive than micro computers.
- ** ***Built-in Backup***
Ensuring system availability with a mini computer system means acquiring redundant capabilities. With micro computers, this redundancy is, essentially, built-in at no extra cost because it takes several micros to do the job.
- ** ***Phased Development***
Micro computers would permit a phased development of UAFA computer resources tied to development of the loan program. This would keep UAFA startup costs to a minimum while ensuring adequate capacity to process the expected workload.
- ** ***Availability of Local Support Resources***
Although Uganda is at an early stage of automation, micro computers are beginning to be used by several government and private organizations. Many local firms have been created to meet the support, training, service and programming needs of these users.

It is anticipated that mini and mainframe computers will be used in Uganda particularly by the banking community and related government agencies. However, most of the support for these machines will come from outside the country, from parent organizations or from teams providing in-house support for these special systems.

UAFA Computer Requirements

Should UAFA develop to such a degree that greater computational power is required, this can be achieved by networking existing micro computers at much less cost than normally is associated with upgrading most mini computer systems. Moreover, the next generation of micro computers based on the new Intel 80386 micro processor chip should equal, if not exceed, the computational power of today's mini computer. By starting with a PC/MS-DOS compatible micro computer, UAFA would be relatively secure in its ability to upgrade later to the more powerful Intel 80386-based systems which should become widely available toward the end of 1987 or early 1988.

Field Service Support

It is recommended that UAFA's computer procurement be done in groups of three machines for each location to assure availability of a working machine in the event that primary and backup systems are not working or are being repaired.

In terms of field service support for UAFA computers, it is believed that by stocking extra components, most service can be provided directly by UAFA personnel with backup support available in Kampala from one of several firms servicing micro computers.

Kampala's two micro computer dealers are, at this time, primarily sales organizations although they do provide some degree of service. If these organizations were full-service dealerships, purchase of their machines would be recommended but since they are not, UAFA should simply acquire the lowest cost IBM-compatible computer available and not be tied to a locally sold brand name machine. The price of micro computers in East Africa is approximately two to three times that in the U.S. Such a large price differential cannot be accounted for solely by the cost of shipment. Greater competition and lower support costs in the U.S. probably account for the difference. Given this price variation, it is suggested that UAFA's computers be obtained from a U.S. dealer who can test them and the recommended spare parts thoroughly before shipment to Uganda.

IBM Compatibility

IBM compatibility is important for several reasons. First, the vast majority of micro computers currently in use in Uganda are IBM compatible. Worldwide sales of IBM-compatible computers is estimated to be in the range of 8 to 10 million machines, making the cost of both software and add-on peripherals quite low. Although there are likely to be changes in the future, it is expected that these changes will maintain compatibility with the existing IBM-compatible base.

Another reason for going with an IBM-compatible machine is that it would ensure support for UAFA's system from both a local computer firm and through the sharing of ideas and resources with others owning similar equipment. This would provide not only direct benefits to UAFA but would also have the synergistic effect of building a stronger computer base in Uganda.

Software and Training

The key to successful automation is software and training. Without trained personnel and well-designed software, computers are just useless hunks of plastic, metal and silicon.

Computers have greatly extended our ability to manage information and are today far easier to use than they were just 3 or 4 years ago. This is not to say that all software is well-designed and easy to use. Today's software is primitive, often confusing and relatively difficult to learn. As the cost of hardware decreases and computers become more powerful, this may change, but for now, there is a premium on selecting the right software and training users to take maximum advantage of it.

The market position of software is not an indicator of its value. The best-sellers in most software categories are just that--best sellers. Typically, they gained this position by being first, though not necessarily best, in terms of capabilities or ease of use.

The cost of training can equal or exceed the cost of a computer system. This puts a premium on the selection of software that minimizes this cost. If there is a difference between Uganda and the U.S. in terms of computers it is that the wide availability of computers in the U.S. means that there is considerable informal support available to users which helps reduce training costs.

It is for this reason that training for UAFA personnel should be done primarily by local personnel as this will help develop local capabilities and be of long-run benefit to the organization.

Informal Training Resources

It is further suggested that all UAFA personnel, not just those whose primary duty is computer operation, be trained in their use. By increasing the base of those familiar with computers, UAFA will realize the maximum benefits of automation.

Thought also should be given to making UAFA computers available during lunch hours, evenings and weekends to give the entire staff an opportunity to practice and experiment with the

UAFA Computer Requirements

machines and increase their skills at no cost to UAFA.

It would be to UAFA's direct benefit to take a leading role in the formation of a local Micro Computer Users Group. This will not only provide UAFA personnel with the direct benefits of sharing ideas and resources with other users, but it will also generate increased computer awareness and benefit UAFA indirectly.

Computer training should extend beyond basic knowledge of the operating system and software applications. Most repairs and maintenance can probably be done by UAFA personnel using appropriate diagnostic software. By familiarizing staff members with computer hardware, there will be less down time. More importantly, users familiar with hardware are less likely to be intimidated by the computer and are more likely to use it fully than they would if they knew how to use only the software.

Finally, the key to productive computer use is the development of in-house expertise. Certain individuals should be designated "expert" in specific areas such as word processing, data base management, spreadsheets and the operating system in order to instruct others in formal training programs.

Training Support Materials

While direct training is essential, it tends to be one-shot because of the costs involved. Therefore, it is recommended that supplementary training materials be acquired to provide an on-going training resource. Most off-the-shelf programs come with computer-based tutorials which can be used over and over and are generally helpful. Their use should be encouraged.

Unfortunately, most computer software manuals are poorly designed and written and serve best as a reference source rather than a training guide. Additional training matter including books, computer-based materials and perhaps even video training tapes should be purchased.

Software Selection

Selecting the appropriate software for UAFA's operations will involve many compromises. Among the considerations for software selection are:

**** *Appropriateness***

The program must fit the job requirements. It would be inappropriate to select a program editor for wordprocessing. Even though it could be used for this purpose, it is better suited to developing software than to wordprocessing.

UAFA Computer Requirements

** *Ease of Use*

The selected software must be easy to use to minimize the cost of training while maximizing use.

** *Suitably Powerful*

Selected software should be powerful enough for the task at hand without being overkill. Generally speaking, the more powerful the software, the more complex it will be. Care must be taken to select software capable of doing the job.

** *Future Requirements*

The selected software must be capable of use in an expanded, multi-user network environment and of meeting the needs of UAFA when the organization has grown to its expected size. It would be very expensive to select software unsuitable for the future. Not only must the cost of replacing original software be considered but also that for converting files and retraining personnel to use the new program.

** *Cost*

Software can cost as much, if not more than hardware. Care must be taken to select software that provides good value. For example, Lotus 123 is the leading spreadsheet program for the IBM PC and its U.S. price is around \$350. VP Planner, a 123-look alike, is not only functionally equivalent to 123, but has extended features that make it more powerful and it costs between \$50 and \$60. Certainly not all low-cost software is good and sometimes getting what is needed can be very expensive.

Tentative Software Recommendations

Keeping in mind the often conflicting requirements outlined above, the following tentative recommendations are made.

** *Wordprocessing*

Word Perfect is suggested to fill UAFA wordprocessing needs. Word Perfect (\$250) is noted for the speed with which it can be learned and it is a powerful wordprocessing program capable of meeting UAFA's immediate and future needs.

** *Spreadsheets*

VP Planner (\$50-\$60) is the equivalent of the much higher priced Lotus 123 in all respects except price. The program goes beyond the capability of Lotus by permitting the development of multi-dimensional spreadsheets. Used in conjunction with Reflex, it is a powerful analytical tool.

** *Data Base Management Systems*

The choice of a DBMS for UAFA is extremely difficult. Given the long term requirements of UAFA, a powerful applications development environment is called for; the typical, simple

DBMS will not do.

- a. For simple data base tasks, Reflex is recommended as a low cost (\$50-\$60) DBMS which can serve as a powerful analytical tool when used in conjunction with VP Planner.
- b. For accounting, loan processing and management, Revelation (\$450) should be considered. This package has the required power and can handle UAFA's needs over the long term. On the negative side, Revelation is a very complex program.
- c. R:Base System V (\$350) provides a simpler programming environment than Revelation, but is not suitable in a multi-user environment which may well be necessary as UAFA's loan program expands.
- d. Informix (\$650) falls between Revelation and R:Base V in terms of complexity and multi-user capabilities, but for this important software need, a program that is neither fish nor fowl is not necessarily appropriate.

It is suggested that the final decision on a DBMS program be delayed pending a review of software now being carried out by the American Red Cross computer staff. Their findings should provide a good basis for selecting UAFA's program.

**** Diagnostic Software**

It is essential that IBM's Advanced Diagnostic be obtained. With this program, anyone able to handle a screwdriver can perform necessary maintenance on an IBM PC or compatible provided a stock of spare components is available. Using the program requires no special skills since it identifies the failing component which is then easily replaced.

**** Miscellaneous Supporting Software**

Several supporting programs are recommended to assist UAFA's establishment staff and provide on-going management tools.

- a. Easy Flow (\$125) was designed primarily as a program flow charting tool but serves equally well as a simple graphic project planning tool. In UAFA's development phase, this will be useful in analyzing the proposed accounting, loan management and processing systems.
- b. Bricklin's Demo (\$50-\$60) program has two principal uses: it permits non-programmers to design and review programs while providing them with a visual tool for communicating with those planning the loan processing and accounting systems. This can also be used for developing computer-based training programs and tutorials for the loan management and accounting systems.

UAFA Computer Requirements

- c. Due to the large number of forms being contemplated for UAFA, FormTool (\$95), a program for designing and printing forms could save considerable effort and permit rapid redesign of forms as needs are more clearly defined.
- d. PopUp DeskSet (\$125) has a memory resident utility providing a calculator, a financial calculator, notepad, calendar and appointment scheduler. As a memory resident program, it is instantly available, even while in the middle of another program, making it very useful as it permits work on the computer to be temporarily interrupted to make quick calculations, check a schedule or jot down important notes.

A Self-Sustaining Program

UAFA is envisioned as a self-sustaining program and its computer system should be seen in the same light. However, it is difficult, even with a computer, to estimate the direct benefits of automation to UAFA. Since the purpose of automation is to improve the timeliness of loan disbursements and payments rather than to substitute machines for people, the benefits of automation are indirect.

The benefits of the computer to UAFA come first in the form of better management of loan funds, maximizing their use and interest return to UAFA. The second major bonus of improved management information is that it should mean a much lower repayment default rate.

Looked at over a 5 year period, UAFA's computers will cost approximately \$40,000 a year for equipment, training and programming support. This amounts to slightly over one half percent of UAFA's projected loan volume in its fifth year of operation, or 2,500 Shs (at \$1=1400 Shs) per loan.

Although it can be reasonably argued that UAFA's computers will more than pay for themselves, consideration may be given to the assessment of a small loan origination or administration fee which would cover the cost of administering UAFA's loans, including the cost of computers.

REVIEW OF UAFA'S COMPUTER NEEDS

Computers will benefit UAFA in numerous ways, among them:

- ** The provision of timely loan management information to maintain UAFA's capital assets and aid in their growth;
- ** Enhancement and extension of the skills of UAFA's staff through greater availability of accurate and timely information.
- ** A more even distribution of UAFA's workload since data can be entered and tallied immediately upon receipt;
- ** Increased control over operational expenses to maximize the availability of funds for lending.
- ** Provision of accurate and timely data on loan performance, thus enhancing loan management capabilities and support for UAFA by both investors and its small farmer clients as well as the agricultural input sector.
- ** Easier consolidation and manipulation of data to provide greater insight into trends and problem areas.
- ** Greater accuracy of data through validation as it is entered on the computer and elimination of errors resulting from the multiple posting of data from one ledger, journal and book to another as required by manual systems.
- ** Ability to look at data as it is gathered to spot trends without having to wait until it is all available for tallying.
- ** Increasing the likelihood of planning and budgeting tasks being completed by making them easier to perform.
- ** Facilitating the development of training and procedural manuals.

There are, undoubtedly, other benefits of computerization and these will surface as UAFA's staff becomes more familiar with the use of computers.

Emphasis on Loan Management

UAFA faces an uphill struggle in that its loans are not loans in a traditional sense. Instead, they are lines of credit

UAFA Computer Requirements

involving multiple loan transactions with the associated requirements of risk analysis, interest calculation, accounting and coordination of in-kind inputs. If loans are not made on time, they are of no use to farmers. Similarly, if repayment is not tightly controlled, UAFA, in the light of inflation, stands to eat heavily into its capital resources.

The keys to UAFA's success lie in:

- ** The timely provision of loans;
- ** Rapid payment of in-kind suppliers;
- ** On time repayment of loans; and
- ** The analysis of large amounts of data enabling UAFA to manage its cash, fulfill its input coordination requirements, maintain up-to-date accounting records and properly analyze the risks involved in loans.

Analysis of UAFA's transaction load suggests that individual branches will be processing between 4 and 3600 transactions per day as the program grows from the pilot stage to full implementation. If UAFA assumes responsibility for providing loan accounting for primary societies, as may well be necessary to ensure that the program works effectively, it will be possible to handle this load only through the use of computers.

Although UAFA's computers will be used for accounting, planning, research and word processing, it is recommended that initially they be used principally for loan processing and management. With the exception of word processing, all these functions flow naturally from the collection and manipulation of loan transaction data and can be developed over a longer time frame once the loan management system is in place and functioning well.

Accounting

To date, much work has been done on UAFA's accounting requirements. This effort has focused on accounting as a manual, rather than an automated function. Automating UAFA's loan management will greatly simplify its accounting system by eliminating the need for the multiple ledgers, journals, books and statements now needed for the manual system.

Setting aside the need for internal operations accounting for the moment, all the data needed to accurately account for UAFA's loans will flow naturally from the data entered into the computer for each loan. This is the heart of UAFA's program and it must be given the highest priority in the allocation of computer time and programming effort.

UAFA Computer Requirements

The development of a system for operational accounting should come after UAFA's loan management program is fully developed and functioning. In the meantime, the internal system can be handled manually since conversion to the computer later should not be as difficult and the requirements for internal accounting are minimal compared with those of UAFA's loan management system.

As for the accounting associated with UAFA loans, the necessary ledgers, statements and other accounting reports will be available from the beginning in the form of reports derived from the basic UAFA loan data base.

Planning and Research

As with loan accounting, the data necessary for UAFA's planning and research efforts flows naturally from the collection and manipulation of the basic loan data. As important as planning and research are to the success of UAFA's program, it is again recommended that these functions not be given priority over the development and use of computers for the loan processing and management system.

This is not to say that these functions should not be automated. To some extent there will be no conflict in computer resource allocation since it is envisioned that the computers in UAFA's headquarters will be used primarily to provide planning, research, accounting and word processing while those in the branch offices will be devoted to loan management and processing functions. But programming and computer training resources are necessarily limited and should be focused on those latter functions to ensure the success of UAFA's program.

Computerization: An On-Going Process

Computer systems rarely spring forth full blown. Rather, they evolve over time as resources become available and the staff becomes familiar with the use of computers. This will be as true for UAFA as for any other organization.

The most important function for UAFA's computers will be loan processing and management. Accounting, planning and research systems will benefit from a well-developed loan management system and will have available to them accurate and timely data drawn from the former.

Initial emphasis must be placed on developing UAFA's loan processing and management system and then extending it to utilize the data developed by it for other activities. Since the functions of UAFA's head office and its branches will be divided, competition for computer time should be minimal.

UAFA Computer Requirements

-14-

By following a phased development plan, UAFA's computers will provide the maximum benefit to the organization while ensuring that scarce programming and training resources are allocated to the areas which will benefit UAFA most. Eventually, all facets of UAFA's operations will benefit from the computer.

COMPUTERIZATION PLAN

During the pilot stage of UAFA's phased development program, it is estimated that the transaction load will be as high as 400 per day. This is a greatly simplified calculation since it assumes that the load is to be spread evenly over time and between the branches. Eventually, the load could grow to as much as 3600 transactions per day and possibly even three times that number when all eligible primary societies are participating in the program.

As well as the functional divisions between operations at UAFA's head office and its field branches, there also will be a division in the use of UAFA's computers between loan processing and management in the field and planning, research and overall program direction at headquarters. This signifies a simultaneous development in the use of UAFA's computers in these areas.

With careful planning and program development, it is estimated that three micro computers in each branch should be sufficient to handle UAFA's initial work load. From the perspective of transactional workload, it may be possible to get by with only one computer per branch during the early stages of UAFA's development but this would leave the organization vulnerable to major work disruptions should that single machine fail with no backup available.

Although one computer can do the job initially, it is recommended that each branch begin operation with the three computers that ultimately will be needed. The reason is that this provides triple redundancy ensuring the availability of a working system at all times. Equally as important, extra machines will provide the resources needed to facilitate peak load processing and the availability of computers for training purposes in the early stages of the program.

Micro Computers

The high transactional volume of UAFA at full program implementation implies a need for considerable computer resources which might be taken to indicate the need for mini, rather than micro computers. It is recommended that UAFA not be tempted to buy mini computers but, instead, make use of micro computers, specifically, IBM-PC compatible micros.

A major consideration in this choice is that micro computers are much less environmentally sensitive than mini computers. Dust, heat and highly erratic power supply can present many challenges to UAFA's computers and may best be dealt

UAFA Computer Requirements

with by using micro computers. Mini computers tend to have higher support requirements than micro computers which also weighs against their use.

The number of micro computers being used in Uganda today is growing and it is expected that many more are going to be used in the near future. This means that there will be more resources available for their support than will ever be the case for larger systems.

There are several competent firms in Kampala which support micro computers. These firms provide service to organizations such as the Uganda Development Bank, the Ministry of Planning, the Swedish Cooperative Center's Primary Society Automation Project, the African Medical Research Foundation and several local banks and efforts are underway to develop micro computer systems for the Bank of Uganda and several other government agencies.

These developments foster not only the growth of formal, local support capabilities, but also point to a growing, informal support system as users and suppliers of equipment and services come together to share ideas and resources. It is highly recommended that UAFA take the lead in the development of a local micro computer users group to further encourage sharing and mutual support among both suppliers and users.

Mini and even mainframe computer systems are being developed in Uganda; both the Uganda Commercial Bank and the Treasury have made commitments to use ICL mainframe systems and Barclays Bank is about to implement a mini system. Other banks are likely to move in this direction, as well. The volume of transactions handled by a bank tends to be very high and many well-developed mini and mainframe systems exist to support banking functions. It is not that these activities cannot be handled by networking micro computers, but rather that micros are still relatively new and, therefore, unknown to these potential users. This has given larger systems the lead in developing banking software.

While UAFA will be a banking institution, its principal focus on extending credit to small farmers through Uganda's highly developed cooperative movement is sufficiently different from the day-to-day operations of a full service bank to mean that existing banking software systems are unlikely to be of benefit to it.

Finally, mini computers imply a centralized approach which is at odds with the structure of UAFA which is to concentrate the bulk of its loan management activities in a distributed approach in the branches. This also argues in favour of lower-cost micro computers.

UAFA Computer Requirements

Compatibility With Existing Resources

A major concern in selecting a computer system for UAFA is that compatibility with existing computer resources be maintained. Since micro IBM PC/MS-DOS compatible computers are all very similar at the hardware level, our concern lies primarily with the software.

The vast majority of Uganda's computers are IBM compatible micros and so there are more support resources available for these machines than for any other. Although there is likely to be mini and mainframe computer use, particularly in banking, these systems, will in all likelihood, have dedicated on-site support staff or the resources of ex-patriot computer staff at the head office to provide support. There seems little probability of the development of independent mini or mainframe computer support capabilities in Uganda in the near future.

Besides the availability of local support resources, there are additional benefits to using IBM PC compatible machines. In general, they are much less expensive for the same computational power than larger systems and, by purchasing this equipment, UAFA is assured not only of a lower capital outlay but also of knowing that whatever system is developed today will be transferable to newer and more powerful hardware in the future. This is particularly important in light of the anticipated workload which may well require more powerful computers.

While forecasts are always difficult, based on the new Intel 80386 micro processor, it seems safe to assume that micro computers with the power of today's mini computers will be developed over the next two years. With this chip being an extension of the Intel 8086-88 micro processor family, the heart of today's IBM compatible computers, and the large base of software now available for the IBM machines, there is little doubt that the next generation of computers will maintain compatibility with those available today.

A final and very important consideration of IBM compatibility as far as UAFA is concerned is the planned automation of district unions and primary societies now under development by the Swedish Cooperative Center. As this program progresses, there are bound to be many mutual benefits to both UAFA and the cooperative movement to keeping both systems operating on the same computers.

It may well be that the primary society automation project will enable primary societies to maintain more easily the books needed to facilitate both the accounting and management of UAFA loans. Similarly, there will be many opportunities for UAFA to share data for planning and research purposes with the cooperative automation centers.

UAFA Computer Requirements

It is strongly recommended that UAFA maintain close contact with the Swedish Cooperative Center automation project to take advantage of the work being done there and to ensure that information generated by both organizations be exchanged to facilitate the mutual transfer of planning data.

Strengthening Local Resources

As UAFA is supported by ACDI and USAID, it is tempting to suggest that further development take advantage of the ready availability of U.S.-based programming, training and other computer resources. It is, however, recommended that these support activities be provided by local computer resources.

For programming, training and, to some extent, equipment maintenance, a local firm, Rank Consult, is more than capable of providing the needed support. By using Rank or other local companies, UAFA funds will have the synergistic effect of further strengthening these local resources and providing long-term benefit to UAFA.

However, it is not recommended that computers be purchased locally as East African computer prices are about two to three times higher than they are in the U.S. UAFA should take advantage of its association with ACDI and USAID to obtain its computer equipment in the U.S. in order to conserve limited resources and make more funds available for the critical support of local programming and training capabilities.

Equipment Requirements

For UAFA's first year of operation, it is planned for 10,000 loans to be made with 360,000 loans being the goal by its fifth year. Because UAFA will be operating through primary societies, this will mean 200 UAFA loans per society in the first year growing to 2400 loans each by the fifth year.

Each loan will require several transactions. It is estimated that in addition to the initial loan application processing, each loan will require a minimum of 3 transactions for cash payments, another 3 to 6 for in-kind goods and services and 5 to 10 for repayments.

It may be necessary or, at least, desirable, and it certainly is recommended during the pilot stage of its development, that UAFA provide direct accounting services to primary societies to help them manage their loans. At the society level, each loan is estimated to involve an average of 20 transactions: 7 cash, 3 in-kind and an average of 10 repayment. This translates into some 200,000 transactions in the first year growing to 7,200,000 individual transactions by the fifth year.

UAFA Computer Requirements

It may be possible that the processing of loans at the primary society level can be provided by the primary society automation project in which case UAFA's burden is lessened considerably. If not, UAFA may well have to assume this load to maintain control over the loan system and relieve the primary societies of a major accounting burden.

It is recommended that 3 micro computers be obtained for each branch and 3 for headquarters operations. This provides automatic backup capability in the event of equipment failure as well as sufficient resources to accomplish the job, at least in the early stages of UAFA's program.

The cost of these computers amounts to a little under \$2 per loan (2500 Shs.) when averaged over the 5 year development period. With an average loan projected at 500,000 Shs., the cost of the computers in support of the UAFA program amounts to less than one half of one percent of the value of the average loan.

Consideration may be given to a special loan origination or administration fee to cover these costs and assure long-term availability of computers or they may simply be incorporated into the interest rate on the loans.

Should the program develop to the extent that more computers are required, it is recommended that existing and additional micro computers be tied together in a local area network or other multi-user micro-based system. This is one of the major benefits of using micro computers since UAFA's initial investment in both equipment and software can easily be upgraded as needed.

Equipment Specifications and Costs

** 8 MHz IBM compatible PC.....	\$1,200
** 30 MB Hard disk.....	700
** 450 watt uninterruptible power supply.....	700
** 300 cps 13" dot matrix printer.....	700
* 220-110 transformer.....	150
** System burn-in in the US before shipment.....	200
** Miscellaneous supplies (paper, floppy disks, etc).....	200
** Pro rata software cost.....	350
** Pro rata share of standby generator.....	800
** Shipping.....	500
PER MACHINE TOTAL.....	\$5,500
BRANCH TOTAL (3 machines).....	\$16,500
SPARE PARTS KIT.....	\$2,150
UAFA TOTAL (3 machines hqtrs, 24 machines branches).....	\$150,650

UAFA Computer Requirements

In the event of prolonged power outages, the small, standby generators will allow the head office and branches to run their computers for a few hours per day and avoid major disruptions in processing loan transactions.

Training, maintenance, and programming costs are not included in the above figures. Training, using local resources, should be minimal--a maximum of 10 percent of total hardware costs. The software was recommended above was selected to minimize training requirements.

Included in software costs is the IBM Advanced Diagnostic Kit which provides the ability to maintain machines using spare parts as well as shipment of defective components to the U.S. for repair. Local repair diagnosis assistance and training may be required on an as-needed basis. This cost is built into the training and support budget.

It is estimated that local resource custom programming of the two principal UAFA data bases resources will cost approximately \$10,000.

As stated previously, in order to maintain compatibility with existing local computers as well as those planned for use by the Swedish Co-Operative Center Primary Society Automation Project, it is recommended that IBM compatible PCs be used. Any of the following machines are acceptable with cost being the prime determinant of which is selected:

- ** Leading Edge PC
- ** Kaypro PC
- ** Epson PC
- ** IndTech PC
- ** Sperry PC

The Okidata 294E or equivalent is recommended as a high-speed (290cps), durable printer with near-letter-quality (dual 9-pin head technology) capability. It is assumed that each computer will have a printer, although it may be possible to get by with two printers at each location. It also may be desirable to have a letter quality printer at UAFA headquarters. Two printers per office are required to provide backup in case one machine fails.

A 450 watt Uninterruptible Power Supply is recommended to provide the ability to close down operations in an orderly fashion in the event of power failure and also to provide power conditioning.

A small 5Kv gas or diesel generator is recommended to provide power in the event of prolonged power outages. The generator should not be used to provide long-term power, but to

permit operation of the computers for a few hours a day during power outages.

Finally, it may be necessary in some branches to provide air conditioning to keep heat and dust-related problems to a minimum. This is not judged likely but should be considered when planning UAFA's equipment requirements.

TRAINING STRATEGY

Three elements are seen as critical in the development of UAFA's computer training strategy:

- ** Maximum use of local resources;
- ** Training of entire staff, not just those whose principal function is working with the computer; and
- ** Development of informal training programs.

Use of Local Resources

It is strongly recommended that local resources be used to provide computer training for UAFA. There are several firms capable of providing computer training. Using these firms will help develop them and be of long-term benefit to UAFA.

It is assumed that trained computer personnel are not available to UAFA. Consequently, it will be necessary for UAFA to select the best people possible based on its needs and train them in the use of computers.

In selecting software for UAFA, a major consideration was the ease of learning. Each major program (word processing, spreadsheets and data base management) comes with a series of tutorial lessons which, in most cases, should provide enough familiarity to enable those learning them to perform all the basic functions after a few hours of practice.

Formal training should be concentrated in two areas. First, the machine should be opened and basic components identified. This should help to demystify it. A short lesson on care and the basic operating system commands should then be given.

The second area should cover an introduction to the various programs with a focus on fundamentals; how to invoke a program, save a file, find help and similar, elementary steps. Users should then be able to work through the tutorials and begin gaining expertise in program operation.

The key to learning how to use a computer is to start with the basics so necessary work can be done. Users then can begin exploring additional features and expand their capabilities as they become more familiar with the machine and the programs.

The best strategy for implementing formal training is to hold a three-day working session with participants divided into small groups with a maximum of two students per computer.

UAFA Computer Requirements

Following that, several half day sessions should be scheduled over the next few weeks, with each focusing on a particular program.

Further, it would be good to have the training provided by the same firm involved in developing UAFA's loan management system. The programming team should be required to spend one half day per week in UAFA's offices reviewing their programming progress. During these visits, staff members will have an opportunity to raise questions on problems they may be having with the basic applications software.

Training The Entire Staff

It would be a mistake to limit computer training to the few staff members whose principal job functions involve the computer. The more people who know how to use the computer, the better.

Some staff members will be more knowledgeable in particular areas because their job functions cause them to use a specific software package extensively. These individuals will become UAFA's resident experts.

Other staff members should be encouraged to make use of the computers when they are available even if their principal job ordinarily does not involve computer use. In this way, hidden computer talent will surface to UAFA's benefit and there will be less dependence upon any single staff member.

Care, of course, must be taken to ensure that UAFA does not simply become a training ground for individuals who will leave the organization for other positions once they are trained at UAFA's expense. At the same time, providing an opportunity to expand one's skill in computers should be treated as a major benefit of UAFA employment.

Development of Informal Training Systems

Outside consultants, especially in the computer field, tend to be very expensive. This is true for both programmers and trainers. From the beginning, the emphasis of UAFA's training program must be on developing in-house experts who can teach other staff members.

A formal program of training by in-house experts will reduce training costs, enable much more training to be accomplished and will force the development of in-depth skills by those staff members tapped as "experts."

Less formally, UAFA should make its computers available to staff members for practice and experimentation during evening and

UAFA Computer Requirements

weekend hours so that those who show an interest are given every opportunity to develop their talent. Typically, when this type of program is established, the real in-house "experts" will always be available to help those who are just beginning to develop their skills. As they teach, they learn and most take pride in helping others and, as a result, it should not be necessary to provide a paid employee for these informal sessions.

As stated elsewhere, it is suggested that that UAFA take the lead in establishing a local micro computer users group to facilitate further development of computer capabilities and sharing of expertise and experience between local users. The group should associate itself with at least the Capital PC Users Group in Washington, D.C., the New York Amateur Computer Society in New York City and the Boston Computer Society in Massachusetts.

These major U.S.-based users groups have vast libraries of free software and very informative magazines and they provide group buying services which frequently result in major discounts on software. They also serve as resources in establishing other users groups, giving ideas on programs, structure and other aspects of the movement.

Other Training Resources

UAFA should invest in a basic collection of computer books (a complete list to be submitted later), a subscription to PC Magazine and computer-based training materials for the principal applications software packages (a list of recommended packages to be submitted later.) One or two computer video programs focusing on key applications packages, particularly the spreadsheet program, also should be considered (a list of potential video tapes to be submitted later.)

Some of this material may be purchased collectively by a users group to minimize costs to UAFA and to foster sharing amongst the members.

CONTACTS

I. Beeyendeza
Rank Consult
P.O. Box 8755
Kampala
231458/235655

Olle Otteby
Swedish Cooperative Center
c/o Busoga Growers Cooperative Union
Private Bag
Jinja
043 21456 (Union), 043 22102 (home office)

Peter Okonera
Director of Computer Operations
Uganda Development Bank
P.O. Box 7210
Kampala
230740/6 Ext. 23

Katja Janovsky
African Medical Research Foundation
Entebbe
20124

Micro Technology Center (Programming)
Baumann House
Kampala
235433

Organizations Using IBM Compatible Computers

Swedish Cooperative Center (Wang PCs)
(District Union & Primary Society Automation Project)

African Medical Research Foundation (Olivetti PCs)
(Bookkeeping and research)

Uganda Development Bank (IBM PCs & ATs)
(Loan management data base)

Manpower Project (Compaqs & IBM PCs)
(Research)

Ministry of Planning (IBM PCs)

Ministry of Housing (IBM PCs)

UAFA LOAN TRANSACTION VOLUME

<u>YEAR</u>	<u>BRANCHES</u>	<u>SOCIETIES</u>	<u>UAFA LOANS</u>	<u>SOCIETY LOANS</u>	<u>UAFA TRANS</u>
1st	2	100	200	10000	2000
2nd	5	350	700	70000	7000
3rd	8	750	1500	225000	15000
4th	8	1050	2100	315000	21000
5th	8	1200	2400	360000	24000

<u>YEAR</u>	<u>SOCIETY TRANS</u>	<u>UAFA TRANS PER BRANCH</u>	<u>SOC TRANS PER BRANCH</u>	<u>UAFA TRANS PER DAY</u>	<u>SOC TRANS PER DAY</u>
1st	200000	1000	100000	4.0	400
2nd	1400000	1400	280000	5.6	1120
3rd	4500000	1875	562500	7.5	2250
4th	6300000	2625	787500	10.5	3150
5th	7200000	3000	900000	12.0	3600

Notes:

1. It is assumed there will be two loan cycles per year which correspond to the two major crop seasons.
2. The number of loans per society begins at 50 in the first year, increases to 100 in the 2nd and reaches 150 in subsequent years.
3. It is estimated there will be a minimum of 10 transactions per UAFA loan and 20 transactions per society loan.
4. The number of transactions per branch is obtained by dividing the total by the number of branches.
5. The number of transactions per day is obtained by dividing the branch total by 250 working days.

Principal Data Bases

The two principal UAFA data bases are outlined more to show what data will be available and how it may be used than as a definitive statement on the structure of the files. In reviewing these two data bases, the emphasis should be on what elements are missing and on ways data can be used to provide better management of UAFA's loan program.

Society Basic Data Base

This file, drawn primarily from the primary society loan program application form, provides the basic profile of a society. In addition to providing mundane information such as the society's name and address, this file will provide a profile of each society from the perspective of credit risk.

Over time, it should be possible to develop a system for using the information in this file to predict a society's credit behavior.

Loan Data Base

This file is the heart of UAFA's day-to-day operations as well as the key to the program's success. Details on all active loans are stored in this file and from it comes the necessary data to actively manage UAFA's loans and ensure their security.

SOCIETY BASIC DATA BASE FILE

The Society Data Base (SDB) file is the primary data file for societies participating in the UAFA loan program. It contains basic information on the society, its address, size, agricultural activities, crops, finances and training. From this data and on-going loan experience, it should be possible to develop a credit rating system.

The information below is drawn from many forms, but should come primarily from the revised CCS1. It is not meant to guide the creation of the necessary UAFA forms but should, rather, flow from the forms themselves. The listing shown here should not be considered complete, but it is suggestive of the information most likely to be readily available and relevant to the credit risk a society may present.

There are any number of ways which the computer can be used to turn this data into reliable management and planning information. A few suggestions are given below.

Ranking and Comparing

It may be useful to have the computer compute average values for all societies on some of the data such as the liquidity ratios, etc. and display these averages and a society's standard deviation from the average along with the actual data for the that society.

Periodic reports should be developed to derive profiles of societies according to their actual credit performance. In this way, it will be possible to analyze the data to focus in on those factors most often associated with credit risk.

Credit Worthiness

The principal use of this data should be as a predictor of credit behavior. This should evolve over time as actual credit experience is merged with estimates on which information can provide the best prediction of credit success/failure.

With some thought, it should be possible to design a system to rate a society's credit worthiness. It is necessary to determine the degree of importance of each item listed below and let the computer add these to provide an overall credit worthiness score.

Thought should be given to other ways ways in which the data can be extracted, summed, averaged, cross-tabulated or otherwise manipulated by the computer to provide useful planning and loan management information.

Basic Society Data

1. Society Identification Code
 - a. 1-digit branch code
 - b. 2-digit district union code
 - c. 4-digit primary society registration code
2. Name of Primary Society
 - a. 30-digit primary society name
3. Primary Society Postal Address
 - a. 2 30-digit lines for society address
4. Date Society Registered
 - a. 2-digit Month
 - b. 4-digit Year
5. Fully paid membership last and current year.
 - a. 2 4-digit numbers of fully paid (active?) members for the preceeding and the current year.
6. Society Chairman's Name and Years in Office
 - a. 15-digit first name
 - b. 15-digit last name
 - c. 2-digit years in office
7. Society Loan Committee Chairman's Name and Years in office.
 - a. 15-digit first name
 - b. 15-digit last name
 - c. 2-digit years in office
8. Society Secretary/Manager's Name and Years in office
 - a. 15-digit first name
 - b. 15-digit last name
 - c. 2-digit years in office
9. Society Secretary/Manager Background

___ Education (Highest level)

___/___/___ Cooperative Training (Course)

___/___/___ Date of UAFA Secretary/Manager Training
10. *What other info is needed about Sec/Manager?*
11. *What other info is needed about training?*
12. *Is there other information about society leadership which is needed for planning purposes, or to establish creditworthiness?*

Society Agricultural Activities

13. Principal crops handled by society last two years and projected for this year.

Crop _____	Weight	Value
2 years ago	_____	_____
1 year ago	_____	_____
Estimated this year	_____	_____

Crop _____	Weight	Value
2 years ago	_____	_____
1 year ago	_____	_____
Estimated this year	_____	_____

Crop _____	Weight	Value
2 years ago	_____	_____
1 year ago	_____	_____
Estimated this year	_____	_____

(What units are crops measured in?)

14. Does society maintain a store(s)?
- a. 2-digit number of stores
 - b. Total store capacity WHAT UNIT OF MEASURE??

15. Does society maintain a farm supply shop?

_____ Total Sales Preceeding year

_____ Total Sales Projected this year

16. Principal items sold in farm supply shop.

Item	Value Preceeding Yr	Projected This Yr
1. _____	_____ Shs	_____ Shs
2. _____	_____ Shs	_____ Shs
3. _____	_____ Shs	_____ Shs

- a. 15-digit item description
- b. 8-digit value in shillings preceeding year
- c. 8-digit value in shillings estimated this year

UAFA Computer Requirements

17. Does society own transportation?

__ Number of lorries __ Number of other types of vehicle

18. Does society maintain its own farmer loan program?

Preceeding Year Proposed This Year

Value Number Value Number

_____ _____ _____ _____

- a. 8-digit value of loans made in shillings
- b. 4-digit number of loans

Is there other info about non-marketing society activities which may be important predictors of credit risk?

Financial Status

19. Previous UAFA loans (This field is repeated for all previous UAFA loans, with the most recent appearing first. Information is automtically derived from the Loan Data Base (LDB).

Date	Amount	Status of Delinquent Amt
_____	_____	_____
_____	_____ Shs _____	_____

- a. 2-digit Month, 4-digit year of loan
- b. 8-digit loan amount
- c. Loan Status Code and amount (8-digits) of delayed payment or currently outstanding
 - 1. R-repaid in full, on time
 - 2. L-Late, but repaid in full
 - 3. L3-Late, 30 days
 - 4. L6-Late, 60 days
 - 5. L9-Late, 90 days
 - 6. Outstanding

20. Bank account details.

Bank	Branch	Acct #	Type	Balance	Date
_____	_____	_____	_____	_____	____/____/____
_____	_____	_____	_____	_____	____/____/____

- a. 15-digit name of bank
- b. 15-digit bank branch name
- c. 10-digit account number
- d. 1-digit account type
 - 1. C-cheque
 - 2. S-savings
 - 3. O-other

21. Financial Data (Information here is taken from annual audit)

Date of latest annual audit ___/___/___

Current Assets	_____ Shs	Current Liabilities	_____ Shs
Investment/Loans	_____ Shs	Loans	_____ Shs
Fixed Assets	_____ Shs	Long Term Liabilities	_____ Shs
TOTAL Assets	_____ Shs	TOTAL Liabilities	_____ Shs
		Net Worth	_____ Shs

Income/Expense

	Current Yr	Previous Yr
Total Income	_____	_____
Surplus Before Tax	_____	_____
Total Expense	_____	_____
Surplus less Expense	_____	_____
Margin Before Tax	____.____	____.____
Share Capital	_____	_____

Are there particular expense categories or a better breakdown of the balance sheet that will help predict credit risk?

23. RATIOS (Derived from above data by computer)

	Current Year	Previous Year
Total Assets/Total Liabilities	—.—	—.—
Current Assets/Current Liabilities	—.—	—.—
Net Worth/Total Liabilities	—.—	—.—
Net Worth/Current Liabilities	—.—	—.—
Cash/Current Liabilities	—.—	—.—
Assets/Member	_____	_____
Liabilities/Member	_____	_____
Current Assets/Member	_____	_____
Current Liabilities/Member	_____	_____
Net Worth/Member	_____	_____
Share Capital/Member	_____	_____
Total Income/Member	_____	_____
Surplus/Member	_____	_____
Surplus less Expense/Member	_____	_____
Cash in Bank/Member	_____	_____

24. Other loans

Source	Amount	Date Due
_____	_____	___/___/___
_____	_____	___/___/___
_____	_____	___/___/___

- a. 15-digit lender name
- b. 8-digit amount of loan
- c. 2-digit month, 2-digit day, 4-digit year

25. Are there financial relationships between the society and union which we need to know about in terms of credit worthiness?

26. Is there other financial data or information relevant to credit worthiness which has been overlooked here?

LOAN DATA BASE

The Loan Data Base (LDB) is the heart of the UAFA loan management system. It not only gives details on every loan, but it also provides the basis for UAFA fiscal control, planning and accounting.

From the LDB will come the necessary information to generate cheques for cash payments and Purchase Supply Vouchers for the provision of in-kind supplies to the UAFA loan program.

Planning and management reports can be generated for input coordination and loan supervision. For example, it will be possible to generate a weekly report for input coordination showing total requirements by product and supplier as well as specific destinations.

Similarly, weekly reports of planned society cash expenditures and input supply deliveries can be produced and used by the credit supervisor to audit the use of loan funds.

Weekly delinquency reports showing delinquencies by society for credit supervisor collection activities also will be generated.

An extremely important use of the program will be the calculation of UAFA's cash flow requirements. It will be possible to forecast UAFA's day-to-day fund requirements based on projected loan disbursement activities. Of course, the accuracy of these projections will depend upon the extent to which actual disbursements coincide with those projected in the LDB.

Over time, it should be possible to improve the accuracy of the cash flow requirements and allow UAFA to keep its funds working to the maximum extent possible.

Other planning and management reports can be generated to show fund usage and collection trends.

Undoubtedly, other uses will be found for the LBD data. Careful thought needs to be given to the data requirements of UAFA's program and how it can be used to assure sound loan management, better assistance to farmers so they can increase crop output and timely and accurate loan disbursements and collections.

Maintaining Audit Trails

To provide an audit capability, cheque disbursement and payment receipts will be kept in separate data bases and

UAFA Computer Requirements

information from them will be posted automatically to the LDB. A separate daily receipt data base will be used to prepare bank deposits and provide a control total against which payment records can be checked.

Similarly, a separate cheque writing program and data base will provide a control figure against which disbursement activities can be checked.

Generally, the principal accounting data required by UAFA will come from the LDB and associated payment receipt and cheque disbursement programs.

Security

To ensure security, access to these programs will be by operator identification and password. Certain activities, such as cheque writing, will require password clearance by both the operator and the branch accountant.

All data relating to UAFA finances will be stored in an encrypted format to prevent unauthorized access or modification of loan data. The encryption public key will have to be changed periodically to maintain security as well as any time an employee who knows the key leaves UAFA.

Special care will have to be given to maintaining daily backups of all data as well as generating printouts of key data which can be used to maintain the system in the event of complete computer failure (due to lack of electricity, for example).

Basic Loan Data

1. Society Name
 - a. 30-digit primary society name
2. Loan Identification Number
 - a. 7-digit society identification code
 - b. 3-digit sequential loan number
3. Society Credit Rating
 - a. 3-digit credit rating drawn from the society basic data base.
4. Amount of loan
 - a. 8-digit total loan amount
5. Accumulated total of loans to the society and accumulated days of loan delinquency.
 - a. 9-digit accumulated total of all loans made to society
 - b. 4-digit accumulated days of loan delinquencies
6. Interest rate for loan
 - a. 2-digit loan interest rate
7. Period of loan
 - a. 8-digit loan beginning date
 - b. 8-digit loan due date
8. Amount of accrued interest
 - a. Calculated initially from scheduled disbursements of cash and in-kind Purchase Supply Vouchers to the due date of the loan.
 - b. Later calculated from the dates of actual disbursement of from the actual dates of delivery of items paid for with Purchase Supply Vouchers and the date of loan repayment.

Loan Payment Record

9. Loan due date(s) and payment record. (There will be one line for each payment and the balance will be brought forward to the next line. Payments will be against interest first.

Due Date	Principal Due	Accrued Interest	Total Due	Payment Date	Amount Received	Amount Due
___/___/___	_____	_____	_____	___/___/___	_____	_____
___/___/___	_____	_____	_____	___/___/___	_____	_____
___/___/___	_____	_____	_____	___/___/___	_____	_____
___/___/___	_____	_____	_____	___/___/___	_____	_____
___/___/___	_____	_____	_____	___/___/___	_____	_____

Loan Purpose

10. Schedule, purpose, amount, rate, total requirement. Each scheduled item is presented as planned along with actual delivery as determined by Purchase Supply Vouchers and Credit Supervisor Field Reports on cash expenditures. Each pair is repeated as often as necessary to accomodate the actual requirements of the loan.

Cash

Labor

	Date	Item	Units	Rate	Total
Plan	___/___/___	_____	___ days	___ Shs/day	_____
Actual	___/___/___	_____	___ days	___ Shs/day	_____

Tractor/Oxen Hire

	Date	Item	Units	Rate	Total
Plan	___/___/___	_____	___ days	___ Shs/days	_____
Actual	___/___/___	_____	___ days	___ Shs/days	_____

In-Kind Inputs

Fertilizer

	Date	Item	Units	Rate	Total
Plan	___/___/___	_____	___ cwt	___ Shs/cwt	_____
Actual	___/___/___	_____	___ cwt	___ Shs/cwt	_____
Supplier: _____					

Other Chemicals (Insecticide, Herbicide, Animal Drugs & Dips)

	Date	Item	Units	Rate	Total
Plan	___/___/___	_____	___	___ Shs/___	_____
Actual	___/___/___	_____	___	___ Shs/___	_____
Supplier: _____					

Farm Implements

	Date	Item	Units	Rate	Total
Plan	___/___/___	_____	___ ea.	___ Shs/ea.	_____
Actual	___/___/___	_____	___ ea.	___ Shs/ea.	_____
Supplier:	_____				

TOTAL LOAN	_____
ACUMULATED INTERST	_____
TOTAL (PRINCIPAL & INTERST	_____

Does UAFA want to know about the supplier? Perhaps it should since they are going to be presenting vouchers for payment. At the same time, UAFA will need to guard against favoring suppliers.

The in-kind loan program is going to be difficult, much more difficult than simply giving the societies a cheque and letting them coordinate supply. It not only adds to UAFA's overhead, but also makes the auditing of the program difficult. Therefore, since there is a committment to this approach, UAFA should keep quite close tabs on the suppliers.

11. Comments, conditions, reminders and notes.

___/___/___ _____

This field may be used to set up automatic reminders as well as to provide comments on problems, inspections, special loan terms and similar loan related information. This will be particularly useful in noting committments made by societies delinquent on their promise to make payment by a particular date. Each day, a list of all comments, by society, for that date can be printed out as a reminder that something must be done.