PD-AAT-062

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

1. TRANSACTION CODE: A (A = Add, C = Change, D = Delete)
Amendment Number: 1
DOCUMENT CODE: 3

2. COUNTRY/ENTITY: Zaire

3. PROJECT NUMBER: 660-059 ISN 44296

4. BUREAU/OFFICE: Africa 06

5. PROJECT TITLE (maximum 40 characters): North Shaba Rural Development

6. PROJECT ASSISTANCE COMPLETION DATE (PACD): MM 09 DD 30 YY 83

7. ESTIMATED DATE OF OBLIGATION (Under 'B.' below, enter 1, 2, 3, or 4)
A. Initial FY 76 B. Quarter C. Final FY 83

8. COSTS ($000 OR EQUIVALENT $1 = see note)

A. FUNDING SOURCE	FIRST FY 77 B. FX	C. L/C	D. Total	LIFE OF PROJECT E. FX	F. L/C	G. Total
AID Appropriated Total						
(Grant)	(1,319)	(-0-)	(1,319)	(9,925)	( )	(9,925)
(Loan)	(2,200)	(-0-)	(2,200)	(3,500)	(-0-)	(3,500)
Other U.S. 1. CPF		-0-			3,559	3,559
Other U.S. 2.						
Host Country		1,765	1,765		6,085	6,085
Other Donor(s)						
TOTALS	3,519	1,765	5,284	13,425	9,644	23,069

9. SCHEDULE OF AID FUNDING ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE 1. Grant	2. Loan	D. OBLIGATIONS TO DATE 1. Grant	2. Loan	E. AMOUNT APPROVED THIS ACTION 1. Grant	2. Loan	F. LIFE OF PROJECT 1. Grant	2. Loan
(1) FN	143B	072	072	4,304	3,500				
(2)									
(3)									
(4)									
TOTALS									

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)
061 080 031 019 140 011

11. SECONDARY PURPOSE CODE

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)

A. Code	BS						
B. Amount	23,077						

13. PROJECT PURPOSE (maximum 480 characters)

To increase the net income of small farmers in the project area by 100% by the end of the project as a result of raising corn production from 27000 MT (1978) to 60000 MT; and to develop a rural development process in the form of a model that is replicable in other parts of Zaire.

14. SCHEDULED EVALUATIONS
Interim MM 06 YY 79 MM 06 YY 81 Final MM 09 YY 83

15. SOURCE/ORIGIN OF GOODS AND SERVICES
☐ 000 ☐ 941 ☐ Local ☒ Other (Specify) 935

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a ____ page PP Amendment.)
To extend the LOP by an additional 12 months and increase LOPC by an additional $3.6 million. This revision also reduces some of the quantifiable objectives and addresses a greater emphasis required in certain aspects of project implementation - specifically in Research/Extension and Farmer Group Development.

17. APPROVED BY
Signature
Title
Date Signed MM DD YY

18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION
MM DD YY

AID 1330-4 (8-79)

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I. Summary and Recommendations

A. Recommendations

The following actions are recommended:

1. Increase the original life-of-project funding authorization by $3,634,000 from $9,791,000 to $13,425,000;

2. Authorize a grant in the amount of $2,700,000 for FY 1980; and

3. Extend the Project Assistance Completion Date (PACD) of the Grant from September 30, 1982 to September 30, 1983.

B. Project Summary

Although the North Shaba Project was begun in 1977, only in 1980 were all the various essential elements assembled to create a critical mass and enable the project to demonstrate its potential. Delays and setbacks in the first three years were due to the inadequate supply of certain resources (e.g., cement, fuel oil, local currency); a major flood; slow delivery of equipment from the U.S.; difficulty in recruiting American contract personnel; overambitious objectives in some subsystems; design mistakes on the U.S. side; and policy mistakes and failures on the Government of Zaire (GOZ) side. The GOZ, particularly the new Regional Commissioner and the new Minister of Agriculture began to take an especially keen interest in the project in early 1980, seeing it was a likely model for integrated rural development with modest means, in the Shaba Region and perhaps throughout the country. As a result of their interventions and repeated U.S. efforts, supplies of fuel, oil and cement have been received in adequate quantities and there has been a major input of local currency from the GOZ budget and counterpart funds. Inputs from the U.S. side during the past year also have been arriving in a timely manner.

A mid-course evaluation was designed into the project as a means to take a look at the project's progress and provide guidance for the continued implementation and possible redesign where necessary. This evaluation was conducted in June and July 1979.

In-depth reviews of the evalution were held by AID/W including a formal Project Review attended by the DAA/AFR and the AA/AFR. The contractor, Development Alternatives Incorporation (DAI), also conducted a major review of progress and problems to date. This conjecture of events led to the revised project proposals discussed herein.

The major project successes achieved to date are as follows:

-- The manufacture of hand tools locally at costs well below those made elsewhere and in adequate quantities; the effective training of local blacksmiths; the probability of the local tool-making industry becoming self-sufficient, expanding and serving as a starter for similar projects sponsored by the GOZ.

-- The construction and repair of roads and bridges at low cost and good quality with participation of villagers in construction and maintenance.

-- The organization of Farmers Councils and their ability to overcome sociological barriers and serve as an effective bridge between technicians (project and GOZ) and farmers in adoption of new techniques, seeds, etc.

-- The desire of villagers to see the project continued and expanded, and their readiness and eagerness to participate in self-help activities.

The major weaknesses that have become apparent are as follows:

-- An inadequate developed research program developed particularly concerning the use of fertilizer and farming systems; the inadequacy of the existing technical package; and the weak relationship between research and extension.

-- The credit and marketing inadequacies stemming primarily from failures in the GOZ programs (demise of ONACER) which had been factored in as integral parts of a program for credit and marketing.

-- The project monitoring and evaluation failure due to inadequacies in both the availability and qualification of American and Zairois personnel, and an overly-ambitious program for data collection and analysis.

The main conclusions are that the project potentially is at least as valuable as originally envisaged and could have a far-reaching impact on GOZ agricultural policy if it succeeds (e.g., emphasis on non-highly mechanized approach); that the degree of success already achieved, plus the recent improvements in external circumstances affecting the project, warrant continuation; and that continuation will require extending the originally-planned duration and scope of the project.

The major recommendations, stemming from the recent evaluation by USAID and DAI, and the previous DIMPEX/USAID evaluation, are addressed in this revision. These include:

a. The early introduction of fertilizer and a general strengthening of the research/extension subsystem.

b. Twelve months extension of the infrastructure subsystem.

c. Reorientation of farmer group activities to include some emphasis on social services but basically geared towards economic viaiblity.

d. Re-emphasis of the need for intermediate technology to work towards a self-financing operation.

e. The need to revitalize the functions and activities of the communications subsystem.

f. Requirements for extending some technical personnel and adding certain new positions.

g. Consideration of GOZ financing constraints and how their impact on project activities could be cushioned, possibly through interjections of counterpart funds at crucial points.

h. The possibility of institutionalizing the various subsystems to ensure their continued functioning on behalf of the population once AID and GOZ project financing have terminated.

i. The question of GOZ pricing policies for agricultural projects, particularly maize.

j. The reorganization of the communications subsystem as a cell within the Project Management Unit (PMU) to lend more stature to its role and facilitate the rejuvenation of its activities.

The specific recommendations and issues contained in the Mission PES and the DIMPEX Report are addressed in Annex 1.

The project will gradually expand its activities to include the following:

-- Extension work and seed distribution in the west bank areas of Kongolo zone.

-- Closer coordination with other organizations in the project area such as the cotton industry with regard to road and bridge work.

-- Support of Peace Corps activities in the area of public sanitation and preventative health care. The project will consider assuming the role of coordination of AID financed public health activities in the project area. This stems from the Mission's desire to further the activities already begun in conjunction with the Peace Corps. With the project as an administrative umbrella, there is some assurance of continued success.

-- Establishing a closer relationship with the Zaire INERA Support Project (660-0064) to take advantage of the expertise in the program at Bukavu.

-- Considering the possibility of establishing a relationship with certain PVOs so as to link activities.

-- Continuing the relationship already established with the ERTS Zaire Project (660-0070) so as to benefit from the mapping and interpretation work which it can provide.

-- Renewing efforts to determine ways in which project activities can be more rapidly institutionalized to ensure their continuation as external financing diminishes.

In addition to the foregoing, the question of overstated PP objectives has been addressed in light of experience and data collection to date. Projected increases of 300 percent for maize production and marketings have been found unrealistic in terms of the assumptions upon which projections were based and the environment in which increases were sought.

There also is the issue of foreign currency financing, which has been revised upwards by about 40 percent, including an additional year of AID dollar assistance. This increase takes account of a higher actual inflation rate than originally estimated, increased costs due to delays in project implementation, additional advisory services, and a desire to turn over infrastructure to Office des Routes with equipment in good condition and an adequate supply of spare parts for 6-12 months' operation.

The goal to which this project contributes remains the achievement of national self-sufficiency in maize. The specific purpose of the project is to increase the net income of small famrers in the project area by 100 percent by the end of the project as a result of raising corn production from 27,000 MT (1978) to 60,000 MT; and to develop a rual development process in the form of a model that is replicable in other parts of Zaire.

C. Summary of Subsystem Activities

Project North Shaba activities were initiated in August 1977 with the arrival of the first U.S. and Zairian technicians in Shaba. This was six months later than originally proposed. It wasn't until January 1978 when the combined team could actually move to the project site on a permanent basis, due to delays in getting housing rehabilitated. Road and bridge technicians were on site in July 1978 as well as the agronomist. This latter technician was a critical component of the project and should have been one of the first on site.

The project has made substantial progress in developing some of the various subsystems. A foundation has been laid from which project personnel are confident that certain objectives can be met, especially in Infrastructure and Intermediate Technology. Farmer Group Development, in the sense of achieving some economic viability among groups, will take longer than anticipated. Within the original timeframe, a reduced number of farmer groups or farm centers will reach the pre-cooperative stage. Based on the beginnings that have been made, one can envision a solid foundation being laid upon which additional groups can build to achieve economic viability and social benefits beyond the project life.

Research/Extension and Communications are two subsystems which have not progressed satisfactorily toward achieving project objectives. Certain basic data and studies should have been available earlier in the implementation phase. These would have included soils analysis, insect and disease studies, survey of existing agronomic practicies, and baseline surveys on income and marketing.

One of the first Zairian technicians on site was the Project Director, who was a trained agronomist from the National Maize Program (PNM). Although he assisted the Research/Extension subsystem in developing a trial and demonstration program in 1977, it was basically an extension of PNM methods. This approach precluded an orientation towards farming systems research and prevalied through the 1978-79 campaigns. The inability of the Zairian and U.S.

agronomists to come to terms on the research program has resulted in a significant data gap and virtually without an adequate technological package. This situation is more fully addressed in the text of the revision.

Data from production trials and demonstrations are proving inadequate due, in part, to the initial acceptance of only National Maize Program methods. These do not adequately test the numerous variations of soil, seed, and production practices existing in the project area. The scarcity of data makes it difficult, for example, to determine the economics of introducing fertilizer to area farmers. Discussions re forest versus savanna cultivation are also hampered by lack of adequate data and information.

Despite these shortcomings, some progress has been made in demonstrating modern techniques and improved seed; data are available from a number of trials and demonstrations; and a basic link has been made with numerous farmers in extending research and demonstration results.

The Farmer Group Development subsystem initiated the formation of Farm Cetners beginning in mid-1978. Problems encountered in organizational efforts were studied and discussed, leading to more successful efforts in 1979. By then, 37 centers had been organized. The more difficult task involved the organization of Farmer Councils. Through 1979 only 11 of these were active. While each of the 37 Farm Centers are served by an extensionist, animation type activities are being pursued in only the 11 Centers with Councils.

Project efforts in the Marketing/Credit subsystem have been limited, though vital to area merchants. The project has been played an intermediary role by serving as a conduit for commodities such as sacks and fuel. The project has attempted to play a tension easing role between merchants and millers. The Marketing and Credit System was originally built around a collaborative relationship with ONACER. Since the elimination of this office, the project has played a minimal but important role in the North Shaba marketing system. This role will continue to be minor, given the project's limited resources, until the Marketing Loan (025) programmed for the project area becomes a reality. Current project interventions include provision of certain materials that tend to be in short supply. These include sacks and fuel, which are obtained by the project and then sold to local merchants. The project also has rented two trucks to local small merchants to assist them in participating in the 1979 marketing campaign. These kinds of interventions will continue as long as the need exists. PNS personnel also will continue to monitor and report on the movement of agricultural products within the project area and exports to other destinations in Zaire. Activities in this subsystem were curtailed due to inadequate time available from the U.S. Chief of Party to get involved as originally planned. This year there is a new U.S. technician who will be working half-time with the subsystem. This involvement will be increased to full-time when the new Agricultural Marketing Loan (025) comes on stream. This loan will provide trucks and parts on credit to local merchants and possibly some farmer groups.

The Intermediate Technology subsystem has had the earliest and most sustained record of activity and success. Working out of former railroad and shipyard workshops, with the assistance and guidance of a very qualified, young

Peace Corps Volunteer, this subsystem has produced some 15-20,000 hand tools and well over a hundred small hand-operated agricultural processing machines. Quality control has been a problem with some machines, but the subsystems follow-up program is making inroads to improve these machines. A training program for village blacksmiths has provided instruction in new techniques and a set of new tools to over 50 individuals. They also receive metal on credit from the subsystem. Continuous follow-up will be necessary to monitor progress, to determine the adequacy of the training program, and to assist in maintaining metal supplies either through sales from IT or locating alternate sources.

The IT subsystem has been working towards achieving a self-financing operation. At present, all costs expect the total cost of steel are being covered in the price of tools. IT personnel hope that within a year, total costs of production will be covered by the price of tools and machines. The objective is to eventually turn the operation over to the private or service oriented sector as a profit-making venture. The modalities of this are still being studied.

The Infrastructure subsystem, was delayed in starting its activities due to the late arrival of equipment and then the 1979 flood. Local currency budgetary constraints in late 1979 early 1980 forced excessive layoffs of workers resulting in reduced activity on road, bridge, and building work. Progress had been made in developing a core of Zairian technicians in these activities. Thus, in 1980, when material, equipment, and funds were in adequate supply, work in this subsystem began to progress at a very satisfactory pace. Difficulties in implementing the road and bridge work included a major flood in 1979, delays in receiving equipment from the U.S., and unavailability of materials from local sources. Through the fall of 1979, about 90 kilometers of road were improved and 1.5 bridges constructed. Since then, an additional 70 kilometers of road have been improved and 2.5 bridges completed. The current schedule of completion indicates that infrastructure objectives will be met by September 1982 rather than April 1981 as originally planned.[1]

Mistakes have been made in terms of relationships and attitudes towards villagers, negligence in cutting down trees and disrupting fields. Project personnel are generally sensitive to these problems and steps are constantly taken to redress these actions.

The Project Monitoring and Evaluation subsystem (generally referred to as the Communications sybsystem) has not fulfilled its mandate as originally outlined. There has been a Zairian technician directing the subsystem since September 1977. However, although it was envisioned that the U.S. Chief of Party would provide technical backstopping, this has not been the case due to the excessive time and effort required in administrative and management within the Project Management Unit. Occassional TDY assistance also proved inadequate

[1]Except that the total number of bridges to be completed will be reduced from 72 to 55.

in keeping this subsystem on track and providing the necessary analytical backstopping to produce useful reporting. Currently, there is a new U.S. technican whowill be working part-time with the subsystem (his time is being shared with the Marketing/Credit subsystem). It is hoped that his efforts, combined with a reorganization of the subsystem to upgrade its stature within the project, will provide the necessary impetus to initiate more useful analytical reporting basedon more timely and reliable data. The Communication Subsystem was intended to provide an ongoing monitoring and evaluation function internally within the project. This would have served to coordinate the activities and direction of thevarious subsystems, providing the linkage that is vital to such a multifaceted project. Unfortunately, the function envisioned in the PP was never fully implemented. Two major reasons for the non-implementation were the lack of adequate U.S. technical supervision for subsystem personnel and the organizational structure which placed this subsystem on the same horizontal level with the other subsystems. This positioning made Communications an equal among subsystems it was supposed to monitor, evaluate, and coordinate. Consequently, the organizational structure is being changed and, combined with the addition of a U.S. technical advisor, hopefully will lend added stature to Communications-related activities.

While project progress was mixed during the first two years of activities, the first formal evaluation, which took place in June-July 1979, generally agreed that a solid foundation had been laid and that with certain changes in approach and focus, most objectives could be met by the end of the project. The various recommendations emanating from the evaluation are addressed in the text of this revision. Annex 1 addresses each one specifically and provides a brief statement on the status of each.

Project outputs are detailed in Annex 2. They are summarized as follows:

1. Maize and other crop technologies developed to suit the project area;

2. Improved technologies extended to local farmers;

3. Viable Farmers' Councils developed;

4. Intermediate technology production and maintenance capacity developed;

5. Roads (secondary and farm feeder roads) and bridges rehabilitated;

6. Project area marketing capacity expanded; and

7. Information system developed and functioning.

As amended, the total project costs are estimated at approximately $23,000,000 of which AID will finance approximately $13,400,000 or 58 percent of project costs. The GOZ contribution totals approximately $9,600,000 or 42 percent of project costs. These costs are summarized in the following table:

SUMMARY FINANCIAL TABLE
($000)

AID Contribution	
Technical Assistance	7,200
Commodities	5,200
Training	500
Other	500
TOTAL	13,400
GOZ	
Technical Assistance	5,300
Commodities	4,100
Training	200
TOTAL	9,600
GRAND TOTAL	23,000

A. Project Goal and Purpose

The goal to which this project contributes remains the achievement of national self-sufficiency in maize. The specific purpose of the project is to increase the net income of small farmers in the project area by 75% by the end of the project (1983) as a result of raising corn production from 27000 MT (1978) to 49000 MT; and to develop a rural development process in the form of a model that is replicable in other parts of Zaire.

By the end of the project, i.e. 1983, the last of year of AID financing, it is expected that one-third of the farmers in the project will have adopted new seeds and improved practices and as a result will have achieved a 50% increase in yields. Another one-third will have accepted only the improved seeds and will have achieved a 30% increase in yields. It also is expected that about one half of the farmers will have benefited from improved roads and as a result will have increased their corn fields by 20%. These production increases combined add up to a total increase in production of 22 thousand MT. By this time fertilizer will have been introduced on farmers' fields in limited quantities. Finally, a process and institution will have been developed that will make possible the expansion and replication of benefits started during the life of the project.

B. Description of Project Subsystems

This project now has five components (sub-systems) plus a project management unit that includes a monitoring and evaluation system. Each activity is described separately below. These descriptions emphasize any changes in focus or direction within the specific sub-system.

1. Agricultural Research and Extension

a. Objectives

The points of departure for this sub-system are (1) the methods of maize production in the project area where maize is already an important cash crop and (2) research done by the Zairian Maize Program (PNM) with technical support from CIMMYT. The approach as originally proposed and that continues to be appropriate was to begin by developing an understanding of present production systems in the project area and, building on the strengths of those systems, adapt the improved technologies that were being developed by PNM. The new technologies are based on a new seed variety (Kasai I), improved practices (time of seeding, better spacing and increased weeding), and the use of fertilizers. Although the PNM technical package shows considerable promise, it has not yet received extensive testing under varying growing conditions and farming systems in the forest and savanna areas of North Shaba.

Within the context of the promising possibilities that exist for increased maize production, the objectives of this sub-system are to:

(1) design, test and introduce maize and to a lesser extent other crops' technologies tailored to the farming systems in the various localities;

(2) develop an institutional base in North Shaba capable of carrying out an adaptive research program and diseminating improved technologies to farmers; and

(3) create a system that allows on-going communications among extension agents, farmers and researchers.

These objectives are the same as those stated in the PP.

b. Activities

The activities to be implemented under this sub-system remain originally as described. The first activities carried out were the recruitment of research and extension personnel and upgrading the research facilities at Ngaba. At present there are 5 technicians at the research station and 40 extension agents at Farm Centers. Research stations have started operation at four locations, but facilties have not been constructed on schedule because of a lack of materials.

The activities of the Research and Extension staff are organized on three levels. The first is research at four stations in different parts of the project area, with most of the activity at Ngaba. These stations also are used as maize seed multiplication centers. Serious delays in the arrival of equipment and construction of facitlities have impeded the full installation of the research program. At the second level, "diamond" maize trials (after the shape of the field which is designed to show four alternative technologies) have been installed in demonstration plots located at the Farm Centers where the extension agents are based. These trials are intended to demonstrate the results of improved seeds, modern practices and fertilizers. They were carried out in 16 Farm Centers in 1978/79 and then in 18 Farm Centers in 1979/80. At the third level, a particular package of recommended practices is promoted to farmers who adapt it on their own fields. This package includes the use of improved seeds and modern practices. Fertilizer is not included in the package because it is not available except for use on the research stations.

The effectiveness of this sub-system has been seriously diminished by (1) the lack of a qualified U.S. agornomist; (2) the Zairian staff's lack of training and experience in adaptive research; and (3) the inability of the Communications Sub-system to provide baseline data on existing farming systems in the project area.

The basic assumption underlying this subsystem has been that the technical package developed by National Maize Program (PNM/CIMMYT) is sound and ready to be introduced to farmers. This flows from the fact that most of the higher level PNS agronomic technicians have a PNM background and orientation. Thus, the focus of their activities was not necessarily to test and adapt a technical package but rather to convince farmers that they should adopt the existing technical package. So far, only the improved seeds have been accepted on a significant

scale. Some farmers have adopted some of the recommended modern practices but very few have adopted the full package. One of the main problems with the recommended practices has to do with the timing and number of weedings, which tends to interfere with cultivating other crops such as cotton.

A basic flaw in the extension program is that the demonstration fields are designed primarily to show the benefits of fertilizer while the particular technical package being promoted (seeds plus improved practices without fertilizer) is not part of the demonstration trials and had not even been tested in the project's research program that was proposed in the PP has yet to be started.

Beginning with the 1980/81 crop year, several activities will be initiated that will bring this subsystem more in line with what was called for in the Project Paper.

First, the various existing production systems will be identified. At present only a very subjective typology of these exists. This typology will be matched and verified with soil surveys, ERTS interpretations and demographic data to generate a useful set of classified production environments. The on-station trials and field trials will then be organized to be representative of these production environments. Also, with a well-defined matrix of production environmentts it will be possible to identify a manageable number of farms for the intensive gathering of farm systems data. This approach forms the foundation of an adpative research program. Adaptive research presumes a need to understand existing farming systems out of which a research agenda can be identified, tested and analyzed.

Second, the current three level approach to research and extension described above will be retained but will be reorganized to reflect the specified typology of production environments. The third level of research, on farmers' fields, will be made much more structured. On-farm resource allocations will be monitored and production bottlenecks identified. Areas of study will include a complex of crops in addition to maize and a complex of practices including the used of fertilizers. Such a research program can easily mushroom to unmanageable proportions but with careful stratification and precise sampling techniques, it should be possible to keep it within the capacity of PNS personnel and resources.

Third, the trials on demonstration fields will be oriented away from showing fertilizer yield responses to farmers and towards demonstrating those practices that are actually being recommended by the extension service.

Fourth, an adpative research program will be undertaken for fertilizers. The program will be undertaken for fertilizers. The program will be carefully designed to reflect different growing conditions and farm systems in the project areas and will be aimed at establishing the responses to fertilizer on farmers fields and the impact of fertilizer use on farmer incomes. The quality of the trials on demonstration plots will be improved beginning with the next crop year and fertilizers will begin to be introduced on farmers' fields in 1981. This

will not be the start of a fertilizer distribution program but rather a carefully monitored pilot effort to resolve technical and economic feasibility issues related to the use of fertilizers in North Shaba. Given theprice policy and supply constraints to fertilizer use in Shaba it should not be assumed that this activity will lead to sharp increases in fertilizer use in the near term. However, the data can provide the basis for bringing about appropriate changes in GOZ policies that affect fertilizer use.

In addition, village level and on-farm grain storage activities will be undertaken jointly by the Research/Extension and Farmer/Group sub-systems. Two R/E technicians are currently in training at IITA/Tbadan and will initiate a grain storage program upon their return.

These new activities do not reflect any change in design from the PP but, primarily because of the lack of a strong agronomist on the technical assistance team, they have not yet been initiated. The result is that in many ways the research and extension program is not much further ahead than it was in 1977 except that farmers are at least aware of potential benefits to be realized from future PNS activities. Recruitment of an agronomist is being given top priority by the contractor and if one is identified by the end of this year, this subsystem will be able to achieve its objectives by September 1983.

Inputs

U.S. support for this sub-system includes:

(a) Technical assistance:

(1) agronomist for the life of project

(2) short-term consultants in research design, soils, entomology and pathology

(b) Equipment and commodities

(1) vehicles and motorcycles

(2) commdities for rehabilitation of research facilities in Ngaba and housing in Kongolo and Mbulula

(3) Office equipment

(c) Training

--- 35 person-months of short-term training

Details are provided in the AID budget attached to this document (Annex 4).

2. Farmer Group Development

a. Overview

As described on pages 86-92 of the PP, a subsystem for assisting the formation and development of farmer groups and precooperatives was included as an integral part of the project. It was anticipated that the project would introduce extension services, intermediate technology products and other activities at up to 75 localities within Kongolo and Nyunzu zones. A Farm Center would be established at each locality to serve one or more villages, and the Farmer Group Development subsystem would serve as a mobilizing agent to encourage farmers served by each center to organize representative councils and undertake activities of common interest. As described on page 91 of the PP:

> "Over the long run, small groups within each area served by a Farmers' Center will become the building blocks of an effective organizational/cooperative development effort. The Farmers' Council may then evolve into a primary society which serves several of these smaller group or branches."

The discussion in the PP emphasized that this process of evolution would be gradual, and highly variable from one locality to another. It was not foreseen that full-fledge cooperative societies would be established during the six-year period (1976-1982) during which U.S. assistance would be provided.

b. Objectives

As stated in the PP, the objectives for this subsystem were broad and essentially open-ended. On the basis of experience gained during the past three years, the PMU, USAID and the contractor's evaluation team are in agreement that a more focused effort is needed that will concentrate on income-generating activities for the local farmer groups that have been formed or are in the process of formation. Since PNS remains essentially an agricultural production project, it is important that its component activities are harnessed to work towards common objectives. Furthermore, the long-term sustainability of farmer groups which is the basic rationale for the organization effort, appears to be closely tied to their prospects for managing economically viable, productive activities.

A sharper definition of objectives for the subsystem, which will involve closer integration with other subsystems' efforts in agricultural production, tehcnology generation, and dissemination and marketing will require two changes of emphasis in the FGD program:

1. A more limited number of Farm Centers will received concentrated assistance from the subsystem; provisionally, about 25 will have councils and associated productive activities as a result of FGD inputs; and

2. Emphasis on the economic viability of farmer groups will be reinforce. The subsystem will also attempt to be responsive to social service demands from farmer groups.

c. Activities

To date (June 1980), the project has palced extensionists (under the R & E subsystem) in 37 localities which have been designaged as Farm Centers. In the developmentof groups at the local level, however, the FGD subsystem has moved more slowly. Following the placement of an extensionist, the next step is for FGD animateurs to work in the constituent villages to encourage the selection of representatives (normally one from each major partriline, matriline or other family grouping) to an agricultural committee for each village (CAV). Following this, CAV members combine to form a Farmers' Council (Conseil de Cultivateurs, or CC) to represent the cluster of villages served by the Farm Center. Of the 37 Farms Centers now served by extensionists, 11 have established CCs, while about 10 others have CAVs in process of formation at certain villages but have not yet moved to the stage of creating a full CC.

The mid-project evaluation, conducted in 1979, raised the issue of whether PNS should be broadened to become a "truly integrated" project, by adding social service components. Limited material and logistic support, manpower limitations, and the very complex demands posed by the production activities that remain the focus of PNS argue against this option. USAID, the PMU and the contractor are in firm agreement that resources must be concentrated on the production and marketing activities for which the project was designed.

The potential for success appears to be greatest in the domain of marketing, at least until improved production methods and inputs are developed to the point where a new "package" can be made available to farmers who are organized on a group basis. (At the present time only the distribution of improved maize seed and tools can be facilitated through the CC/CAV structure). During the 1980 marketing season there is a possibility that groups in several localities may rent grain trucks from the project to market maize directly at the Kongolo or Nyunzu railheads. If the USAID Marketing Loan (025) delivers additional trucks to the project areas in 1981, a joint effort will be made by FGD and the Marketing & Credit subsystem to determine whether several trucks can be made available to a small number of strong and active CCs on a credit basis, possibly through counterpart funds administered by PNS. (See the accompanying description for the M &C subsystem).

d. Inputs

The services of a Rural Development Specialist to advise the Zairois chief of this subsystem are programmed to continue through September 1982. This has been necessitated by start-up delays and the decision to introduce a stronger economic orientation to activities at PNS-assisted Farm Centers. The R.D.S. advisor will be a U.S. technician with a background in precooperativs and marketing

in Francophone Africa.

A second R.D.S. position, to be filled by a women with social science training and considerable field experience, is programmed for two years through September 1982. The position has been vacant, except for TDY inputs, since March 1978. The 1979 mid-project evaluation strongly recommended that the position be continued and filled. Recruitment for the post has posed major difficulties, but a sustained effort is being made by the contractor to identify a qualified female technician.

Four months of TDY assistance has been programmed to provide expertise on credit issues as these are identified in the subsystem's work with evolving farmer organizations based at the PNS Farm Centers.

Training funds have been budgeted for one M.S. degree course in the U.S., and for 30 person-months of non-degree training in third countries. In addition, allowance has been made for two in-country seminars for subsystem staff.

Commodity costs are based on procurement of one pickup and two International Harvester Scout vehicles to replace original vehicles, plus 10 motorcycles for subsystem field staff and a small amount for books and training materials.

3. Marketing and Credit

a. Overview

The focus on this subsystem has changed considerably from that envisioned in the PP. During the first year of PNS, the National Cereals Office (ONACER) was dissolved, thus removing the main force in the project's marketing scheme. ONACER was replaced by a similar, though broader based, organization - ONPV - which was placed within the new Ministry of Rural Development.[1] ONPV's weak beginning and uncertain future have precluded operations and assistance in the project area to date.

The project did attempt to assist local merchants during the 1978 marketing campaign. This was limited to fuel sales from PNS sources and sacks received from a Lumbumbashi merchant. There was also an attempt to determine the movement of surplus maize from the project area.

A USAID-financed marketing loan, scheduled for the 1979 marketing campaign, has been delayed in development. In the face of this, PNS planned an expanded assistance role to merchants and some farmer groups. This would have included the sale of fuel and sacks. In addition, PNS would have provided a weighing service in Kongolo between small merchants and an agent for a miller in Lubumbashi. However, due to delays caused by the great flood and interference by a local merchant/politician, the project's efforts directed toward small merchants and farmer groups were initially curtailed. The project did sell fuel, rent trucks to merchants and, towards the end of the campaign at the direction of the Secretary of State for Agriculture, directly purchased maize from Ag. Center farmers.

1 This Ministry was created in 1978. Then in 1979 it became a Secretariat under a newly named Ministry of Agriculture and Rural Development.

b. Objectives

The primary task assigned to the marketing/credit subsystem in the PP was to promote a strong, competitive market system by increasing the quantity of viable grain merchants, be they individuals or groups. Seven activities were to be given attention. These were: 1) credit and market development (institutional aspects such as presence of a bank), 2) licensing of grain merchants, 3) credit for truck purchases, 4) truck rentals, 5) credit for maize purchases, 6) small farmer credit (study needs), and 7) improved and expanded rail facilities.

As said earlier, the main force for implementing the above was removed with the dismantling of ONACER. Thus the project has had to re-evaluate the possibilities open to it with personnel and resources available. PNS in the next three years will limit its involvement to: 1) assisting area merchants in the procurement of fuel and sacks, 2) aiding in carrying out the 025 loan, 3) rental of trucks and other possible assistance to smaller merchants and farmer groups, 4) studying the needs for farmer production credit, and 5) monitoring the sale, movement and shipment of agricultural products from the project area and formulating desired changes in policy for the marketing system.

The need for small farmer production credit in increasing agricultural production is presently being studied. Should these studies indicate that an institutional credit program would be a positive factor in production activities, such a system using counterpart funds will be planned and begun.

The improvement in railhead facilities as foreseen in the PP will not be budgeted for or carried out until the tonnage sent by rail increases dramatically over present levels -- which are behind those reported for 1974 and 1975. Should improved rail facilities be required, necessary work will be financed through SNCZ and counterpart funds.

c. Activities

In the current year - 1980 - the marketing loan 025 is still not a reality. PNS activities will be limited to an increased statistical gathering effort (including work for 025), sale of fuel to area buyers and rental of trucks to small commercants and farmer groups. It is foreseen that PNS will become an official distributor for the GOZ of fuel for the North Shaba area.

If the marketing loan is not implemented, project activities in marketing will remain limited in scope, with activities linked to specific interventions as presently carried out. It is doubtful if the project will become involved in any credit programs to merchants. They can generally satisfy their local currency needs for cash.

d. Inputs

Dollar budgeting for the 1981 to 1983 period is largely limited to manpower needs and training. As 025 becomes a reality, a full-time marketing advisor in the field will be required from mid FY 81 to mid FY 83. In addition four months of TDY assistance in production credit has been budgeted as well as a total of 9 months for training in relevant areas of marketing and credit for the Zairian staff. Commodity purchases will be limited to the realm of transportation in the form of 2 pickups and 2 motorcycles.

4. Intermediate Technology Subsystem

a. Overview

Production activities in the I.T. workshop began much faster than anticipated in the PP. This precluded the necessity of purchasing many thousands of implements and hundreds of small hand-operated machines as initially planned. During the first two and one-half years of operation more than 12,000 agriculture tools and over 100 small machines were produced.

b. Objectives

Initial activities for the I.T. subsystem were to revolve around three objectives: 1) actual production of tools and machines using a refurbished SNCZ (National Railroad) machine/blacksmith/foundry shop; 2) training of local blacksmiths; and 3) spearheading activities at the village level such as soap-making and grain storage. Soap-making has been eliminated, at least temporarily, due to the high cost and inadequate supplies or raw materials such as caustic soda. The grain storage activity proposed in the PP has never been undertaken due to the termination of the ONACER program. It is now proposed that grain storage work will be transferred to the Research/Extension and Farmer Group subsystems.

c. Activities

The first two objectives above are being satisfactorily achieved and will continue. Emphasis on tool production should diminish as village level production increases due to PNS training and supplying local blacksmiths with materials. However, strong pressure from the GOZ for continued high levels of tool production may make a continued emphasis on tool production necessary. In any case more time and effort will be devoted to the testing and fabrication of appropriate machines for village use. This will call for a stronger research/development component over the next several years.

The village blacksmith training and follow-up program will continue. To date 51 individuals have received training, fabricated a set of personal blacksmith tools, and received a supply of metal on credit. Village visits to monitor progress and problems are continuing and remain an important link in maintaining this activity at the village level. The success of this effort can be seen in the rejuvenated activities of these village blacksmiths and most importantly the quality of the tools they are producing. Not all of the trained blacksmiths are fabricating tools on a full time basis because they are also farmers. And there is also a number who have not continued as blacksmiths at all.

The subsystem is beginning to close the gap between production costs and revenues. By early FY 81, sales' revenues should fully cover costs and possibly show a slight profit. In this light, the subsystem will begin to study ways in which the I.T. shops can become a self-supporting private or semi-private enterprise. Several possibilities have been suggested, including a cooperative group, missionary groups, private individual, parastatal organization or some other type of group/organization. One of the problems confronting the profit-making capability of the subsystem is the cost and availability of metal sheets. Metal from the old barges

belonging to the project will be available for several more years. However, for certain tools and machines, a heavier, good quality metal is required. Since this particular type is in short supply it will soon have to be purchased from outside sources. This added cost will make it more difficult to become a profit making venture while maintaining low prices for finished products.

d. Inputs

The revised T.T. dollar budget for the final three years of U.S. assistance calls for the following:

(1) Funding through November, 1981 for an expatriate engineer. A former Peace Corps volunteer with the I.T. subsystem, this engineer worked out so well that he was brought on as a member of the contract team to continue the work of design and fabrication, as well as the village level blacksmith training.

(2) Two man-months of T.A. These are being programmed to help in the research/development aspects of the I.T. work.

(3) Money for participant training outside of Zaire.

(4) $47,000 for replacement of some shop equipment and some new equipment. It is felt that these pieces are necessary to maintain the level and quality of tool and machine fabrication.

5. Infrastructure Subsystem

a. Overview

Since team arrival in the project area in late July 1977, the infrastructure improvement program has rehabilitated project-facilities and housing in Kongolo, Mbulula and Ngaba. At Nyunzu, some housing has been rehabilitated and the construction camp compound of the German construction firm which built the Kabeya-Mayi bridge was purchased.

Secondary road and bridge rehabilitation started in the summer of 1979 following arrival of the infrastructure vehicles and after clean-up of flood-damaged project facilities in Kongolo. Road rehabilitation has proceeded at a faster pace than bridge construction, but both have been affected by funding constraints. A shortage of cement has also curtailed bridge construction and completion of project facilities

Due to delays in project implementation, i.e., late arrival of the expatriate staff, the one-half year delay caused by the flooding of the Lualaba River in 1979, and higher than anticipated inflation, particularly fuel-related, this section discusses the need for continuing major infrastructure support through FY 82.

b. Objectives

(1) Project Paper. The objectives of this subsystem as stated on pages 113-115 and 135 of the PP remain essentially unchanged. The main objective of the roads component of the infrastructure development

program remains to facilitate farmer access to improved agricultural inputs and services, as well as to marketing channels

(2) Revisions. The road network objectives (724 km secondary road) remain the same as in the PP. Some changes in the secondary road listing are being made periodically, as personnel learn more about different sections of the project area (e.g. which areas have greater agricultural potential than others). The number of bridges in the program has been reduced from 72 to 55. Delays in start up, cement shortages, and local funding constraints have led to this decision to cut back.

A ten month delay in infrastructure mobilization, along with the GOZ budget restraints, lack of availability of local building materials (primarily cement due to operation difficulties at the Kalemie plant), deterioration of the barge/rail transportation system, and a somewhat more ambitious facility rehabilitation/construction program have resulted in both a delay and a stretching out of the road bridge rehabilitation program, thus necessitating infrastructure support through FY 82 and vehicle/equipment maintenance support through FY 83.

c. Activities

(1) Road and Bridge Program. The PP schedule allowed 30 months for road and bridge rehabilitation, scheduling 360 km of roads and 29 bridges per year.

This schedule has been revised three times due to changes in equipment arrival dates, the March-July 1979 flood, and the periodic cement/GOZ financing shortages. The revised schedule below assumes bridge construction will continue to be somewhat restrained by the non-availability of cement to complete both the new facility construction and bridges.

Revised Road/Bridge Rehabilitation Schedule

Periods	Km Roads Planned	Actual Km Completed	Bridges Planned	Bridges Completed
May 79-Sep 79 (Dry Season)	40	40	1	1.6
Oct 79-Apr 80 (Rainy Season)	115	90	4	4
May 80-Sep 80 (Dry Season)	265	160*	12	4*
Oct 80-Apr 81 (Rainy Season)	340		21	
May 81-Sep 81 (Dry Season)	490		30	
Oct 81-Apr 82 (Rainy Season)	565		38	
May 82-Sep 82 (Dry Season)	724		55	

*Progress as of June 6, 1980

The PP envisioned the construction of bridges using cement masonry or concrete abutments and timber beams and bridge decks. During the initial stages of the project, it was determined that several problems exist with wood bridges and that it was more desirable to construct permanent bridges given the recurring maintenance problems. Wood bridges in the project area have an average life of 2-5 years. The PP assumed bridge

timber was readily available in the project area (it is not) and that the existing carpentry shop was a sawmill. It is only a cabinet or light carpentry shop. (Observation by a TDY Entomologist also confirmed termite populations to an extent unseen in other countries).

In order to conserve cement and provide labor-intensive work, most small span bridges are being constructed as masonry arches. In addition, some 1.5 meter steel culverts are being used to replace some of the very short span bridges, and there is a good possibility that steel bridging material may be obtained from a steel truss bridge donated to the GOZ by the West German AID Mission. A study is under way by the Project to show Office des Routes and the German AID Mission how the remaining bridge members could be used to complete the project bridges. If this material can be obtained, the original bridge objectives of the PP are obtainable by the end of FY 82.

The 724 km of roads may be reduced by the deletion of some of the Farmers' Centers, relocation of Farmers' Centers, and perhaps inability to cross large streams due to lack of bridging materials. Without these restraints, rehabilitation of 724 km is feasible, and it is possible that some of the farm penetration roads in the Nyunzu area will be upgraded to secondary status so that the project objectives can be met.

(2) Project Facilities. In Kongolo, more housing of a permanent type was rehabilitated than anticipated in the PP. The initial GOZ budget was depleted by purchase of the Infrastructure and Intermediate Technology Facilities, 4 apartments and 5 houses. Remaining housing and PMU office facilities were rented, but required considerable rehabilitation. The PP anticipated about 17 housing units at Kongolo for expatriates and counterparts, with no housing for middle management Zairian staff. An additional 15 units have been rehabilitated for middle management due to the lack of adequate housing in Kongolo.

At Mbulula and Ngaba, minimal housing costs and rehabilitation of the Ngaba Research Center were budgeted in the PP. Most housing was to be of the local type. The PMU's program now provides for 11 to 16 permanent housing units at Mbulula/Ngaba plus construction/rehabilitation of six permanent structures at Ngaba for the research facility and 48 semi-permanent housing units.

Due to GOZ budget constraints and subsequent delay in obtaining materials, the Stewering Construction Company maintenance/warehouse/housing facility in Nyunzu was purchased with project loan funds. This facility will be used for office space and housing and as a base of sector operations for the Infrastructure subsystem. Some minor remodeling of two living quarters and the office is programmed.

(3) Plan for Handover of Special Brigade. The Special Brigade is scheduled to be turned over to OR following completion of the road and bridge rehabilitation. In order to facilitate the turnover, increasing emphasis will be placed on training of the Infrastructure counterparts and technicians, especially on-the-job training. (To date, this aspect has been hampered due to the problems encountered in receiving equipment and parts, and the Special Brigade organizational start-up process). Gradual turnover of operational facilities and more of an advisory role by expatriates is foreseen in FY 82.

Additionally, experience has shown that equipment breakdown, use of spare parts, and accident rates are all greater than anticipated in the PP. It is estimated the breakdown and loss of service rates approach 20%/annum. For this reason, the revised budget includes substantial increases in spare parts and some replacement of heavy equipment and trucks. The additional spare parts and equipment will ensure that the Special Brigade will be sufficiently well-equipped to continue operations for the 12-month period following termination of AID-financing of the Special Brigade.

All expatriate personnel except the Equipment Maintenance specialist will be phased out at the end of FY 82 when the rehabilitation program is completed. Any bridges remaining from the original 72 will be within the capability of the Brigade to construct, and the hand labor maintenance program will have been operational in much of the project area for three years.

Extending the Equipment Maintenance Specialist through FY 83 to advise in the repair of Special Brigade equipment and to assist in repair of project vehicles and facilities will further ensure Special Brigade capability. Office des Routes (OR) in the North Shaba region has been in need of additional maintenance assistance, and this will fulfill that need in the project area and do much to ensure continued operation by the Brigade.

d. Inputs

(1) Technical Assistance. Proposed field staffing and timetable for Infrastructure is:

Proposed Infrastructure Staffing

Position	Man-Months Project Paper	Proposed Man-Months	Position Terminates
Director	60	62	9/82
Equipment Maintenance	60	74	9/83
Roads Specialist	42	50	9/82
Bridge/Bldg. Specialist	50	53	9/82
Total	212	239	

The above does not include short term home office backup support estimated at about 7.5 man-months over the next three years. Home office support has proven very useful over the past three years.

(2) Training. Eight person months of Third country training has been budgeted for counterparts and technicians.

(3) Commodities. The following has been budgeted for spare parts, project facilities, replacement equipment and fuel in the Infrastructure subsystem:

Proposed Infrastructure Commodity Budget

Description	Amount
Special Brigade Maintenance	$ 478,000
Project Facility Maintenance	138,000
New Equipment	491,000
Project Fuel (40% funded in U.S. $)	508,000
Aviation Gas	149,000
Total	$1,774,000

The balance in the loan fund available for commodity purchase is approximately $1,400,000.

6. Project Monitoring and Evaluation

a. Overview

The project design included a subsystem whose primary role was to collect, process and analyze data on project performance and impact. In performing this function, the subsystem would provide project management with internal capacity for monitoring and evaluating the activities of the other subsystems. This, in turn, would indicate the need for changes in emphasis and/or direction, as experience was gained in project implementation. The need for two-way communication at all levels, and specifically between project staff and small farmers in the project area, received major emphasis in the discussion of this subsystem in the PP.

While the concepts used in the original design remain valid, it has proven very difficult to apply them effectively with the personnel and resources available during the first three years (1977-80). In conjunction with the revision of the PP, specific changes have been proposed in the structure, activities and inputs for this component of the project.

b. Objectives

The objectives for this subsystem, as stated on pages 138-139 of the PP, have not been significantly changed. It is now recognized, however, that greater selectivity is needed in the data collection and analysis program, and that it will not be possible to monitor and evaluate the progress of all project activities in as much depth as originally foreseen. The information needs of the Project Management Unit (PMU), and USAID and the GOZ, will necessarily command the highest priority. To this end the project must focus on production trends in the project area for maize and other crops, on the technical impact of different agricultural inputs and practices, and on microeconomic analysis of farming systems, to document changes in small farmers' incomes and their response to improved agricultural technologies.

c. Activities

When implementation began, data collection and analysis (DCA) functions were assigned to a separate subsystem that had equal status with the others (Research & Extension, Farmer Group Development,

Intermediate Technology, Marketing & Credit and Infrastructure). The subsystem chief was a young university graduate, although the PP had anticipated that a more experienced individual would be assigned to this post by the Department of Agriculture. U.S. technical assistance was to consist of approximately one half of the time of the Advisor to the Director/Chief of Party, with additional TDY inputs as required. In practice, the Advisor's heavy management responsibilities sharply limited his ability to assist the subsystem chief, and periodic inputs by a DAI home office staffer were insufficient to fill the gap. Problems of internal coordination interfered with data collection activities, since the subsystem chief and his small and equally inexperienced staff did not enjoy formal authority over personnel in any of the other subsystems.

For these reasons, it was proposed in the 1979 mid-project evaluation that a full-time U.S. advisor be recruited to work with the subsystem. An interim position was created, with a new technician dividing his time between this subsystem and marketing and credit. As a result of the June 1980 evaluation carried out by the contractor, DAI, this advisor now has been assigned to work full-time on DCA activities. An additional technician will be recruited during FY 1981 to work on Marketing & Credit in conjunction with USAID Agriculture Marketing Loan 025 (see Marketing & Credit subsystem description).

A further change has been made in June 1980 with the termination of the Communications subsystem per se, and the transfer of its personnel and functions to a cell within the PMU.

This change is intended to strengthen the linkage between project management and information activities, and to provide greater authority to DCA personnel in carrying out their responsibilities. The former subsystem chief was recently reassigned to the Department of Agriculture headquarters in Kinshasa, and the U.S. advisor will direct DCA activities on an interim basis until a qualified replacement is found.

An intensified DCA effort currently is being planned for the 1980/81 agricultural cycle, in conjunction with the Research & Extension subsystem. Following recent discussions with the Statistics Division of the Department of Agriculture, two Zairois technicians with U.S. training in statistics and agricultural economics will be assigned to PNS on a part-time basis. They will work with the U.S. advisor and remaining staff to develop a sample frame for the project area and to establish procedures for more rapid data processing and more thorough analysis and interpretation of results. Major areas that need emphasis are technical and economic analysis of production systems, yield estimates, land use patterns, and the impact of proposed technological innovations and inputs such as fertilizer on farmer productivity and income. These can be more easily monitored on a regular basis using a carefully designed sample frame, and a limited number of trained enumerators, than with the system that was used previously, which depended primarily on R&E subsystem extensionists to collect farm-level data.

d. Inputs

The services of the long-term U.S. advisor will continue to be provided through December 1982. No additional TDY assistance has been programmed, although DAI's home office project coordinator will be available as needed during periodic visits to the project. These visits have been programmed as TDY assistance to the PMU.

A total of 32 person-months of short-term non-degree training has been programmed (24 U.S. and 8 third country) for Zairois personnel from the DCA unit during FY 1981 and FY 1982.

Commodity inputs consist of a four-wheel drive vehicle and 7 motorcycles for use by field enumerators, who will be required to cover large distances within the project area. Office supplies for the unit will be covered under the budget of the PMU.

III. Feasibility Issues

The analysis of feasibility issues that is presented in the original PP remains essentially valid. This section updates the original analysis based on more current information and highlights certain feasibility issues that have led to the revised objectives and changes in emphasis that are described above.

A. Economic Issues

1. The Production Impact of GOZ Pricing Policies

The GOZ maize pricing policy for Shaba Region can be summarized as follows:

(a) Employees of GECAMINES, the Zairian copper and cobalt producing corporation, are supplied with maize flour at a heavily subsidized price. In 1979 the GECAMINES price was Z0.52/Kg., compared to the official consumer price of Z1.14/Kg. In recent years, GECAMINES has been importing between 150,000 and 180,000 MT and obtaining another 10,000 MT from its mechanized maize farm in South Shaba.

(b) For the South Shaba population not supplied by GECAMINES, the GOZ policy is to set an official price to maximize the purchasing power of the urban population. Precise data are not available but it appears that the quantities of maize sold at the official price amount to less than 10% of the amount supplied by GECAMINES. The importance of the official price is that (1) any miller who wishes to produce flour for South Shaba is obliged to sell it at that price and (2) it is used as the basis for establishing the producer price in Shaba region.

(c) Associated with the policy of low consumer prices in South Shaba is the prohibition of maize movements to Kasai Oriental where prices are more than double those in Shaba. Exceptions to this rule are made, the most important being the authorization to the only private flour mill in Shaba to sell maize flour under contract to the Zairian diamond mining company in Kasai.

The relationship of the official consumer price in South Shaba to producer prices in the project area is shown in the following table:

Relationship of Consumer Prices to
Producer Prices in Shaba
(Zaires per 100 ton)

	1976	1977	1978	1978	1980
Producer Price	75	100	220	350	450
Trader Margin	30	60	80	250	250
Railhead Price (North Shaba)	105	160	300	600	700
Rail Transportation to Lubumbashi	10	15	23	54	155
Price c.i.f. Lubumbashi	115	175	323	654	855
Milling Margin	20	38	—	488	478
Official Flour Price	135	213		1142	1333

To the extent that the official producer price understates the market value of flour in South Shaba, producer prices, trader margins and milling margins are lower than they would otherwise be. In 1976, neither the trader nor the milling margin was sufficient to cover costs with the result that all the large flour mills in South Shaba, except Tarica Frere, closed and the number of traders in North Shaba diminished sharply. The situation improved dramatically in 1978 when the quantity of maize marketed increased to 11.6 thousand MT compared to 4.9 thousand MT in 1977. Production had increased in 1978 because of better weather but there is evidence that farmers also responded strongly to a doubling of the producer price. In fact, it appears that many farmers in Kongolo did not keep enough maize for their own consumption and were obliged to purchase some later in the season higher prices. In 1979, production increased substantially and the quantity marketed totalled 12.3 thousand MT despite serious flooding which shortened the marketing season.

In 1980, there has been another shift in policy away from production incentives. The official price of flour in Shaba allows only a slight increase in the producer price and no increases in milling and trader margin despite an inflation rate of well over 50 percent. This reflects the continued consumer orientation of maize pricing policy in Shaba. On average, official price in South Shaba can be expected to increase only as much as is necessary to assure that the production, marketing and milling of maize does not decline.

The brunt of this policy falls on the farmer. With few exceptions, the official producer price is considered a maximum as well as a minimum. Traders and millers, on the other hand, have alternatives that increase their profits. Tarica Freres, the miller that purchases most of the North Shaba maize, sells flour to MIBA. Traders sell maize in Kalemie (the capital of Tanganyika subregion) and in the Kasais for prices that are 50 percent and more above official Shaba prices. Of course, the farmers benefit somewhat from these alternative markets because in some years millers and traders would not be able to operate profitably without these markets.

From the standpoint of PNS, the key questions are (1) how much can the producer prices be increased and (2) what would be the impact of price increases on maize production in North Shaba. If maize prices were decontrolled, consumer prices in Shaba would approach those in Kasai Oriential, i.e., they could increase by 50% to 100%. Producer prices in North Shaba would increase correspondingly. This would help to bring maize supply and demand into balance by increasing production and causing some shift in consumption out of maize into other foodstuffs. For political reasons it is very unlikely that the GOZ would take such a step. A more realistic, although still unlikely possibility, would be for the GOZ to adapt a production-oriented policy of gradually reducing the differences in consumer prices between Shaba and Kasai Oriental. This would be a less disruptive way of bringing official maize prices more in line with actual supply/demand conditions.

One economic measure of how much prices should be allowed to increase is the cost of imported maize computed at an exchange rate that reflects the true value of the zaire. At an exchange rate of Z6 = $1, the cost of Zimbabwe maize in Lubumbashi would be about Z1,500. At the 1980 official producer price,

North Shaba maize costs Z855/MT in Lubumbashi. If impurities are taken into account, the price increases to about Z1,000/MT. At Z6 = $1, the producer price could increase by 75 percent to Z800/MT and still be competitive with imports.

Although in general, there is little doubt that increased consumer prices would lead to increased maize production--both directly through increased producer prices and indirectly through improved marketing activity, as trading and milling become more profitable--the extent of that production increase would depend on (1) how much labor farmers would be willing to shift out of other activities or out of leisure time into maize production either to expand the area planted or to adopt higher yielding varieties that are more labor intensive; and (2) whether the price increases make certain production-increasing inputs economic. On the first point, existing producer prices are high enough to induce some production of maize as a cash crop. Since the project started, improved seeds are proving to be economic and combined with improvements in marketing, are leading to gradual increases in quantities of maize marketed. Further, at present prices and yields, it is slightly more remunerative for the farmer to grow maize than cotton, although it does not appear that there is much competition for labor time between the two crops. It is not known at this time how maize production compares with production of palm oil, rice, peanuts and other economic activities nor how much competition there is among them for labor. What needs to be determined through micro-economic data gathering and analysis is farm labor availability in the project area and the opportunity cost of that labor, i.e., how much of a return to maize production? PNS should assign high priority to answering this question beginning with the next growing season.

With respect to the economics of production-increasing agricultural inputs, the new seed varieties, which require relatively little cash outlay, are profitable even at the official producer price. In terms of the long-term production impact of the project, the key question concerns fertilizer. Without fertilizer, it is unlikely that maize yields in North Shaba can increase by more than 70 percent over present levels. With fertilizer there is the long-term potential for yield increases of up to 200 percent. The economics of fertilizer use are discussed in detail in the next section.

In conclusion, it appears quite clear that for political reasons, the GOZ had adopted a price policy in Shaba (i.e., maintaining low consumer prices) which is not conducive to maximum increases in maize production. Such increases would be difficult to achieve in any event for reasons discussed in other parts of this feasibility analysis section, but a production-oriented price policy would at least introduce a set of incentives that would increase the responsiveness of farmers to production increasing possibilities and would improve production. How much production would increase cannot be determined without further micro-economic analysis in the project area, which should be initiated as soon as possible.

2. Economics of Fertilizer Use

Attempts to assess the economics of fertilizer use in North Shaba are hampered by the wide variations in the research results to date and the lack of experience with its use of farmers' fields. If the extremes are

eliminated from last year's demonstration trials it appears that yields increase by 50 percent as a result of improved seeds and a further 100 percent increase is achieved when improved seeds are combined with modern practices and fertilizer. On farmers' fields what has been found is that improved seeds increase yields by an average of 25 percent and there is no statistically significant impact from modern practices. This may indicate that even when farmers accept modern practices they do not follow them rigorously. This has been confirmed over a period of several years in the FAO fertilizer project in Kasai Oriental.

For purposes of calculating the returns to fertilizer on farmers' fields, the following assumptions are used:

1. Yields using traditional practices and local seeds: 1.0MT/ha

2. Yields using traditional practices and improved seeds: 1.25MT/ha

3. Yields using some modern practices and improved seeds: 1.4MT/ha

4. Yields using some modern practices, improved seeds and fertilizers: (a) assuming a 60% yield increase: 2.25MT/ha
   (b) assuming a 70% yield increase: 2.4MT/ha

The 60 and 70 percent increases in yields attributable to fertilizers (rather than 100 percent as found on PNS demonstration fields) reflect (1) the fact that not all of the improved practices used in the demonstration fields will be accepted by farmers and (2) farmers will not be as efficient in using fertilizers as DOA staff are on demonstration plots. The 70 percent increase in yields implies a production increase of one metric ton/hectare. This increase has been obtained on farmers' fields under the FAO fertilizer program with close supervision by extension agents. For purposes of projecting benefits from this project, it would be reasonable to assume that yield increases of 1 MT/ha or more be obtained by farmers after 4-5 years of experience and extensionists' advice.

The above yield assumptions are converted into farmer incomes using three alternative prices:

1.	Official producer price in Shaba	Z 450/MT
2.	The economic market price based on the cost of imports using an exchange rate of Z6 = $1	800/MT
3.	Kasai open market price assumed by the World Bank for its maize project	1000/MT

The results are shown below:

Returns to Fertilizer Use
(Zaires/ha)

	Producer Price/MT		
	Z 450	Z 800	Z 1,000
Production increase from use of fertilizer (gross income)			
(850 kg/ha)	383	680	850
(1000 kg/ha)	450	800	1,000
Less cost of fertilizer:			
200 kg/ha at Z 1.5/kg	300	300	300
cost of additional labor:			
40 days at Z 0.80/day	32	32	32
Net return to fertilizer:			
Production response: 850 kg/ha	50	348	532
Production response: 1000 kg/ha	118	468	668

As mentioned elsewhere in this revision, GOZ progress in importing fertilizer for two other programs will be watched with keen interest. These programs are the UN/FAO Fertilizer Program and the World Bank Maize Project in Kasai Oriental. Their success in these efforts will provide an indication of whether PNS can begin to plan for eventual fertilizer supplies for the project area.

Past experience with fertilizer programs indicates that small farmers are not likely to accept fertilizer unless the value of the increased production is double the cost of the fertilizer. Using this criterion, fertilizer is economic at the Kasai open market price and at a price that corresponds to the true cost of maize imports (Z 800/MT).

It must be emphasized that the above calculations are based on very sketchy data. PNS must continue its testing of fertilizer, improve its research design as discussed in Part II of this evaluation and extend its research from demonstration fields to farmers' fields. The above calculations show that if (1) produce prices are increased, (2) farmers become increasingly efficient in the use of fertilizer, and (3) adequate supplies can be assured, fertilizer can play an important role in increasing farmer incomes and reducing the maize deficit in Shaba.

3. Impact of Macro-Economic Constraints

The macro-economic situation in Zaire has been worsening since 1974. Largely because of economic mismanagement at the national level, Zaire is faced with declining foreign exchange earnings, declining productive capacity in the industrial sector and rapid inflation. Several attempts have been made by the

GOZ, with assistance from the IMF, to redress the situation, so far with little success. The end result of this poor economic performance is a steadily deteriorating infrastructure and shortage of both domestically produced and imported commodities.

This state of affairs has had a serious impact on the implementation of the North Shaba Project and on the achievement of project objectives. The project components (subsystems) most directly affected have been Infrastructure and Marketing and Credit. In Infrastructure, the most critical shortages have been for cement and fuel. These have led to large shortfalls in the number of bridges built and kilometers of secondary roads reconstructed. There have also been long delays in the construction of facilities that are critical to the work of the Research and Extension subsystem, and extension activities in that subsystem have been hampered by a lack of fuel for vehicles and motorcycles.

Perhaps the most serious impact of commodity shortages is on marketing activities in the PNS project area. It is becoming increasingly difficult for traders to obtain trucks, spare parts, fuel and sacks. When these items are available it is usually from illegal sources at very high prices. Only those few traders with access to scarce items can operate. As a result, the marketing system is less efficient and competitive than it would otherwise be.

The GOZ is attempting to redress the many economic problems impeding development. Whatever success is achieved will still result in long lags before significant benefits can be felt in North Shaba. The most important implications of continued commodity shortages in the project area are as follows:

a. Maize production increases will be limited by the shortage of agricultural inputs (especially fertilizers), as well as by the reduced efficiency of PNS efforts to develop and disseminate new technologies.

b. The lack of trucks, spare parts, fuel and sacks will greatly increase the cost of marketing maize in North Shaba, which will reduce the price that could be offered to the farmer as well as reduce competition among traders who enter the market.

c. The shortage of equipment, spare parts and fuel makes it unlikely that primary and secondary roads can be adequately maintained. At the same time, rail transport will become increasingly inefficient as equipment and rails continue to deteriorate. This will increase transport costs and diminish the access of farmers to markets.

The overall effect of these problems will be to reduce the development impact of this project. Production increases resulting from project interventions will be less than they otherwise would be and will take longer to achieve. This is reflected in the reduced targets presented in the Project Description Section of this paper. The most useful action that can be taken to improve marginally on the situation is for donors to exert pressure on the GOZ to increase the priority being given to small farmer production. It should be noted that recent efforts by the Shaba Region Governor to break loose certain commodities to aid in the North Shaba marketing campaign have been encouraging.

4. Recurrent Cost Analysis

The annual cost to the GOZ of continuing this project after AID supported activities have terminated will be about $ 1.5 million for the agriculture programs (primarily research and extension activities) and about $ 1 million for road maintenance to be carried out by Office des Routes.

It is almost certain that there will be continuing shortfalls in GOZ funding.[1] Since 1974, the GOZ has faced increasing funding constraints. This situation is related to macro-economic conditions prevailing in Zaire and is very unlikely to improve measurably in the near future. Within these constraints, the agricultural sector has had a relatively low priority. In recent years, agriculture has accounted for 2 percent of the recurrent budget and 7 percent of the investment budget. Of the amounts allocated, only a small proportion has been directed to small farmer production activities. During periods of retrenchment, cuts tend to occur in the investment budget, which means that development programs that are not yet fully integrated into the Department of Agriculture (DOA) budget are the first to be affected. However, it should be noted that Project North Shaba was included in the ordinary budget for 1980. This in itself will provide greater assurance of continued funding.

Overall, the relatively low priority given to agriculture means that projects such as PNS tend to be underfunded and understaffed by the GOZ. Project activities that would be most adversely affected by funding shortages are summarized below:

- o Research and Extension subsystem must be adequately funded if improved technologies are to be developed and disseminated. This not only means that a sufficient number of qualified technicians should be assigned to the project, but they also must be supplied with proper facilities and means of transport, including vehicles, fuel and travel expenses;.

- o Unless Office des Routes (OR) has an adequate budget, road maintenance will continue to be unsatisfactory with the result that marketing services will not be available in some parts of the project area, and will be generally high in cost and inefficient;

- o The nature of the project's Intermediate Technology component is such that GOZ subsidies will be required on a continuing basis. The production of IT equipment is intended to be self-financing, but any significant R&D effort to identify and adapt new tools would be too costly to be supported by profits from production.

Under even the most optimistic assumptions regarding improvements in the GOZ budgetary situation, financial support will continue to be a problem for projects such as PNS. However, this does not mean that project

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[1]During the period of AID financing, counterpart funds will be available to support GOZ budgetary shortfalls.

activities will come to a halt when AID assistance terminates. By financing salaries of personnel out of the GOZ current budget, we are ensuring that PNS will be continued as part of the on-going DOA program. However, it is realistic to expect that the research and extension activities will flounder from time to time because of lack of funds. Benefits in the form of new technologies adapted to the area and disseminated to farmers will continue and expand after AID support has ended. In particular, it can be expected that fertilizer use will grow rapidly even without well-funded project support -- assuming, of course, that there are appropriate changes in pricing policies and that adequate amounts of foreign exchange are allocated for fertilizer imports. Further, this project will have developed and refined an approach to increasing small farmer production and incomes that will be replicable in other parts of Zaire. For these reasons it is the Mission's view that the project should be continued despite likely recurrent cost funding problems that may reduce its effectiveness over the short run.

B. Social Soundness Analysis

This summary highlights some of the critical points discussed in the original document. A more detailed analysis can be found in Annex 3.

The original Analysis tended to highlight the need to remain cognizant of the various socio-cultural factors and differences existing in the project area. An emphasis was placed on the use of indigenous personnel and talent, and to incorporate traditional methods and techniques whenever possible. Efforts have been made to follow these guidelines and a certain degree of success has been achieved.

The Analysis also emphasized the need to incorporate women into project activities and provide them with equal access to development opportunities. Similarly, minority groups, such as pygmies, were included as a target group which should receive adequate attention from the project. Women's programs in particular have not received adequate attention due to the inability of the project to recruit a full-time female Rural Development Specialist. One Farm Center has been established in a pygmy village thus far and another is programmed to be organized during FY 81.

The various subsystems have been established in the project area and have generally followed the suggestions in the Analysis. The project has had some success in implementing various activities within the sub-systems, but these have been failures, notably in research and development. This is mentioned in Annex 3 and in more detail in the text of the revision.

The development of a self-sustaining process is still very much in the formative stages. This is particularly true in the organizational aspects of Farmer Groups and Councils. One of the inherent problems is the desire to avoid "social engineering" and try to develop structures that fit within the existing village political and social structure. Thus, while the overall organizational process is slowed somewhat, the results will be longer lasting. In summary, though project progress has lagged in several areas, there have been some significant gains in maintaining a rapport between activities to meet objectives and socio-cultural factors existing in the project area.

C. Technical Issues

The analysis of the technical aspects of this project remains more or less as originally presented. Two points that are directly related to the revised objectives and priorities of this project are (1) the production potential of the technical package being introduced by PNS and (2) the need for an adaptive farming systems approach in the PNS agricultural research programs.

Regarding the first issue, at the time that the project was originally designed, it was assumed that new seed varieties combined with improved farming practices could increase yields by 90%, and an additional 50% increase could be obtained with fertilizer. Trials on demonstration plots show a 50% increase in yields using new seeds. There have been no trials to measure the impact of new seeds combined with improved practices and no fertilizer, despite the fact that this is the basic package being recommended to farmers at the present time.

Actual results on farmer fields have been substantially below expectations. New seeds alone show an average yield increase of about 25%, and improved practices show no significant impact on yields. Although these results need to be studied further to determine their accuracy and to identify the reasons why they are so far below expectations, they imply that the technical possibilities for production increases may not be as high as originally expected. As noted in the project description, it is now assumed that the improved technical package without fertilizer will increase yields by 50%. This increase assumes that actual results to date underestimate the potential impact after farmers have had more exposure to and experience with the new seeds and improved practices.

So far, the third element in the improved technical package, fertilizer, has not been introduced on farmers' fields. Trials on demonstration plots show that fertilizer, combined with new seeds and improved practices, increases yields by 100% over improved seeds with traditional farming practices and no fertilizer. Unfortunately, since there have been no trials of new seeds with improved practices and no fertilizer, it is impossible to determine how much of the 100% increase is due to fertilizer and how much to improved practices. During the next year, the PNS program will improve the design of the fertilizer trials and increase their number, preferably under varying soil conditions. During the final two years, fertilizer trials should be studied under varying crop rotation systems and should be introduced to farmers on a pilot basis with careful monitoring of results.

The second technical issue has to do with the overall design of the research program. A major reason why the project does not have answers to the technical questions raised above is the almost total absence of adaptive farming systems research. The need for this approach to agricultural research in any small farmer production program was well covered in the original document but has proven difficult to implement under the project. It cannot be over emphasized that new production-increasing technologies cannot be introduced unless they are not only technically

but also socially and economically feasible at the farm level. This means that any maize production package introduced by PNS must fit into a farm system that includes other crops and must be consistent with the availability of labor during periods of peak activity. One problem under this project has been that relatively few farmers are adopting any of the recommended improved practices and almost none have adopted the whole package. A farming systems research activity would provide insight into the reasons for non-acceptance. Also, given the potential importance of fertilizer and the need to apply it correctly to achieve maximum benefits, it is essential that it be fully integrated into the adaptive research program.

Based on experience to date, the two main obstacles to carrying out this program are (1) the lack of a production agronomist with an interest in small-farmer production and (2) the orientation of the PNM-trained Zairian staff towards convincing farmers of the value of the PNM/CIMMYT maize package rather than testing its feasibility in the project area. Neither problem will be easy to solve. As noted elsewhere in this paper, recruitment for this project is extremely difficult. Particularly scarce are well-trained U.S. agronomists with field experience and language capability in French and Swahili. Nevertheless, an individual of this caliber will be needed to guide the PNS research and extension staff and re-orient it away from its present top-down approach to one that involves feedback from farmers and adaptations when necessary. Based on recent discussions between U.S. agricultural experts and the PNS staff, it appears that there is some understanding of the need for this kind of change but, since it has not been part of the Zairian technician's training or experience, strong guidance will be needed.

For this reason, perhaps the most important requirement for this project is the recruitment of a qualified agronomist. This more than any other single step will lead to greater progress in the adaptation and introduction of a production increasing technical package in the project area. As foreseen in the Project Paper, this was to have been a five-year task. Although considerable progress has been made in setting up a research and extension organization, the actual research is just beginning. At a minimum, the new agronomist will require three years to introduce a new research approach and to establish it firmly. A two-year period would leave so many things undone as to put in question the long-term viability of what would be left behind.

D. Administrative Issues

The major administrative issue, or more accurately, implementation issue is whether or not it will be possible to recruit a technically qualified team to live and work in North Shaba. Experience to date has not been promising. The team was originally scheduled to begin work in the spring of 1977 but in fact was not fully established in the project area until January 1978. The agronomist position was not filled until June 1978.

The technical assistance team serving since the start of PNS has been resilient and adept at coping with potentially devastating setbacks. A functioning project exists where many people had predicted that nothing could ever be accomplished. However, it certain types of technical skills, and in the capacity for knowledge transfer, the team has had obvious limitations. The main problem areas can be summarized as follows:

- The team has been deficient in the agricultural expertise needed for a sound research program;

- Skills in economic analysis have been lacking, until the recent recruitment of a Marketing/Information advisor with limited experience; and

- The Infrastructure subsystem has operated without a senior, qualified American engineer on site in the first three years.

The effect of the delays and shortcomings of the technical assistance team has been to set back the achievement of most project objectives. The major activity affected has been agricultural research and extension. As noted elsewhere, very little adaptive research has been carried out, with the result that many unknowns remain regarding the feasibility of the improved technical package on farmers' fields. In this area, the delay has been at least one year and probably more. A second, and in some ways equally important, effect of U.S. technician shortcomings has been the lack of skills transfer. The views of the Zairian staff on this subject are consistent from one subsystem to another--they feel they have received little specific, structured, on-the-job training. If the conseiller role of technical assistance advisor is solely accepted by team members, rather than combined with a training function, the long-term impact of their work will be greatly diminished.

During CY 1980, five members of the technical assistance team will be replaced. These are: The Chief of Party(COP), Agronomist, Rural Development Specialist, Infrastructure Team Leader and Mechanic. As of mid-June firm candidates had been identified for the COP and Infrastructure Team Leader Position. In addition, the Women in Development position, and a Marketing Specialist position remain to be filled. This changeover provides an opportunity to improve the team. However, as is well known by now, ideal candidates are rarely available exactly when they are needed. Often the choice appears to rest between experts close to retirement and young candidates who are unknown quantities, when the preference is for someone with some field assignments under his belt in the 35-45 age range, who simply cannot be found. The main reasons are usually related to family needs, particularly children's education, or professional needs of the individual who wishes to move from field projects to managerial or academic positions.

The most difficult position to fill is likely to be the Agronomist. French (or a capacity to learn it rapidly) is essential for knowledge transfer; solid agronomic credentials are essential for influence and credibility with the Zairois staff; and a concern for small farmer production behavior is essential for a sensible adaptive research program--now so obviously lacking. A search has been underway for several months, and it appears that PNS will be fortunate if the position is filled by September. Recruitment for the Rural Development Specialist and the Women in Development positions appears less difficult. A possible candidate for the RDS position has been identified. The woman's position will require a person with project (as opposed to solely academic) experience.

Longer lead-time is available in recruiting a full-time Advisor for the Marketing & Credit subsystem: a two-year position as advisor to the subsystem can only be justified when USAID's 025 Agriculture Marketing Loan becomes operational. The 48 grain trucks to be provided under the loan may not arrive in North Shaba until late in the 1981 marketing campaign. Thus, a tour from mid-1981 to mid-1983 seems appropriate.

Recruitment efforts for the two Infrastructure positions being vacated in August 1980 are proceeding, with a qualified civil engineer candidate being considered to fill the senior position. Both individuals must be prepared to apply themselves to learning French. PNS will attempt recruitment of a full-time language instructor (French and Swahili) to be on site in Kongolo by August.

In addition, there is the question of the adequacy of a single AID Project Manager for an undertaking as large as the North Shaba Project. Given the numerous administrative matters that must be handled on a regular and ad hoc basis, there is very little time left for the more substantive theoretical and practical issues involved with implementation. Too few visits are made to the field and insufficient "think tank" type discussions occur. Therefore, it is suggested that a two tiered Project Management team be considered - one person on the administrative side and another on the "field side" to maintain a closer relationship with activities and overall direction. This arrangement would facilitate a smoother running project, allow for more forward planning, and create a better problem anticipation/resolution capability.

Taken as a whole, there is likely to be a young team working in PNS over the next three years. There will be obvious limitations because individuals will be short on experience, and their decisions and advice will reflect this. But motivation, language skills and a commitment to training counterparts can outweigh these limitations, provided that project activities are cohesive, giving structure to each technician's assignment. To be truly effective, the team must be anchored by three key personnel whose inputs are crucial to the project: the Chief of Party, the agronomist and- the senior engineer who will coordinate Infrastructure activities.

F. Project Management Unit

The PP specified a management structure in which the U.S. chief of party would function as Deputy Project Director, with an experienced Zairois manager named as Project Director. The Assistant Director for Administration and Finance, an American, was to serve as the third member of the Project Management Unit (PMU), which was responsible for decision-making at the project level. The PMU model was adopted during the design process because of the administrative weakness and an absence of implementation capacity in the existing Department of Agriculture system in the project area.

In mid-1978, as a result of serious management difficulties encountered during project start-up, the internal organization of the project was restructured, and the U.S. chief of party was designated as Advisor to the Project Director rather Deputy Director. The PMU model was retained, however. Two additional positions were added to the technical assistance team during 1977-78 and were placed under the authority of the PMU: one was for a Project Support Officer to handle logistics, procurement and other support functions for the project in Kinshasa, and the other was for a pilot/mechanic to fly and maintain a single-engine aircraft that was purchased and assigned to the project by the GOZ Department of Agriculture.

The revised budget for FY 1981 - FY 1983 reflects: (1) the need to continue certain key support functions during the immediate future; and (2) a planned phase-out of U.S. technical assistance over this three-year period, as responsibility for project operations is transferred to the Department of Agriculture.

The Advisor/Chief of Party position will be filled until September 1983, which is the revised scheduled date for the termination of U.S. financial support to the project. As indicated in the descriptions of other sub-systems, the technical assistance team will be gradually reduced to four persons in the latter part of FY 1983.

The Assistant Director for Administration and Finance (ADAF) currently an American, will complete his contract in June 1981, at which time the post will be filled by a Zairian. The current ADAF is working closely with a Zairois counterpart who has been trained in administration and is scheduled to undergo short-term training in accounting in mid CY 1980. The pilot/mechanic position will be staffed by an American possibly until the end of CY 1982. The Project Support Officer position will be continued until September 1982, at which time it is anticipated that the Department of Agriculture will assume responsibility for the functions now performed by that office.

Other PMU inputs to be financed during the next three years include non-degree training in the U.S. and third countries, language training for new expatriate staff, four vehicles and three motorcycles, and office supplies, radio spares and plane spares. For the latter three items, provision has been made in the budget for the GOZ to assume all costs by FY 1983.

Further inputs, outside the scope of the technical services contract, include in-country cargo flights, radio maintenance expenses, passenger air charters (Kinshasa-Kongolo, three per year), and the completion of long-term training for participants from the National Maize Program (PNM) which provides some research and personnel support for the project.

Two evaluations have been tentatively scheduled and budgeted for within the PMU component. One of these is to take place in mid 1981, and the other is an end-of-project evaluation for which funds would be required during FY 1983.

IV. Budget and Financial Analysis.

A. Proposed Changes in AID Contribution.

The PP estimated grant expenses at $2,837,000 for FY's 80-82. The revised budget for an extended period (thru FY 83) is now estimated at $6,642,000. 1/. Of this amount, $3,000,000 has already been allocated in FY 1980 for the last phase of the project, but not yet obligated, and $3,634,000 is new additional funding being proposed. In addition, there are $1,400,000 in loan funds remaining which also have been programmed during the FY 80-83 period. Thus the overall total for the FY 80-83 period is $8,462,058. 2/.

The loan portion of the original PP totalled $3,500,000. Of that $2,100,000 has been expended. No additional loan funds are being requested in this revision.

While all T.A. personnel were originally scheduled to be phased out by late 1982, the needs of PNS to adequate carry out its mandate require the levels seen in Table 1 (Schedule for Technical Assistance). It was originally foreseen that the 8 person team would phase down to six full-time positions in FY 81 and five in FY 82. The revised personnel needs show 12 full-time positions through FY 81, the same number in FY 82 and 3 full-time positions in FY 83.

To the original 8 person team proposed in the PP, the following additional positions have been added: (a) intermediate technology engineer, (b) woman in rural development, (c) pilot/mechanic, (d) information/marketing position, (e) project support officer/Kinshasa, and (f) marketing and credit advisor. While the I.T. engineer position will terminate in early FY 82, a full-time marketing advisor is foreseen as the 025 loan comes on stream. Thus, while the PP foresaw a total of $1,392,000 for contractor support for FY 81 and FY 82, the revised requirements through FY 83 are $3,773,500.

Originally no replacement equipment was projected for the Infrastructure S/S and little for transportation requirements for other S/S's. To guarantee that O.R. will have the capacity to continue road and bridge work after FY 82, a minimal amount of replacement equipment has been budgeted 3/. In addition to this amount there is increased funding for spare parts due to an underestimate of requirements in the PP and longer use of equipment than originally programmed. Replacement vehicles (all diesel) are programmed throughout the FY 80-83 period to ensure that PNS activities will not be strapped or impeded immediately after U.S. assistance ends.

1/ This figure actually covers the period from March 13, 1980 through September 30, 1983. The first 5½ months of FY 80 fiscal year were financed from funds obligated for the first 3 years of project life.

2/ This total is constructed as follows:

$ 583,058	DAI Contract Oct 79-Mar 80
1,400,000	Loan Balance
2,837,000	Grant Balance
3,642,000	New Money

3/ Actually, although the total for Infrastructure is $1.7 million, in terms of new money the increase amounts to $204,000. This assumes that 60% of the required fuel can be purchased in local currency.

The amount allotted to participant training has increased from $166,000 for FY's 80-82 to $454,000 for FY's 80-83. This reflects not only the GOZ desire to increase short-term training at the expense of long-term training, but also highlights the fact that little training was done during the first three years of project life due to manpower restraints. Thus a strong emphasis will be placed on training for the Zairian staff during the FY 80-83 period.

The attached budget summary (Table 2) indicates where the increases in the grant have developed. The approved PP was for a total of $6,291,000 for a six year life of project. The current revision requests an increase of $3,634,000 for the remainder of the project, including a seventh year.

B. GOZ Financial Support

Initial support from the GOZ was timely and adequate. However, in 1978 and 1979, difficulties were encountered in getting funds released for project operations. This led to periodic personnel layoffs and an inability to purchase materials as they were available. Overall, the GOZ has eventually made funds available and, with the expected release of the 1980 Ordinary Budget this month, is basically up to date (see Table 3).

It was agreed in the original project documents that local funding would come from either the Investment Budget or Counterpart Funds. In fact, funding has derived from both. Beginning in 1980, the Investment Budget will be supplanted by the Ordinary Budget. This change is favorable to project operations as there is more assurety of annual funding from this budget. However, as a backup, the GOZ will be asked to guarantee the use of counterpart funds to cover project operations when delays are encountered with regular budget releases. This is covered in the Conditions Precedent section of this revision.

In addition, Counterpart Funds will be relied on to cover all extraordinary expenses such as for construction materials, fuel, training, and special activities. It is assumed that these costs will subside as the project progresses and in part will be picked up by other institutions such as Office des Routes.

Certainly there will be continuing problems in getting timely and adequate releases of GOZ budgeted funds. Continued vigilance and interventions by project and AID personnel will be required to ensure disbursements. The second conditions precedent call for the formation of a Financial Review Group within the Project Liaison Committee to oversee disbursements and take action when they are delayed.

Project funding requirements are expected to increase in 1981 to 5,300,000 zaires and then taper off in 1982 to 4,200,000 zaires and then level off at approximately 2,500,000 zaires thereafter. This includes funding for Office des Routes (Special Brigade) operations in the project area. With annual budgets in the 2,500,000 zaires range, it is anticipated that there will be no requirement for counterpart funding.

In conclusion, although the GOZ has eventually disbursed practically all the funding requested, the timeliness has been and will continue to be a problem. Thus, the vigilance of the Financial Review Group, in conjunction with project and AID personnel will be essential to uninterrupted project operations.

TABLE I

SCHEDULE FOR TECHNICAL ASSISTANCE

(Long-Term Personnel)

FY 81 - FY 83

	FY 81	FY 82	FY 83	
Chief of Party/Advisor to Director	-----	-----	-----	36
Asst. Director for Admin/Finance	-----	-----	-----	9
Pilot/Mechanic	-----	-----	-----	24
Project Support Officer/ Kinshasa	-----	-----	-----	24
Agronomist	-----	-----	-----	36
Intermediate Tech. Advisor	-----	-----	-----	14
Rural Development Specialist (M)	-----	-----	-----	24
Rural Development Specialist (F)	-----	-----	-----	24
Marketing & Credit Advisor	-----	-----	-----	24
Data Collection & Analysis Advisor	-----	-----	-----	27
Director Infrastructure Development	-----	-----	-----	24
Equipment Maintenance Specialist	-----	-----	-----	36
Bridges/Buildings Specialist	-----	-----	-----	24
Road Rehabilitation Specialist	-----	-----	-----	24
		Total Level of Effort =		350 person-months

TABLE 2

Project North Shaba Budget
Summary of Original and New Funding Grant

	Approved PP	Revised Amendment	Revised Total LOPC
Research/Extension			
Contract Services	815.4	223.8	1039.2
Commodities	321.6	215,4	537.0
Participants	423.6	30.0	453.6
Subtotal	1560.6	469.2	2029.8
Farmer Group			
Contract Services	443.9	229.6	673.5
Commodities	82.7	27.6	110.3
Participants	49.8	75.0	124.8
Subtotal	576.4	332.2	908.6
Intermediate Technology			
Contract Services	167.6	29.7	197.3
Commodities	209.5	18.1	227.6
Participants	36.2	8.0	44.2
Subtotal	413.3	55.8	469.1
Marketing			
Contract Services	-0-	146.6	146.6
Commodities	124.6	20.0	144.6
Participants	11.3	17.0	28.3
Subtotal	135.9	183.6	319.5
Infrastructure			
Contract Services	1603.6	921.0	2524.6
Commodities	-0-	204.0	204.0
Participants	-0-	24.0	24.0
Subtotal	1603.6	1149.0	2752.6
Monitoring/Evaluation			
Contract Services	525.5	140.5	666.0
Commodities	61.2	15.2	76.4
Participants	-0-	56.0	56.0
Subtotal	586.7	211.7	798.4

	Approved PP	Revised Amendment	Revised Total LOPC
Project Management			
Contract Services	1141.6	916.3	2057.9
Commodities	232.2	75.2	307.4
Participants	40.8	54.0	94.8
Other Costs	-0-	195.0	195.0
Subtotal:	1414.6	1240.5	2655.1
Summary			
Contract Services	4698.0	598.8	296.8
Commodities	1032.0	575.5	1607.5
Participants	561.0	264.0	825.0
Other Costs	-0-	195.0	195.0
Grant Total:	6291.0	3633.3	9924.3

TABLE 3

GOZ Financial Contributions

Year	Budgeted (Zaires)	Received (Zaires)
1977	1,500,000	1,300,000
1978	1,282,000	352,000
1979	2,700,000	1,930,000
1980(as of 31/7/80)	3,480,000	3,000,000
Totals	8,962,000	6,582,000

These funds are derived from various sources as follows:

- Investment Budget: 3,630,000 zaires budgeted and 3,230,000 zaires received to date
- Counterpart Funds: 4,152,000 zaires budgeted and 3,352,000 received to date.
- Ordinary Budget: 1,180,000 zaires budgeted and possibly released.

SUMMARY COST ESTIMATE AND FINANCIAL PLAN
(US $ 000)

PROJECT PAPER

Source	AID** FX	AID** IC	Host Country FX	Host Country IC	Other(s)+ FX	Other(s)+ IC	Total
Use*							
Technical Services	7,200			5,300			12,500
Commodities	5,200 (1)			4,100			9,300
Training	500			200			700
Other	500			-0-			500
Inflation factor	(2)						
Contingency							
TOTAL	13,400			9,600			23,000

(1) Includes $3.5 million in loan funds.

(2) A factor for inflation has been costed into inputs to be purchased during remainder of project. For expenditures during first 3 years of project, an inflation factor of 6% was used for dollar purchases.

PROJECTION OF EXPENDITURES BY FISCAL YEAR
(US $ 000)

PROJECT PAPER

Fiscal Year	AID**	Host Country	Other(s)+	Total
1977	2,517.0(1)	1765		4,284
78	1,699.0(1)	1508		3,207
79	1,336.0(1)	1250		2,586
80	850.0	1221		2,071
81	3,724.6	1667		5,391.6
82	2,607.7	1440		4,007.7
83	688.0	833		1,521
Inflation factor	(2)	(3)		
Contingency	-	-		
TOTAL	13,424.3	9644		23,068.3

(1) Includes loan funds totaling $2.1 million.
(2) For FY 77-80 an inflation factor of 6% was used. For 81-83, an inflation factor was considered in the cost of each item.
(3) For FY 77-80 an inflation factor of 13% was used in the original budget. For FY 81-83, the costs are based on currently available information. The GOZ does not allow budgeting for inflation and it is anticipated that Counterpart Funds will be available for any unusual rises in costs.

V. Implementation Plan:

A. Schedule of Critical Actions:

Many of the activities during the final three years of the project fall into the category of routine. Thus they are repeated in subsequent years and are so noted in the schedule and not repeated.

The most critical actions concern the replacement of key technicians in the project area. Among the most immediate needs is the recruitment of a qualified agronomist. As an interim measure, two TDY agronomists arrived in late July to initiate the research and extension program for the 1980 campaign. It is anticipated that a full time agronomist will be on site by September 1, 1980.

A second critical action is the establishment of the Financial Review Group within the Project Steering Committee.

The list of key actions that will need to be taken between August 1980 and the end of project are as follows:

I. General:

1. Arrival of ST Agronomists	7/26/80
2. Submission of Revised Project	7/30/80
3. Approval of Revised Project	8/20/80
4. Submission of PIO/T	8/20/80
5. Negotiation of Contract Extension	8/25/80
6. Signing of Project Agreement	8/30/80
7. Arrival of New Technicians	
- Chief of Party	9/1/80
- Agronomist	9/1/80
- RD Specialist (male)	9/1/80
- RD Specialist (female)	9/1/80
- Infrastructure Team Leader	9/1/80
- Master Mechanic	10/1/80
8. Initial Meeting of Liasion Committee	9/15/80
9. Establishment of Financial Review Recanvassed	9/15/80

II. Research/Extension Subsystem:

1.	Arrival ST Agronomist	7/26/80
2.	Arrival LT Agronomist	9/1/80
3.	Work Plan Reviewed (annual)	9/5/80
4.	Prepare for farmer-leader and extensionist training (periodic)	9/5/80
5.	Completion of Ngaba Research Station	12/1/80
6.	Review Campaign Results (annual)	4/1/81
7.	Prepare for Next Campaign (annual)	5/1/81
8.	Review Campaign Results (annual)	4/1/81
9.	Agronomist Departs	10/1/83

III. Farmer Group Development Subsystem:

1.	Arrival of RD Specialists (m & f)	9/1/80
2.	Prepare Plan of Action (annual)	10/1/80
3.	Plan for Third Country Training (periodic)	10/1/80
4.	Plan for Farmer Council Training (periodic)	2/1/81
5.	Plan for organization of New Centers (annual)	3/1/81
6.	RD Specialists Depart	10/1/82

IV. Intermediate Technology Subsystems:

1.	Village Blacksmith Training Programs Continue	10/1/81
2.	Financial Review to Determine Progress Towards Self Financing	1/15/81
3.	Continue Search for Owner/Operator of IT Program	6/1/81
4.	IT Technician Departs	12/1/81

V. Marketing/Credit Subsystem:

1.	Marketing Loan (025) Bid Awarded	7/15/80
2.	Orders Placed for Trucks	9/1/80
3.	Potential Buyers for Trucks	9/15/80
4.	Financial and Credit Plans Formulated	11/1/80
5.	Full Time Marketing Advisor Arrives	3/1/81

6.	Planning for 1981 Marketing Campaign (annual)	3/1/81
7.	Loan 025 Trucks Available	6/1/81
8.	Marketing Advisor Departs	8/1/82

VI. Infrastructure Subsystem:

1.	Change in INF Team Leader	9/1/80
2.	Change in Mechanic	10/1/80
3.	New Replacement Equipment Ordered	
4.	Completion of Ngaba Facility	12/1/80
5.	Completion of Mbuilula Housing	3/1/81
6.	New Equipment A-rives	6/1/87
7.	Road Rehabilitation Completion	
	- 265 KM by	9/1/80
	- 490 KM by	9/1/81
	- 724 KM by	9/1/82
8.	Bridge Completion	
	- 4 by	9/1/80
	- 30 by	9/1/81
	- 55 by	9/1/82
9.	INF team leader leaves	12/1/82
10.	Road and Bridge Specialists leave	10/1/82
11.	Mechanic leaves	10/1/83

VII Communications Subsystem

1.	Reorganization of subsystem into a call within PMU	8/1/80
2.	Initiate data gathering efforts for 1980-81 campaign (annual)	9/1/80
3.	Prepare preliminary report farmer income	11/1/80
4.	Prepare report on 1980-81 harvest (annual)	5/1/81
5.	Prepare for second interim evaluation by external team	6/1/81
6.	Prepare revised farmer income report	7/1/81

7. Prepare farmer income report (semi annual) 1/1/82

8. Advisor departs 4/1/83

B. EVALUATION PLAN

The revised project description call s for a strengthened information system to measure project impact. If this activity can be implemented as planned, reliable data will be available by mid 1981, two years before the scheduled termination of the project. At that time there should be an other outside evaluation to determine (1) the production and income generating impact of the project, (2) the potential for benefit growth (e.g. through fertilizer) in the project area and (3) possibility and advisability of replicating PNS with AID financing. In addressing the second issue the evaluation team shoudl consider replication within Shaba and elsewhere as well as concentrating on crops other than corn.

The evaluation team should consist of:

--Team leader (agricultural economist)

--Agronomist

--Engineer

--Rural Development Specialist

--Intermediate Technology Specialist

The period of the evaluation should be 5 to 6 weeks.

There is also an end of project evaluation which would be shceduled for August - September 1983. This would also be a 5 - 6 week effort and include a team make-up similar to that mentioned above.

It should be noted that the Communications subsystem will be renewing its efforts to provide more reliable on-going data. This will facilitate both of the proposed evaluations. More details on the activities of this subsystem are contained in section II B of this paper

C. Procurement Plan

1. Responsible Agency

All procurements for the North Shaba Project will be under the responsibility of the Zaire Mission and in particular the ARD Project Manager and the Supply Management Officer.

Coordination and liaison will be maintained with SER/COM in AID.

2. Procurement Services Agent (PSA)

The Zaire Mission will appoint the Contractor (Development Alternatives, Inc.) and Sub-contractor (Morrison-Maierle) to undertake all procurement of commodities for the project. They will each have specific individuals assigned from their offices with responsibility for all U.S. source procurement.

3. Equipment List

An equipment list has been prepared and is attached as an annex. This has been a joint effort between the Contractor, Project Staff and the AID Project Manager. Cost estimates are based on available knowledge as of 1 June 1980. These estimates take into account delivery costs and inflation. Any required waiver requirements will be reviewed and approved by the Zaire Mission and forwarded to SER/COM for their files.

The major portion of commodities will be purchased early in FY 1981. Because the project is entering the last three years of AID financing, early arrival is desired. Some commodities are scheduled for procurement in FY 1982 to provide a carry over supply of parts for Infrastructure heavy equipment.

4. Source of Procurement

The authorized source of procurements for this project is Code 941. It is anticipated that most purchases can be made in these countries and code 935 procurements will be made only if authorized by AID on a case by case basis.

5. Method of Procurement

Purchases will be made by the Contractors in accordance with AID regulations and good commercial practices.

Proprietary procurement will be utilized to the extent possible to facilitate standardization with equipment already procured and in use by the project.

6. Payment-

Payments will be made by the Contractor upon receipt of commodities at locations in the U.S. as designated by the Contractor. These payments will be periodically audited as deemed necessary by AID/W Contracts and Commodities Offices.

Reimbursement to the Contractor for commodities purchased with loan funds will be made through bank Letters of Credit established in favor of the contractor.

7. Delivery

Shipments will be handled by the Contractor on a CIF Matadi, Zaire basis. The Contractors Project Support-Officer (PSO) in Zaire handles in-country clearances and transportation from port of entry to the project site.

AID's shipping regulations will be observed. When necessary, the Zaire Missions' assistance may be requested for certain clearances.

8. Marking

Appropriate marking material will be purchased by the Contractor and used on all equipment as required by AID regulations.

9. Receipt and Utilization

Contractors logistical officer in Zaire will monitor and clear all commodity arrivals. Project management, including contractor, is responsible for receiving all commodities at the project site and monitoring utilization. The AID Project Manager coordinates and assists in the monitoring of commodity receipt and utilization.

10. Procurement Schedule

Procurement at this stage of implementation is an ongoing activity. However, the current list(Annex 5), covering the final three years of project life, will be procured as soon as possible to ensure delivery and utilization in a timely manner. Certain spare parts will be purchased in FY 1982 so as to ensure delivery just prior to the end of AID project financing as a carry-over supply for the infrastructure heavy equipment.

VI. Covenants, and Negotiating Status

1. The Project Liaison Committee will also serve as a Financial Review Group to ensure that funds approved for project operations are received in a timely manner. Any delays in releases of funds beyond one month will automatically initiate a meeting of the Project Liaison Committee. If any further delays of more than seven days are envisioned, a special ad hoc counterpart fund release will be made to cover project operations up to a 3 month period. Once the regularly scheduled funds release is made, the counterpart fund will be reimbursed.

2. Farmers in the project area can sell their agricultural products to any recognized buyer either as individuals or in groups of any size.

3. Recognized buyers of agricultural products may purchase these goods at any location and from any seller of their choosing.

4. Competition between farmers and between buyers will be based on market price competitiveness and not government issued directive.

5. The GOZ will undertake initiatives to narrow the gap between official prices at all levels and the prices that exist in certain parallel markets.(This is further explained in an annex).

6. The GOZ will strive to curtail any illegal taxing along marketing routes and at markets. An effort will be made to eliminate any unnecessary and unessential taxes on buying and selling of agricultural products.

7. There will be no sanctioned marketing monopolies in the North Shaba project area.

8. The GOZ will study and initiate action to eliminate barriers to trade in agricultural commodities between Shaba region and the Kasai/Oriental Occidental regions.

9. Quotas on the production and marketing of agricultural products in the North Shaba area will be eliminated.

10. The GOZ will take concrete measures to ensure that a minimal fertilizer imports program is initiated and in effect at the start of the CY 1982 planting season, and that supplies are programmed for and actually reach Kongolo. A minimum amount of 500 MT ought to be available for the North Shaba area on a per annum basis by that time (July - August 1982).

11. The GOZ will make every effort to ensure that PNS will be able to purchase at least 60% of its fuel supplies in local currency.

PNS EVALUATION - SUMMARY OF RECOMMENDATIONS AND STATUS

A. Research/Extension Subsystem (R/E)

Recommendations	Status
1. Move from forest to savanna agriculture using fertilizers (PES p.19)	1. Several TDY consultants have visited the project area since the evaluation. These included an agronomist/extentionist, soil scientist, plant pathologist, and entomologist. Preliminary reports have been issued. Final conclusions are pending the reports and maps being prepared by the ERTS (Earth Resources Tracking Satellite) project based on satellite imagery and aerial photos. Re-emphasis on agricultural systems and expanded determination and research effort will contribute answers to the forest/savanna and fertilizer questions.
2. Need additional Ag. Inputs (PES p.21) Introduce fertilizers in substantial quantities and immediately research various agronomic and economic questions (PES p. 32).	2. Fertilizer is considered in the PP revision (Section II B and III page 15). Data from the project area is insufficient for close analysis of fertilizer costs and benefits. An initial pilot effort is planned through 1982 to assist in developing reliable data. The FAO national fertilizer program will be continued, with inputs to be provided by the GOZ. Only minimal inputs of fertilizer can be expected from this program for North Shaba initially. This is due to the existing requirements of the FAO program and unsure supply of fertilizer. Nevertheless, some small quantities will be made available initially to insure that PNS is linked to the national program. One of the problems associated with introducing fertilizer is the current lack of government or private mechanisms to insure farmers have a continuing and timely supply.

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	The recently initiated World Bank Maize Project in Kasai Oreintal will bear watching, as they are depending on fertilizer being supplied through GOZ mechanisms.
3. Consideration of benefits from research on traditional vs. modern cultivation methods (PES p. 21 and 28).	3. Research on these questions has lagged. The PP revision refers to this (Section II B, page 14) and then elaborates on ways in which the project will address this issue.
4. Recruitment of soils analyst for short term analysis work (PES p. 21).	4. A TDY soils scientist was in the project area for a month April-May 1980. A report on his work will be forthcoming in the near future. Fortuitous timing enabled him to coordinate his efforts with the ERTS group, which will make the input from both groups much more useful. This and some of the other TDY's mentioned above will be followed up in the fall 1980, hopefully by the same individuals.
5. Introduce animal traction (Annex J).	5. No action has been taken in this area to date. A trip to other areas of Zaire, where animal traction has been experimented with, is still a possibility. However, Zairois in the project feel there will be some resistance to animal traction in North Shaba due to the absence of any historical experience and the presence of Tsetse fly.
6. Initiate training of regular extentionist to be integrated into PNS (Annex J).	6. The program of integrating west bank extensionsists has been delayed due in part to lack of adequate local funding. There also has been some resistance on the part of non-project extensionists. Reasons include these extensionists dislike for the testing system established for selection, incompatibility with the more rigid structure of PNS, the threat of being removed to another location and others. A recent study by project personnel of a similar program in another area of Zaire revealed that it may be possible to integrate regular extensionists into the project.

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The program for integration remains of concern to project management. A request has been submitted for additional zaires and when that is approved, efforts will begin on the west bank program.

7. Give priority to the training of extensionists over farmers at Ngaba and reorient farmer training so as not to interfere with the normal growing season (Annex J and K p. 9).

7. This reorientation of farmer training is still considered valid by project personnel. Some progress has been made in establishing training programs for extensionists and a few farmer leaders. Assuming that infrastructure can complete construction at the Ngaba Station during the current dry season, and that a qualified agronomist can be recruited, the training program should begin in earnest during the coming growing season.

8. Agriculture personnel must be included in COPAP (Annex K p. 8).

8. This process is continuing and will hopefully be completed by the end of the current calendar year.

9. Install a meteorological station at each sector. (Annex K p. 10).

9. The equipment for a station has arrived at Kongolo and is awaiting installation at Ngaba and two sector headquarters.

10. Make seed available to farmers every 3 years to avoid hybridization between Kasai I and local seed (Annex K p. 10). PNS should buy pure seed from PNM. (Annex K p. 10).

10. Seed can and will be made available to farmers at frequent intervals to avoid hybridization. In addition, PNS will begin multiplying first generation seed stock from PNM (National Maize Program).

B. Farmer Group Development (FGD) and Women in Development (WID).

Recommendations

Status

1. Give attention to social demands of farmer groups (PES p. 7-9)

1. Project personnel are well aware of these demands and as materials become available (such as cement), efforts will increase to meet them. At a post-evaluation meeting in October 1979, the various subsystem chiefs agreed that coordination and cooperation were essential to facilitate these efforts.

The PP revision addresses this issue in Section III page 18.

ANNEX I

2. There is a need for long-term Women in Development advisor (PES p. 20); Annex E; Annex C p.5).

2. Locating a willing candidate for this position has proven difficult. The most recent in a long line visited the project area for a month but in the end refused the position. Efforts by the contractor are continuing.

3. There is a need for additional Zairian personnel (Annex C p. 5). The GOZ immediately find and hire qualified Zairian women.

3. Since the evaluation, the project has engaged a few personnel in this subsystem, including a couple of women. Recruitment is a continuing process for all subsystems. The project will be exploring future candidates for RDG during a planned visit to the Rural Development Institute at Bukavu in mid-late July 1980.

4. More concentration on viability of cooperative efforts and also encourage Mbulula/Kongolo type coop development (Annex C, p. 6, 7; Annex M).

4. The project has recently engaged a TDY consultant to review the prospects for farmer group viability in an economic sense. His report should be completed in early July 1980.

A report is being prepared on the progress on the Mbulula/Kongolo savings and loan cooperatives. The activities of these two urban consumer oriented cooperatives were curtailed by the demonetization and have not completely rebounded.

5. Initiate 3rd country training. (Annex C, p. 6, 7).

5. Training progress have been initiated. During January-February 1980, an explanatory trip was made to three West African countries to determine training possibilities. Contacts have been made for short term programs at two institutions to commence with the fall semester.

The subsystem chief is leaving for the U.S. in July to begin studies for a masters degree in rural sociology/development.

In addition, training has been initiated in three other subsystems:

(a) three infrastructure technicians completed short-term programs in Haiti and Rotterdam;

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(b) one extensionist is currently studying small farm machinery at IITA;

(c) Three extension/agronomists are preparing to leave for courses at IITA in grain storage and maize production/farming systems;

(d) two-three technicians from the Project Monitoring subsystem are preparing to leave for a short program in Senegal.

Thus, the training effort is beginning to function and will continue. The magnitude of the program can be seen in the budget preparation (Annex 5 page).

6. Short courses should be conducted in agricultural practices for women during Aug-Sept 1979 (Annex E, p. 4)

6. The Peace Corps Volunteer (female) began some activities for women in small family gardening. She has recently departed but hopefully these efforts will be continued by the Zairian staff.

7. Design long-term training courses for female staff (Annex E, p. 4).

7. There are currently some short term programs being conducted in the project area in various facets of rural development. Longer term courses have not yet been programmed but efforts will be made to do so, not only in the project area but also in third countries.

8. Obtain waiver to purchase French mobylettes.

8. Mobylettes have been budgeted in the PP version. A waiver to purchase these from Europe will be initiated. In the meantime, a number of mobylettes have been made available from another project as an interim solution.

9. There is a need for additional vehicle support (Annex D, p. 7).

9. Additional vehicles have been budgeted in the PP version.

10. Develop warehousing/grain storage

10. Little progress has been made in this area to date. At present, two Zairian technicians are preparing to attend a Post-Harvest Engineering course at IITA. This is co-sponsored by IITA and FAO. It is anticipated that these technicians will initiate efforts to develop farm and village level grain storage programs.

11. There is a need for greater coordination with other subsystems, especially INF (Annex D, p. 8).

11. There have been some signs of progress and there is certainly a greater awareness of this need. With regard to infrastructure and the other subsystems needs for materials and supplies, a new inventory and sign in/out system seems to be working quite well.

12. Review cooperative statutes for application to farmer groups (Annex D, p. 8).

12. There is an effort being made in the GOZ to rewrite the national cooperative laws. Copies of these drafts have recently been received. They will be studied with a view towards how they apply to or affect the development of farmer groups in North Shaba.

C. Marketing and Credit (M/C)

Recommendations

1. Establish credit program for Farmer Groups to purchase trucks under Loan 025 (PES p. 19; Annex M, p. 9).

2. Establish credit funds for production and marketing (Annex M, p. 8,9,14).

Status

1. Agriculture Marketing Loan 025 is still in the bid awarding stage. The question of credit is still under discussion with SOFIDE, a development finance institution in Zaire. Indications are that farmer groups will have access to loan funds for truck purchases or possibly rentals. Details, however, are still being worked out.

2. The real needs for credit are still under study by project personnel and a TDY consultant currently in the project area. Initial assessments indicate that credit needs are not high at present due to a lack of agriculture inputs available for purchase. (See Section II B, page 23).

The project is also maintaining contact with the National Fertilizer Program for information regarding progress and problems with their limited credit program.

3. Hire a long term marketing advisor (Annex M, p. 8).

3. This position has been included in the revised budget. At present, one new U.S. technician has joined the project and is functioning in both the Communications and Marketing subsystems. Should Loan 025 be implemented, then another technician will be recruited as a full time advisor for marketing.

4. Obtain short term advisor services for credit (1 year) (PES p. 21, 22; Annex M, p. 14).

4. Project personnel feel that shorter term consultants (1-2 months per year) can adequately advise and assist the subsystem.

5. Purchase and rehabilitate used trucks from private and public sector for resale to Farmer Groups and small traders (Annex M, p. 12).

5. The PMU feels that this is not a viable alternative. There are probably not sufficient trucks of this type in convenient locations to warrant the manpower and expense of searching, negotiating purchase, and repair.

6. Establish a technical services department with equipment, tools, and an expatriate technician (Annex M, p. 13).

6. There is no need for this internally within the project. The merchants by and large have their own mechanics or access to services.

General Motors Zaire has offered to provide short term training courses to local mechanics.

7. Need four-wheel drive vehicles (Annex M, p. 13).

7. Additional vehicles have been programmed in the revised budget.

D. Intermediate Technology (IT)

Recommendations

Status

1. Develop a production schedule (Annex I, p. 2).

1. A production schedule was initially established in February 1979. The subsystem is currently updating the schedule to meet changing needs.

2. Gather information on problems regarding tools and equipment (Annex I, p. 2).

2. This is done in conjunction with the R/E, FDG, and PME subsystems (Section II B, page 26).

3. Reduce subsidies to zero by Oct. 1982 (Annex I, p. 2). Initiate transition to profitable venture (Annex I, p. 2). Consider possible ownership alternatives.

3. Subsystem personnel are continuing to work toward this goal. For costs encountered within the project there is no problem. But this will be more difficult as the subsystem has to go outside the project area for metal and lumber. Nevertheless, the goal of the subsystem over the next year remains self-sufficient.

   It is also necessary to achieve this goal in order to encourage the possible take over of this activity by a private group, organization, or individual as a profit making venture.

4. OJT for selected technicians (Annex I, p. 3).

4. While more OJT can take place in Zaire, it is generally felt that more useful experiences will be gained by the subsystem chief and his assistant from some third country training. This would include some training in research and development aspects of IT. These technicians could then provide some meaningful OJT to the blacksmiths and other technicians in the subsystem.

E. Infrastructure (INF)

Recommendations

1. Some equipment should be replaced (PES p. 21) (Annex H, p. 5)

2. Continue support until Oct. 1982 (Annex H, p. 2).

3. Prepare a plan for road and maintenance program (Annex H, p. 2).

Status

1. Provision is being made in the PP revision budget submission. Infrastructure personnel feel that, based on experience to date, a minimum replacement of 20% is required. A detailed breakdown of equipment and spares is contained in the revision (Annex 5, page)

2. An extension of the subsystem will be necessary in order to meet objectives. This has been discussed with Office des Routes (OR) and they have agreed. The existing convention with OR is being rewritten to reflect this extension.

3. A road maintenance plan has been prepared and is currently being implemented.

4. Ensure adequate support for Bgde 19 and emphasize the need for increasing cooperation/coordination between the Special Brigade and Bdg 19 (Annex H, p. 3). There is a need for an agreement preventing any decrease in the capability of Bdge 19 and the Special Brigade (Annex H, p. 3).

4. Office des Routes is well aware of its shortcomings in terms of equipment, spare parts, and technical qualifications. The project is doing whatever it can to support Brigade 19 when and if needed. For example, PNS has provided fuel at various times, and $20,000 worth of spare parts have been purchased and shipped to Kongolo.

However, there are no guarantees that GOZ support to OR will increase or decrease in the short or long term. There are serious doubts that any agreements can be drawn up to this effect regarding Brigade 19. In the case of the Special Brigade, an attempt is being made to guarantee their capability over the first year or two after AID financing ends through budget increases for equipment and spares.

5. Re-survey of raod and divide responsibilities between Bgde 19 and Special Bgde (Annex H, p. 3).

5. Road rehabilitation requirements remain essentially the same as outlined in the original PP. Some changes in priorities are being made based on increasing knowledge of known and potential agriculture producing areas. This is discussed further in the PP revision (Section II B, page 29).

Dividing responsibilities with Brigade 19 is not feasible given the deteriorated state of equipment and the fact that Brigade 19 can be moved from zone to zone depending on where regional authorities determine the current priority.

6. TDY for training (30-60 days) to work intensively with operators and repairmen.

6. This TDY has been eliminated for budgeting reasons. Infrastructure will begin to engage in more on-the-job-training through more effective use of advisory personnel.

7. Need efficiency studies (time and motion); teach techniques to middle and lower management (Annex H, p. 5).

7. Infrastructure personnel have determined that for the level of work being done, there is no need for time and motion studies.

8. Undertake recurrent studies on wage adjustments (Annex H, p. 5).

8. This is done on a regular basis. In addition, a GOZ trade union began operations in the area during the month of September 1979.

9. Review periodically health and safety policies (Annex H, p. 5)

9. This is done on a regular basis. Normal health and safety policies have always been included in the infrastructure program.

10. Use minority groups (pygmies) on road crews (Annex H, p. 5).

10. The general consensus is that they are sufficiently employed in their own and others' fields to preclude time available for road work. Nevertheless, infrastructure will consider utilizing them on road crews if the subsystem begins farm-to-village roadwork in their areas.

11. Maintain an accounting system for INF (Annex H, p. 5).

11. An accounting system has been installed for this subsystem.

12. Acquire Nyunzu Camp ASAP (Annex H, p. 5).

12. This compound was acquired in March 1980.

13. Pay greater attention to servicd demands (Annex H, p. 5).

    a. develop a policy on the extent of services internally and externally;

    b. institute systems for the management of services, internal communications; and establishing separate service accounts.

13. The overall infrastructure program and its ability to service other subsystem demands have been reviewed. An inventory check in-out system for equipment and materials has been installed. A regular system and crews for maintaining and repairing vehicles and motorcycles has been instituted. Bi-monthly staff meetings have resumed and have revitalized communications between infrastructure and the other subsystems.

14. Initiate a newsletter dealing with priorities and other information (Annex H, p. 7).

14. A newsletter is being considered, to be coordinated and published by the Project Monitoring and Evaluation subsystem.

15. Use prefabs or culverts for small bridges (Annex H, p. 8).

15. Culverts are being substituted for smaller bridges to the extent possible.

F. Project Monitoring and Evaluation (PME)

Recommendations	Status
1. Substantially increase training (in-country and third country) (PES p. 20).	1. The PMU agrees with this recommendation and increases are reflected in the revised budget. At present a program is being worked out for a short term program in Senegal during the September - October 1980 period.
2. Add a long-term full-time advisor (PES p. 20, Annex G, p. 4)	2. The PMU is in agreement with this and the new position is included in the PP revision.
3. Need to develop data (PES p. 30).	3. Adequate and reliable baseline data has not yet been generated by the subsystem. The marketing/communications (PME) subsystem advisor has begun spending a majority of his time with the PME in preparation for activities under the newly reorganized structure (as outlined in the revision, Section II B, page 27). There are also two Department of Agriculture statisticians (U.S. trained) who will be traveling to Kongolo in July. They will be there initially for two months to assist in establishing an area frame sampling system in the project area. This will provide the project with greater flexibility in data gathering.
4. Additional vehicles needed: 2 each 4-wheel drive and 3 each motorcycles (Annex G, p. 4)	4. Additional vehicles have been programmed in the revised budget.
5. Recruit a TDY consultant for communication skills training to Zairian staff for 6 months (Annex G, p. 4).	5. It is anticipated that if the advisor position is filled by a full-time technician, the need for lengthy TDY assistance will be reduced or eliminated.
6. Recruit four (4) additional Zairian technicians plus bikes (Annex G, p. 5).	6. At present there are a sufficient number of technicians in this subsystem. A new chief of this subsystem (cell) is being sought to replace the former chief who was recalled to the Department. If the area frame sampling system is established, then additional field personnel may be needed.

7. Develop an Annual Report with wide distribution (Annex G, p. 5).

7. The PME and PMU agree that this is a good idea. Normally, the June-September period is the best time to do this type of report. However, given the turnover in both Zairian and U.S. personnel, it is unlikely that a report will be prepared this year. Nevertheless, the idea remains valid and will be pursued at the earliest opportunity.

8. The subsystem chief should be more fully integrated into the management decision-making progress (Annex G, p.5).

8. The PMU feels that the role of the subsystem chiefs as advisors to the Director and their participation in staff meetings provides them with sufficient opportunity to participate in decisions regarding policies and overall operations. To bring individual subsystem chiefs into the daily decision-making process would be cumbersome and unnecessarily time consuming.

G. Project Management Unit (PMU)

Recommendations

Status

1. Establish the Steering Committee (PES p. 18; Annex A, p. 4).

1. The Secretary of State for Agriculture agreed to reformulate this committee. He suggested that its members be less than ministerial level individuals.

Unfortunately the committee has only met once since the evaluation. However, it is anticipated that the committee will be reconvened soon to discuss certain aspects of the PP revision and Project Agreement (Pro Ag) amendment.

2. Is PNS truly an IRD project (Annex A, p. 5).

2. PNS is more like a partially vertically integrated project. It was not intended to range over the whole spectrum of rural services. However, PNS personnel are aware of existing social problems and demands and will attempt to intervene where and when possible given limited material and personnel resources. Nevertheless, the main focus will remain economic growth in the area and economic viability of farmers and farmer groups.

The question arises as to what is a truly integrated rural development project. PNS is certainly integrated, but not in the sense of addressing all community needs. Nevertheless, its presence lends itself to inviting satellite activities into the area. For example, there is now a health program in the area that could eventually expand services to a wider area within the project.

3. Consider the end of project self sustaining capability of each subsystem (Annex A, p. 5).

3. Self sufficiency or self sustainability will take different forms with each subsystem. Some will revert to GOZ departments, others will simply slide into the private sector. This subject is discussed in further detail in the Institutionalization annex.

4. Formulize the Liaison Committee Annex A, p. 5).

4. This committee was formally reactivated in late 1979. Previously, much of the committee work had been performed on an informal basis by the Department of Agriculture Project Liaison Officer and the AID Project Manager. This consisted mainly of maintaining contact with the various offices involved with PNS activities. The reactivated committee member roster is somewhat different from that proposed in the original PP. Some offices have ceased to exist and others have been substituted. The new committee consists of the following:

Department of Agriculture
Commissariat General au Plan
Department of Finance
Office des Routes
USAID

5. Extend the basis of PMU and more clearly define the decision-making process (Annex A, p. 6).

5. Bi-weekly coordinating meetings are being held on a regular basi It is at these meetings where subsystem chiefs can make their inputs into policy decisions. However, it is the Director who ultimately makes decisions based on information and advice provided by the subsystem chiefs. For more routine types of decisions, areas of reponsibility and authority are being more clearly defined so as to push more of these decisions to lower levels.

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6. Establish hiring guidelines (Annex A, p. 6, 7).

6. GOZ regulations govern these policies. Where there are gaps, the PMU has developed internal guidelines. The overall policy is to hire Zairians as much as possible and train them to replace U.S. technicians as soon as possible.

7. Establish a training policy and guidelines (Annex A, p. 7).

7. (See No. 6 above). Programs are being prepared by various subsystems to initiate external training programs in 1980. Programs have existed within the project since July 1978, have continued, and will be expanded in 1980 and subsequent years. The details of this program are reflected in the revised PP budget.

8. Hire 2 not 1 advisor for MC and PME (PES p. 22; Annex A, p. 7).

8. The PMU agrees and the two positions are provided in the revised budget being prepared. This will depend in large part on whether the Loan 025 Marketing Project gets underway.

9. Review relations with local traders and authorities (Annex A, p. 7).

9. PNS relations with local traders and GOZ authorities have been excellent since the beginning of the project. What is referred to here is the feeling that maybe PNS was becoming too clesely associated with some merchants. Initially it was absolutely necessary to establish and maintain these relations. There remain good relations and some collaboration with some local merchants. However, project personnel are sensitive to the possibility of criticism steming from these relationships and will proceed accordingly in the future.

10. Establish a daily accounting system to keep track of expenditures by item and subsystem (Annex F p. 2, 3).

10. A system has been installed.

11. Recalculate project costs in light of inflation (Z and US) (Annex F, p. 3).

11. This has been done in the revised dollar and zaire budget to the extent possible.

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12. Establish an accounting system compatible with the GOZ system (Annex F, p. 3).

12. PNS already has an accounting system that conforms to the GOZ/DOA system.

13. Establish a financial system to administer, use, and control finances at the level of D/Plan, D/Agri, and USAID (Annex F, p. 3).

13. A new system is in place which separates out the ~~three~~ three sources of zaire financing (Regular, Investment, Counterpart) and provides a better daily journal system.

H. Miscellaneous Points

Recommendations

1. Conduct the next evaluation in 18 months (Jan '81) and develop suggestions for makeup and organization of team (PES p. 2,3).

2. Consider the need for multiple sources of funding in zaires (PES p. 11).

Status

1. January was suggested as a possible date for the next evaluation. The DAI/MM team suggested mid 1982. Mission feeling is that mid 1981 may be a more appropriate time. Any changes suggested at this time could still be carried out before the end of the project.

2. Multiple sources of funding may be necessary to account for unforseen and underestimated expenses. Project financing was transferred from the Investment Budget to the Ordinary Budget in 1980. This will cover recurring costs such as salaries, office and logistical supplies, maintenance, ETC. However, for more extraordinary expenses such as construction, major purchase some in-country transportation, some fuel, etc, Counterpart funds will have to be used.

There is also a need to include an agreement whereby counterpart funds are made available on an advance basis when ordinary budget releases are late. This is elaborated in the Conditions Precedent annex.

3. PNS should purchase and market small portion of small farmers' production (20.4 p. 41) (PES p. 41; Annex M).

ARD: 17 July 1980/mm

3. Based on a letter received from the Secretary of State for Agriculture, PNS was actively involved in marketing maize in late 1979. This was necessitated by the lateness of the marketing campaign (due to the floods) and the inability of local merchants to market all of the available maize. Unless circumstances dictate to the contrary, this will have been a one time endeavor. In the future, the project will only assis merchants and farmers with advice, guidance, truck rentals and with 025 materials and equipment.

LOG FRAME

SUB-SECTOR

GOAL: Achieve self-sufficiency in maize production.

OVI: I. Net increase of 120% in quantity of marketed maize the Kongolo and Nyunzu Zones within 6 years. Total Kongolo/Nyunzu production increase of maize from 27,000 MT, total annual production in 1978 to est. 49,000 MT, total annual production in 1983.

MOV: 1. Project records.

2. Department of Agriculture records.

ASSUMPTIONS: Higher order objectives and other long-term benefits:

1. Improved economic and social conditions for rural population.
2. Improved balance of payments.

PURPOSE:

To increase the net income of small farmers in the project area by 75% by the end of the project as a result of raising corn production from 27,000 MT (1978) to 49,000 MT; (1983) and to develop a rural development process in the form of a model that is replicable in other parts of Zaire.

END OF PROJECT STATUS:

1. Annual maize marketed in North Shaba project area from 11,000 tons in 1978 to 25,000 tons in 1983.
2. Maize marketed in project area continues to increase at rate of 10% per year thru 1986.
3. Marketing of manioc, peanuts, rice and palm oil increases by 20% between 1978 and 1983.

4. Net income of small farmers participating in the project for 3 years or more will increase by 75% - from an average in the 2 project zones of $385 in 1978-79 to dollars 675 by end of the project.

MEANS OF VERIFICATION:

1. Information system.

2. DOA records from zonal agriculture chiefs.

3. Information system.

4. Information system.

PURPOSE TO GOAL ASSUMPTIONS:

1. GOZ perceives benefits from prcject and gives full support (budget, personnel, etc.) to expanded rural development programs.

2. Replicability fo rural development process demonstrated by implementation of similar projects in other parts of the country by the GOZ and other donors.

OUTPUTS:

1. Maize and other crop technologies developed to suit project area.

   a. Best crop technologies currently used in project area identified by 6/81.

   b. New technologies suitable for project area (not dependent on imported ag inputs) identified by 6/82.

   c. New technologies suitable for project area (dependent on imported ag inputs -- e.g., mechanized equipment, hybrid seed, fertilizer, insecticides) identified by 9/82.

   d. All technologies accepted as suitable only after successful experimentation on farmers' own fields (applied research).

e. Research operation fully under GOZ control and supervision (for continued operation at end of project (GOZ capability developed by project and tested by expatriate research director before termination).

2. Improved technologies extended to local farmers.

a. 75 Agricultural Assistants, 20 middle-level extension staff, 4 senior level extension staff trainined and operational by 9/82.

b. 75 Farmers' Council Leaders receive para-professional training in agriculture by 9/82.

c. 2,500 small farmer participants adopt new seed technology by 12/79; 12,000 each by 12/83.

d. 3,000 small farmer participants adopt extended new (non-imported ag inputs) technologies by 12/81; 6,000 each by 12/83.

e. 15,000 small farmer participants show change in agricultural techniques by 1986.

3. Viable Farmers' Councils developed.

a. Farmers' Councils and sub-councils initiated: 10 by 9/79; 15 by 9/80; 20 by 9/81; 25 by 9/82.

b. 50 percent of Farmers' Councils engaged in viable economic activities, that include some support of the agricultural extensionist, as well as Council activities, by 9/83.

c. Small Farmer Groups (below Farmers' Council level) formed and carrying out economic production and processing activities: 10 by 9/79; 15 by 9/80; 25 by 9/81; 40 by 9/82; 60 by 9/83.

d. 25% of Farmers' Councils have sub-councils for women.

4. Intermediate technology production and maintenance capacity developed.

a. 40 village blacksmiths trained in intermediate technology production and maintenance techniques by January 1979; 80 by end of project.

b. Trainees make their own tools to take back to their villages.

c. A production capacity developed in urban areas (Kongolo/Nyunzu/Mbulula) for sustained production of technologies too sophisticated for village-level production. Heavy intermediate technology production equipment belonging to the project is transferred (or sold) to local private enterprises (if production viability is indicated). All by end of project.

d. A project intermediate technology production/training center producing supply of intermediate technology equipment sufficient to meet pre-coop demand until the end of the project.

e. Intermediate technology equipment not produceable (but maintainable) in project area distributed in project area through farmer councils.

5. Roads (secondary and farm feeder roads) and bridges rehabilitated. Rehabilitation completed as follows:

	Project Year				
	79	80	81	82	TOTAL
KMS. Secondary Roads	40	225	225	234	724
No. of Bridges	1	11	18	25	55

6. Project area marketing capacity expanded:

   a. Number of merchants with viable operations in project area increases 20% per year 1980-1983.

   b. Loading facilities at Nyunzu and Kongolo railyards can meet full cash crop production needs of project area through 1983.

   c. Private sector marketing operation expanded to handle full cash crop production surpluses of project area through 1983.

   d. Private sector marketing enterprises judged by project marketing director as financially sound for continued operation after completion of project.

7. Information system developed and functioning. Information system provides information in a timely manner adequate to meet decision-making needs for decision-makers at following levels: farmer, pre-coop, extension worker, researcher, IT village enterprise merchant, project management, local and national GOZ orgs. (e.g., sub-regional) authorities, DOA, office of Pres.) external market and suppliers, USAID.

8. Integrated Department of Agriculture program developed for post-project operations in Nyunzu and Kongolo Zones.

   a. Sufficient number of Zairians trained to undertake DOA operations in project zones.

   b. DOA program developed for post-project operations integrates agricultural support activities (research, extension, road maintenance, marketing, information system).

9. Model organizational structure developed for Department of Agriculture to carry out rural development process within other zones.

MEANS OF VERIFICATION:

1. a. Information system
   b. Information system
   c. Information system
   d. Information system
   e. Report of Expatriate Research Director
2. a. Information system
   b. Information system
   c. Information system
   d. Special survey
3. a. Information system
   b. Information system
   c. Information system
4. a. Information system
   b. Information system
   c. Report by Intermediate Technology Director
   d. Information system
   e. Information system
5. Quarterly reports by Construction Management Specialist.
6. a. Information system
   b. Special study by Marketing Director
   c. Information system
   d. Special study by Marketing Director

7. Special studies by evaluation teams

8. a. Information system

b. Final Evaluation Report

9. Information system

OUTPUT TO PURPOSE ASSUMPTIONS:

1. Price structure for maize is maintained at level that allows maize to remain competitive in production with other crops; and that allows an adequate profit margin for grain merchants and millers.

2. Incentives exist for farmers to want to increase income through increased agricultural production (consumer goods available, access to education, etc.).

3. Office des Routes continues primary and secondary road maintenance program after project terminates.

4. Local government officials do not implement obligatory public works that impinge upon agricultural production activities, production quotas, or tax disincentives to marketing.

5. Department of Agriculture operations in project area subsequent to project termination continue to support farmer councils thru national cooperative organizations within GOZ/DOA-RD.

6. Cost of basic necessities does not increase at a rate so much greater than the farm gate prices so as to discourage surplus production of food crops.

7. Adequate fuel supply for private sector continues after project termination.

INPUTS: (ACTIVITIES)

1. a. Identify best existing agricultural practices in project area.

   b. Experiment with new technologies at research center and Farmer Centers.

   c. Test new technologies in farmers' fields.

2. a. Select and train at least 75 extension workers from DOA staff and local population.

   b. Select 75 farmer centers as extension targets.

   c. Develop extension worker/farmer rapport, set up demonstration plots, communicate new technologies and market info to farmers.

   d. Update extension worker knowledge of technologies from research center.

3. a. Identify at least 75 farmer groups or potential groupings for pre-ccop development.

   b. Establish at least 25 Farmer Councils and facilitate selection of members.

   c. Select, in collaboration with Farmer Councils, and train up to 15 para-professional agricultural assistants.

   d. Work in collaboration with and train at least 25 council presidents.

   e. Promote farmer group activities.

4. a. Distribute (sell) through Farmers' Councils improved intermediate technology.

   b. Identify existing technologies with utility in project area.

   c. Set up intermediate technology production/training facility.

   d. Select at least 75 trainees from project fillages.

   e. Train in production and maintenance of IT.

   f. Test new technologies in project villages.

g. Identify and develop additional technologies as needed.

5. a. Provide support to Brigade 19 of OR.

b. Mobilize special Brigade/construct project facilities.

c. Rehabilitate secondary roads and bridges.

d. Improve farm roads with manual road teams.

e. Organize an on-going road and bridge maintenance system.

6. a. Facilitate merchant access to inputs such as fuel and sacks.

b. Provide at least 15 merchants with access to transport equipment through Marketing Loand 025.

c. Facilitate merchant/farmer and merchant/mill communications.

7. a. Train 4 senior Zairois PME staff and 6 extension workers.

b. Conduct baseline survey.

c. Set up internal project communications system.

d. Collect data, analyze data, communicate info as needed for decision-making (for continuous monitoring and periodic evaluation).

8. a. Draw information from PME on successful project methodologies for GOZ intervention in the agricultural sector.

b. Develop program for Department of Agriculture post-project operations in collaboration with DOA officials.

c. Train DOA officials (counterpart on-the-job training) for post project operations.

(RESOURCES)

	Contract Services	Commodities	Parti-pants	Other	Total
1. Research/Extension	$1,039,200	$ 537,000	$ 453,600	-0-	$ 2,029,800
2. Farmer Group Dev.	673,500	110,300	124,800	-0-	908,600
3. Intermediate Tech.	197,300	227,600	44,200	-0-	469,100
4. Marketing & Credit	146,600	144,600	28,300	-0-	319,500
5. Infrastructure Dev.	2,524,600	3,704,000	24,000	-0-	6,252,600
6. Monitoring & Eval.	666,000	76,400	56,000	-0-	798,400
7. Project Management Unit	2,057,900	307,400	94,800	$195,000	2,655,100
Total (inflated)	$7,305,100	$ 5,107,300	$ 825,700	$195,000	$13,433,100

Input to Output Assumptions:

1. The GOZ/DOA will establish a definitive supportive policy regarding the importation of advanced agricultural inputs (fertilizer, pesticides, etc.) for food crop production by small farmers.

2. Small farmers will cooperate with extension personnel on data collection activities.

3. Small farmers will accept applied research experimentation on portions of their own fields.

4. Small farmers will cooperate in selecting qualified local people who will work as Agricultural Assistants.

5. Small farmers will cooperate in the development and operation of farmer groups and Farmers' Councils.

6. Village elders will accept leadership position and operational responsibilities for Farmers' Councils.

7. Fuel for project (Special Brigade and Brigade 19, other) purchased with project FX or local currency can be delivered to project.

8. Project equipment and materials can be delivered to project area without serious loss or damage.

9. Office des Routes' staff seconded to project are qualified to handle assigned tasks, given external and on-the-job training.

10. Office des Routes Brigade 19 can rehabilitate primary roads to planned standards before end of projects.

11. Small farmers will continue to provide self-help labor to construct and maintain farm access roads.

12. Project trucks rented to merchants will not incur theft or improper use.

13. Fuel for private sector marketing will be available in sufficient quantity to allow for full-scale operation.

14. Lubumbashi mills will not have prolonged breakdowns/can obtain spare parts when needed.

15. Lubumbashi mills will continue to make sacks available to merchants at reasonable cost.

16. Theft of agricultural produce transported by rail will not increase more than 10% over 1976 level.

17. Merchants can continue to made sufficient profit from marketing corn that they will not be lured away into other commercial activities (as a function of GOZ pricing policies).

18. GOZ can coordinate price setting so that price changes respond directly (and in timely manner) to market needs.

19. Local maize maintains competitive advantage over imported maize.

20. SNCZ capable and willing to transport all exportable agricultural products from project area.

ANNEX 3

Social Soundness Analysis

1. Overview

In general the basic tenets of the original Social Soundness Analysis remain valid. Experience and further studies in the project area have resulted in a few adjustments in activities and implementation.

The following comments are intended to serve as an update of the critical socio-cultural factors in the implementation process. Comments are keyed to points raised in the original document. To facilitate reference to these points, the same headings are used here as in the original document.

2. Critical Socio-Cultural Factors in Project Implementation

a. Avoiding Major Pitfalls of Current Statal and Parastatal Organizations in Area

(1) Project personnel have a good record to date of gettingrout. working and staying in rural villages. Training within the project has been an integral part of the implementation process. This has included an "awareness" aspect which encourages frequent contact at the village level. Training sessions have not been held as frequently as desired, but it is envisioned that these efforts will be increased during the remaining 3 years of project life.

(2) To theeextent possible, extensionists are being recruited locally. When necessary, local personnel are given additional training so as to qualify for these positions.

(3) The Project Management Unit was created to administer project funds and resources. This arrangement has been satisfactory to date, although adjustments are made periodically to ensure a smoother functioning, more responsive unit.

(4) Project personnel have in general been active in getting out to rural areas (see 1 above). Given the structure of the project, some subsystems are more active than others. Now that many of the initial implementation activities are subsiding, it is anticipated that more time will be spend in rural village areas by all personnel (U.S. and Zairian).

(5) Personnel performance is a frequent topic of discussion within the Project Management Unit. Inherent difficulties in removing unsatisfactory personnel have delayed some actions to this end. However, in a couple of instances, other means presented themselves in facilitating removal of personnel. The very encouraging dialogue which has been established between farmer groups and project personnel has resulted in the transfer or removal of a few village level extensionists.

b. Assuring Effectiveness of Personnel in the Project Area

(1) Expatriate personnel have a mixed record with regard to language and communications with rural farmers. The overall language capability during the first 3 years was less than anticipated . However, in

critical areas, where contact with farmers and officials was most pronounced, language capabilities among concerned individuals was excellent. It is anticipated thatthe next generation of expatriate personnel will have greater overall language capability.

(2) Project personnel have adjusted very well to cultural differences in the project area.

(3) For the most part, the subordinate relationship of the extensionists to the farmers council has worked out satisfactorily.

(4) To date, no extensionists have been assigned to their own villages although they may be in the same general area. This seems to be the most feasible arrangement at present; however, the project is remaining flexible on this point.

c. Creating an Effective Research Extension Program

Most of the points in this section remain valid. Some have been addressed during the first phase of project implementation. But there are several that have not for various reasons. The project has been at fault in some cases and in others it has simply been a case of insufficient time and resources.

d. Developing a Marketing System Appropriate to Farmer Needs

The project has had a limited but significant impact on marketing in the project area. This has mainly concerned intermediary-type assistance to merchants with regard to fuel, sacks, and truck rental. A separate marketing loan will probably come on stream next year making trucks available for sale on credit.

Pricing is a continuing problem area and will be the subject of ongoing studies by project personnel.

The question of credit to farmer groups and individual farmers will be addressed through the marketing loan mentioned above. These points are more thoroughly discussed in the revision text.

e. Encouraging the Development of Farmer Groups

This subsystem has been instrumental in developing a number of smaller groups within the Farmer Center context. These are discussed in Part 3 of this Social Soundness Section.

The project has been successful in avoiding manipulation as regards allocations of Farm Centers. Consideration has been given to farmers and village leaders advice as to where Farm Centers ought to be located. This advice is used in combination with economic and production information to determine Farm Center locations.

The organization of Farmer Councils has been largely done within the context of the existing village systems. A great deal of patience, study, and discussion were involved in determining the most effective approach to the organization of Farmer Centers and then Farmer Councils. This has been reflected in the greater facility with which later Centers were formed in contrast with the mixed success in the beginning.

The question of equitable distribution of resources has not been a problem as there have very few resources to distribute. In terms of seed and tool sales, this has been done through the councils with a large degree of success to-date.

As mentioned elsewhere, extensionists and animateurs are working with smaller groupings within the Farm Centers, primarily involving economic activities.

(f) Introducing and Integrating Intermediate Technology into the Socio-Economic System.

The activities of this subsystem have been addressed elsewhere. With regard to training of village blacksmiths and their return to the village, the project has experienced no problems.

The storage program has been shifted out of the IT subsystem and is now under the Research/Extension and Farmer Group subsystem. The project will consider incorporating local methods into this program, which will get underway this year. Two Zairian technicians are currently studying storage techniques at a joint FAO/IITA course in Ibadan, Nigeria.

The hand processing machinery being produced by this subsytem is available ~~for purchase by area women. While their participation in the program is~~ satisfactory, greater benefits will be derived if the project can recruit a female RD Specialist to work with project area women.

(g) Being Reponsive to Local Social Conditions in Implementing Infrastructure Rehabilitation Activities

Some manual road work was begun prior to the arrival of the heavy equipment but did did not result in a significant improvement in road conditions or marketing of agricultureal products.

~~In summary,~~ The project is aware of the potential problems involved in engaging road crews and is making every effort to avoid these pitfalls.

(h) Involving Women Significantly and Equitably in the Development Process

The remarks contained in the original PP have in general been borne out through experience over the first 3 years of project implementation. However, given this information, the project has been unable to adequately address the question of women in development due to an inability to recruit a full-time female Rural Development Specialist. There have been sporadic activities through which local women have shown keen

interest in becoming involved in various aspects of the development process, particularly where it involves as economic return (production techniques, processing equipment) or a social benefit (water sources). Unless a female RD specialist can be found however, the existing cultural situation will preclude female participation in many project~~s~~ activities.

(i) Assuring Equal Opportunity for Minority Groups

Project activities in Pygmy areas have been initiated but at a slower pace than anticipated in the original PP. One farmer center has been ~~established in a Pygmy village.~~ The lag in establishing additional Pygmy farm centers has been due mainly to their general inaccessibility and the overall delays in project start-up. Nevertheless, project management is attuned to their needs and has included their development in short and long range planning.

(j) Protecting Human Rights and Further Consideration in Obtaining, Analyzing and Transferring Data.

Project management has gone to great lengths to avoid the pitfalls mentioned in the original ~~PP~~ Document as regards data gathering. Questionnaires and methodology have been revised more than once based on experiences gained in the field. In fact, a recurring problem of measuring progress stems from the sensitivity to farmers feelings about information gatherers which resulted in ~~and that is~~ the absence of pre-project baseline data gathering.

The system for information feed-back between the farmer and project management in functioning more informally than formally. The ~~recently~~ recently hired technician for the Marketing and Communications subsystems is currently working almost full time to revise and upgrade the operations of the Communications subsystem.

(k) Ensuring that the Process of Development Becomes Self-Sustaining

(1) Project personnel are very much aware of the paternalistic legacy of the colonial period and are having some success in overcoming attitudes. This is reflected in the many positions of responsibility held by Zairians in the project; by the occassional unsolicited free labor assistance provided for roadwork; and by the eagerness of villagers to construct water sources with limited inputs from the project (technical advice and cement supplies which villagers pay for)

(2) Development of farmer financial and technical skills has not yet been initiated to any extent. An effort is being made in the town's of ~~Maululo~~ Mbulula and Kongolo through the development of 2 savings and loan cooperatives. A few Zairians are learning about the financial management of these cooperatives. It is hoped that these learning experiences can be carried over to the village level farm groups in the near future.

(3) Credit is addressed in the text of the revision. In short, there is no immediate need, although credit will be part of the Agriculture Marketing Loan (025), which includes sales of trucks to area merchants. Fertilizer is also discussed in the text of the revision. The points made in the original document ~~re~~ regarding questionable economics of use and ~~regular~~ the possibility of irregular supplies are still valid.

(4) The question of subsidies has been discussed but is not mentioned in the revision. As a general rule, subsidies are not a valid solution to production problems. In Zaires case, where the government is caught in an inflationary situation and with a growing urban population (including the mining areas), ~~but essential segment of the population (urban)~~, pricing

policies favor the urban consumer. Thus, the possibility exists for subsidizing fertilizer to farmers so as to increase output and total revenue but not unit prices. This question needs to be studied further and then presented for discussion at a later date.

(5) Farm records are being kept by participating farmers. With the assistance of the extensionists, individual farmers are developing a body of potentially very useful data for themselves and the project. Farmers maintain the journals themselves and information from them is summarized periodically by ~~the~~ project extensionist.

(6) Organizational and financial skills training within the Farmer Groups is not a fully functioning activity as yet. This will hopefully accelerate as Farmer Groups move more towards economic type activities. The system of Farmer Groups paying extensionists (agricultural assistants) has not yet been introduced. It is anticipated that during FY 81 this idea will receive more active consideration and perhaps be initiated in 1 or 2 Farm Centers.

(7) Project technicians (expatriate) life and work styles have in general been exemplary and in concert with Zairian counterpart standards. The expatriates have also maintained an expenditure level very much in line with the local pricing structure. These are important points and recognized as such by the ex-pat technicians and will therefore be adhered to the extent possible.

(1) Taking Account of Socio-Cultural Context - Summary

(1) Project personnel - both Zairian and American - have developed a keen awareness of the various socio-cultural factors in the project area. Consideration has often been given, for example, to the variations in farming and social systems throughout the project area. (The Blakely Report was one effort at gaining a better understanding of these variations and how to deal with them).

(2) There has been adequate flexibility exhibited by project personnel in the implementation process to date. The current revision represents continuing flexibility to redress several activities that have proven difficult to implement or were simply the wrong approach.

(3) Project technicians have been very keen to avoid any semblance of social engineering. This is possibly one factor in why progress with organizing farmer group activities has been slower than expected. This process of "synthesizing innovations" will indeed lead to more "healthy" farmer groups if it is worked out from within the groups rather than from without by project personnel.

(4) The project has been preparing for initiating farmer—leader training sessions at the Ngaba research station. A couple of sessions have been held, but were more on a pilot basis. These farmer-leader training sessions will attempt to address the question of "thinking through the consequences of adopting modern technology". It is hoped that the dialogue generated at these sessions will adequately explore these questions and develope an awareness of the benefits and problems of modern technology.

3. Social Consequence and Benefits Incidence

a. The system ~~face~~ for hiring road crews (as described in the original document) is functioning with minimal problems.

b. There has been no noticeable immigration to rural areas as yet, but there has been a significant increase in urban activity in the project area. From a virtual "ghost town" atmosphere in 1976, Kongolo and ~~Nymyu~~ Nyunzu have developed into very active centers of commerce.

c. The identification of improved practices and technology has lagged. This is discussed in more detail in the text of the revision. There has been some dissemination of improved production techniques. ~~but~~ These were not developed from within the project, but rather from the National Maize Program research efforts.

d. The development of product processing machinery has progressed satisfactorily. Several dozen machines are currently in operation at the village level. There have been some quality control problems but the Intermediate Technology subsystem has been working to correct these problems with the villagers. At this point, there is no measurable affect on womens' time available for other activities concerned with production or other aspects of the project.

e. The inability of the proejct to recruit a female RD Specialist has precluded the development of womens activities in the project area. This is discussed elsewhere in ~~the PP~~ this revision.

f. Groups being formed through project efforts are generally on a small scale such as discussed in the orginial document. Within ~~the same~~ some village level farmer groups, there are a few smaller groupings being formed around specific activities. These include ~~from~~ jointly owning and operating an oil press, and jointly, with [illegible] soap making. The

The frequent contact currently maintained between the farmer groups and project personnel should preclude 'over centralization and misuses of resources".

g. Project personnel have been very sensitive to protecting the rights of privacy as regards ~~to~~ the collection and use of data. This is discussed elsewhere in the revision.

h.. As mentioned elsewhere, the project is attempting to address the problems of development as they relate to the Pygmy population. These efforts will continue.

Annex 4

PNS BUDGET SUMMARY FY 81 THRU FY 83

SUBSYSTEM	1981		1982		1983		TOTAL	
	PP	NEW	PP	NEW	PP	NEW	PP	NEW
R & E								
TOTAL	270	409.2	218	266.9	0	180.1	488	876.2
CS	151	168.8	161	131.0	0	131.0	312	430.8
COM	80	210.4	16	115.9	0	49.1	96	375.4
PART	39	50.0	41	20.0	0	0	80	70.0
OTHER	0	0	0	0	0	0	0	0
FGD								
TOTAL	14	369.9	11	289.5	0	16.8	25	676.7
CS	0	228.4	0	228.4	0	16.8	0	473.6
COM	6	61.5	3	26.1	0	0	9	87.6
PART	8	80.0	8	35.0	0	0	16	115.0
OTHER	0	0	0	0	0	0	0	0
INTER TECH								
TOTAL	28	175.5	1	27.3	0	0	29	202.8
CS	25	118.4	0	18.3	0	0	25	136.7
COM	3	48.1	1	0	0	0	4	48.1
PART	0	9.0	0	9.0	0	0	0	18.0
OTHER	0	0	0	0	0	0	0	0
MKTG & ORD								
TOTAL	4	147.8	4	137.8	0	55.0	8	340.6
CS	0	71.8	0	126.8	0	55.0	0	253.6
COM	4	50.0	4	0	0	0	8	50.0
PART	0	26.0	0	11.0	0	0	0	37.0
OTHER	0	0	0	0	0	0	0	0
INFRASTRUCTURE								
TOTAL	297	1632.0	134	1162,0	0	132.0	431	2926.0
CS	297	498.0	134	498.0	0	132.0	431	1128.0
COM	0	1121.4	0	645.0	0	0	0	1767.0
PART	0	12.0	0	12.0	0	0	0	24.0
OTHER	0	0	0	0	0	0	0	0
COMMUNICATIONS								
TOTAL	102	193.2	110	158.0	0	27.5	212	378.7
CS	101	110.0	107	110.0	0	27.5	208	247.5
COM	1	35.2	3	0	0	0	4	35.2
PART	0	48.0	0	48.0	0	0	0	96.0
OTHER	0	0	0	0	0	0	0	0

Annex 4

SUBSYSTEM	1981		1982		1983		TOTAL	
	PP	NEW	PP	NEW	PP	NEW	PP	NEW
PMU								
TOTAL	247	677.7	220	573.2	0	276.6	467	1527.5
CS	202	436.1	214	433.6	0	233.6	416	1103.3
COM	45	72.6	6	62.6	0	0	51	135.2
PART	0	55.0	0	33.0	0	6.0	0	94.0
OTHER	0	114.0	1	44.0	0	37.0	0	195.0
TOTAL PROJECT								
TOTAL	962	3625.6	688	2607.7	0	688.0	1660	7027.3
CS	776	1631.5	616	1546.1	0	595.9	1392	3873.5
COM	139	1599.1	33	849.6	0	49.1	172	2497.8
PART	47	280.0	49	168.0	0	6.0	96	454.0
OTHER	0	114.0	0	44.0	0	37.0	0	195.0

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BUDGET DETAILS BY SUBSYSTEM

RESEARCH AND EXTENSION

		1981	1982	1983	TOTAL
A.	TECHNICAL ASSISTANCE				
	1. Long-Term Personnel Agronomist	110.0	110.0	110.0	330.0
	2. TDY				
	Soils	12.6	0	0	12.6
	Pathologist	8.4	0	0	8.4
	Entomologist	8.4	0	0	8.4
	Extensionist	16.8	8.4	8.4	33.6
	Other	12.6	12.6	12.6	37.8
	Sub-Total, TDY	58.8	21.0	21.0	100.8
	Sub-Total, Technical Assistance:	168.8	131.0	131.0	430.8
B.	TRAINING				
	1. Third Country	45.0	15.0	0	60.0
	2. Seminars	5.0	5.0	0	10.0
	Sub-Total, Training:	50.0	20.0	0	70.0
C.	COMMODITIES				
	1. Vehicles				
	a. 4 X 4 Diesel (4)	34.2	34.2	0	68.4
	b. Motorcycles (13)	14.0	6.2	0	20.2
	c. Truck (4 ton)	30.0	0	0	30.0
	d. Maintenance	12.7	12.0	0	24.7
	e. Tractor spares	1.3	1.3	0	2.6
	Sub-Total, Vehicles	92.2	53.7	0	145.9
	2. Equipment				
	a. Research station	20.0	10.0	0	30.0
	a. Water Pump				
	b. Shop Equipment				
	c. Diesel Generator				
	d. Miscellaneous				
	b. Seed building	2.6	0	0	2.6
	Sub-Total, Equipment	22.6	10.0	0	32.6

	1981	1982	1983	TOTAL
3. Materials				
a. Training	3.4	0	0	3.4
b. Agric. Supplies	40.0	0	0	40.0
a. Gas Welder b. Electric Welder (Diesel - Portable) c. Horizontal lathe				
c. Seed	1.5	1.5	1.0	4.0
d. Fertilizer	39.0	39.0	39.0	117.0
e. Chemicals	11.7	11.7	9.1	32.5
Sub-Total, Materials	95.6	52.2	49.1	196.9
Sub-Total, Commodities	210.4	115.9	49.1	375.4
Total, Research & Extension (A + B + C)	429.2	266.9	180.1	876.2

FARMER GROUP DEVELOPMENT

	1981	1982	1983	TOTAL
A. TECHNICAL ASSISTANCE				
1. Long-Term Personnel				
Rural Dev. Specialist (M)	110.0	110.0	0	220.0
Rural Dev. Specialist (F)	110.0	110.0	0	220.0
2. TDY				
Coops Specialist	8.4	8.4	16.8	33.6
Sub-Total, TA	228.4	228.4	16.8	473.6
B. TRAINING				
1. U.S.	45.0	0	0	45.0
2. Third Country	30.0	30.0	0	60.0
3. Training in-country	5.0	5.0	0	10.0
Sub-Total, Training	80.0	35.0	0	115.0
C. COMMODITIES				
1. Vehicles				
a. 4 X 4 Diesel (2)	17.2	17.2	0	34.4
b. Pickup, Diesel (4 X 4) (1)	17.2	0	0	17.2
c. Motorcycles (10)	15.5	0	0	15.5
d. Maintenance	7.7	5.0	0	12.7
Sub-Total, Vehicles	57.6	22.2	0	79.8
2. Training Materials	3.9	3.9	0	7.8
Sub-Total, Commodities	61.5	26.1	0	87.6
TOTAL, Farmer Group Development (A + B + C)	369.9	289.5	16.8	676.2

INTERMEDIATE TECHNOLOGY

	1981	1982	1983	TOTAL
A. TECHNICAL ASSISTANCE				
1. Long-Term Personnel I.T. Advisor	110.0	18.3	0	128.3
2. TDY	8.4	0	0	8.4
Sub-Total, TA	118.4	18.3	0	136.7
B. TRAINING				
1. Third Country	9.0	9.0	0	18.0
Sub-Total, Training	9.0	9.0	0	18.0
C. COMMODITIES				
1. Vehicles				
a. Pickup, Diesel (4 X 4)	17.2	0	0	17.2
b. Motorcycles (3)	4.7	0	0	4.7
c. Maintenance	6.2	0	0	6.2
Sub-Total, Vehicles	[illegible]	[illegible]		

INFRASTRUCTURE

	1981	1982	1983	TOTAL
A. TECHNICAL ASSISTANCE				
1. Long-Term Personnel				
Director Infra. Development	120.0	120.0	0	240.0
Equipment Maint. Specialist	120.0	120.0	120.0	360.0
Bridges/Bldgs Specialist	120.0	120.0	0	240.0
Road Rehab. Specialist	120.0	120.0	0	240.0
Sub-Total, Long-Term Per	480.0	480.0	120.0	1080.0
2. TDY				
Contractor Management/ Coordination	18.0	18.0	12.0	48.0
Sub-Total, Tech. Assistance	498.0	498.0	132.0	1128.0
B. TRAINING				
1. Third Country	12.0	12.0	0	24.0
Sub-Total, Training	12.0	12.0	0	24.0
C. COMMODITIES				
1. Maintenance Budget				
a. Project Facilities	89.0	52.0	0	138.0
1. Spare Parts (pump and generators)				
2. Misc. Equipment				
3. Misc Building Materials				
4. Vehicle Spare Parts (17 ea)				
5. Tire Replacement				
6. Bicycle Spares				
b. Special Brigade	256.0	222.0	0	478.0
1. Shop Tools				
2. Hand Tools				
3. Heavy Equipment Spares				
a. D-6 Cat. (2 ea)				
b. Grader (3 ea)				
c. Loader (1 ea)				
d. Concrete Mixer (2 ea)				
e. Air Compressor (1 ea)				
f. Miss Shop Equipment				

MARKETING & CREDIT

	1981	1982	1983	TOTAL
A. TECHNICAL ASSISTANCE				
1. Long-Term Personnel Marketing Advisor	55.0	110.0	55.0	220.0
2. TDY Credit Specialist	16.8	16.8	0	33.6
Sub-Total, TA	71.8	126.8	55.0	258.6
B. TRAINING				
1. U.S.	12.0	6.0	0	18.0
2. Third Country	9.0	0	0	9.0
3. In-country	5.0	5.0	0	10.0
Sub-Total, Training	26.0	11.0	0	37.0
C. COMMODITIES				
1. Vehicles				
a. Pickups, Diesel (4 X 4) (2)	34.4	0	0	34.4
b. Motorcycles (3)	4.7	0	0	4.7
c. Maintenance	10.9	0	0	10.9
Sub-Total, Commodities	50.0	0	0	50.0
TOTAL, Marketing & Credit (A + B + C)	147.8	137.8	55.0	340.6

INFRASTRUCTURE	1981	1982	1983	TOTAL
C. COMMODITIES				
1. Maintenance Budget				
b. Special Brigade				
g. Roller (1 ea)				
h. Pick-ups (11 ea)				
i. Trucks (14 ea)				
j. Truck Tractor (1 ea)				
k. Tire Replacement				
Sub-Total, Maintenance	345.0	274.0	0	626.0
2. New Equipment				
a. 120 G grader (1)	91.0	0	0	91.0
b. 930 Front-end loader (1)	75.0	0	0	75.0
c Diesel pickups (2)	34.4	0	0	34.4
d. Dump Trucks (4)	200.0	0	0	200.0
e. Maintenance	90.0	0	0	90.0
Sub-Total, New Equipment	490.4	0	0	490.4
3. Fuel for Project (40% funded in $ US)	221.0	287.0	0	508.0
4. Aviation Gas	65.0	84.0	0	149.0
Sub-Total Commodities	1121.4	645.0	0	1766.4
Total, Infrastructure (A + B + C)	1631.4	155.0	132.0	2918.4

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INFO SYSTEM/COMMUNICATIONS

	1981	1982	1983	TOTAL
A. TECHNICAL ASSISTANCE				
1. Long-Term Personnel Advisor	110.0	110.0	27.5	247.5
Sub-Total, TA	110.0	110.0	27.5	247.5
B. TRAINING				
1. U.S.	36.0	36.0	0	72.0
2. Third Country	12.0	12.0	0	24.0
Sub-Total, Training	48.0	48.0	0	96.0
C. COMMODITIES				
1. Vehicles				
a. 4 X 4 Diesel (1)	17.2	0	0	17.2
b. Motorcycles (7)	10.9	0	0	10.9
c. Maintenance	7.1	0	0	7.1
Sub-Total, Commodities	35.2	0	0	35.2
TOTAL, Communications (A + B + C)				

PROJECT MANAGEMENT UNIT (PMU)

	1981	1982	1983	TOTAL
A. TECHNICAL ASSISTANCE				
1. Long-Term Personnel				
Advisor to Dir/Chief of Pty	110.0	110.0	110.0	330.0
Asst Dire/Admin & Finance	82.5	0	0	82.5
Pilot/Mechanic	110.0	110.0	0	220.0
Project Support Officer/Kin	110.0	110.0	0	220.0
Sub-Total, Long-Term Per	412.5	330.0	110.0	852.5
2. TDY				
Contractor Management/ Coordination	15.2	15.2	15.2	45.6
Technical Assistance	8.4	8.4	8.4	25.2
Sub-Total, TDY	23.6	23.6	23.6	70.8
3. Evaluations				
FY 1981	0	80.0	0	80.0
End of Project	0	0	100.0	100.0
Sub-Total, Evaluation	0	80.0	100.0	180.0
Sub-Total, Tech. Assistance	436.1	433.6	233.6	1103.3
B. TRAINING				
1. U.S.	12.0	0	0	12.0
2. Third Country	27.0	27.0	0	54.0
3. Conferences (external)	6.0	6.0	6.0	18.0
4. Language training	10.0	0	0	0
Sub-Total, Training	55.0	33.0	6.0	94.0

PMU

	1981	1982	1983	TOTAL
C. COMMODITIES				
1. Vehicles				
a. 4 X 4 Diesel (4)	34.4	34.4	0	68.8
b. Motorcycles (3)	3.1	1.6	0	4.7
c. Maintenance	10.6	10.3	0	20.9
Sub-Total, Vehicles	48.1	46.3	0	94.4
2. Equipment				
a. Office Supplies	6.5	3.3	0	9.8
b. Radio Spares	3.0	3.0	0	6.0
c. Plane Spares	15.0	10.0	0	25.0
Sub-Total, Equipment	24.5	16.3	0	40.8
Sub-Total, Commodities	72.6	62.6	0	135.2
D. OTHER COSTS				
1. Air Cargo Flights (Zaire)	21.0	21.0	14.0	56.0
2. Radio Maintenance	8.0	8.0	8.0	24.0
3. Passenger Air Charters	15.0	15.0	15.0	45.0
4. CIMMYT/PNM Training	70.0	0	0	70.0
Sub-Total, Other Costs	114.0	44.0	37.0	195.0
TOTAL, PMU (A + B + C + D)	677.7	573.2	276.6	1527.5

ANNEX 5 PROCUREMENT PLAN

COMMODITIES BUDGET
($000)

ITEM	R/E FY 81	R/E FY 82	R/E FY 83	FGD FY 81	FGD FY 82	IT FY 81	M/C FY 81	INF FY 81	INF FY 82	PHE FY 81	PHU FY 81	PHU FY 82	PHU FY 83	TOTAL
I. Vehicles														
1. 4 X 4 Diesel (17 ea)	34.2	34.2	-0-	34.4	17.2	17.2	34.4	-0-	-0-	17.2	34.4	34.4	-0-	257.4
2. Motorcycles (34 ea)	14.0	6.2	-0-	15.5	-0-	4.7	4.7	-0-	10.9	10.9	3.1	1.6	-0-	71.6
3. Truck 4 MT (1 ea)	30.0	-0-	-0-											30.0
4. Tractor Spares	1.3	1.3	-0-											2.6
5. Maintenance	12.7	12.0	-0-	7.7	5.0	6.2	10.9	-0-	7.1	7.1	10.6	10.3	-0-	89.6
II. Equipment														
1 Research Station	20.0	10.0	-0-											30.0
** a. Water Pump														
b. Shop Equipment														
c. Diesel Generator														
d. Miscellaneous														
2. Seed Building	2.6	-0-	-0-											2.6
3. Machinery						15.0								15.0
a. Gas Welder														
b. Electric Welder (Diesel-Portable)														
c. Horizontal lathe														
4. Shop Spares						5.0								5.0
5. Office Supplies											6.5	3.3	-0-	9.8

ITEM	R/E FY 81	R/E FY 82	R/E FY 83	FGD FY 81	FGD FY 82	IT FY 81	M/C FY 81	INF FY 81	INF FY 82	PME FY 81	PMU FY 81	PMU FY 82	PMU FY 83	TOTAL
II. Equipment														
6. Radio Spares											3.0	3.0	-0-	6.0
7. Plane Spares											15.0	10.0	-0-	25.0
III. Materials														
1. Training	3.4	-0-	-0-	3.9	3.9									11.2
2. Ag Supplies	40.0	-0-	-0-											40.0
a. Soil Testing Materials														
b. Grain/Seed Testing Equipment														
c. Grain														
d. Miscellaneous														
3. Seed	1.5	1.5	1.0											4.0
4. Fertilizer	39.0	39.0	39.0											117.0
5. Chemicals	11.7	11.7	9.1											32.5
IV. Project Facilities														
1. Spare Parts (pump and generators)								19.0	15.0					34.0
2. Misc Equipment								16.0	-0-					16.0
3. Mis Building Materials								16.0	-0-					16.0
4. Vehicle Spare Parts (17 ea)								25.0	22.0					47.0

ITEM	R/E FY 81	FY 82	FY 83	FGD FY 81	FY 82	IT FY 81	M/C FY 81	INF FY 81	FY 82	PMB FY 81	PMU FY 81	FY 82	FY 83	TOTAL
IV. Project Facilities														
5. Tire Replacement								12.0	15.0					27.0
6. Bicycle Spares								1.0	-0-					1.0
V. Special Brigade														
1. Shop Tools								6.0	7.0					13.0
2. Hand Tools								19.0	10.0					29.0
3. Heavy Equipment Spares								231.0	205.0					436.0
a. D-6 Cat. (2 ea)								(32.0)	(26.0					(58.0)
b. Grader (3 ea)								(37.0)	(29.0)					(60.0)
c. Loader (1 ea)								(10.0)	(8.0)					(18.0)
d. Concrete Mixer (2 ea)								(5.0)	(4.0)					(9.0)
e. Air Compressor (1 ea)								(4.0)	(3.0)					(7.0)
f. Miss Shop Equipment								(8.0)	(6.0)					(14.0)
g. Roller (1 ea)								(5.0)	(4.0)					(9.0)
h. Pick-ups (11 ea)								(13.0)	(12.0)					(25.0)
i. Trucks (14 ea)								(56.0)	(50.0)					(106.0)
j. Truck Tractor (1 ea)								(13.0)	(6.0)					(19.0)
k. Tire Replacement								(48.0)	(57.0)					(105.0)

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ITEM	R/B FY 01	R/B FY 02	R/B FY 03	FGD FY 01	FGD FY 02	IT FY 01	M/C FY 01	INF FY 01	INF FY 02	PMB FY 01	PMU FY 01	PMU FY 02	PMU FY 03	TOTAL
VI. Equipment														
1. 170 G Grader (1 ea)								91.0						91.0
2. 930 Front End Loader (1 ea)								75.0						75.0
3. Pickup (Diesel) (1 ea)								34.4						34.4
4. Dump Truck (Diesel) (1 ea)								200.0						200.0
5. Maintenance								90.0						90.0
VII. Fuel														
1. Vehicles								221.0	287.0					508.0
2. Aviation Gas								65.0	84.0					149.0
VIII. Other														
1. Cargo Flights											21.0	21.0	14.0	56.0
2. Radio Maintenance											8.0	8.0	8.0	24.0
3. Passenger Charters											15.0	15.0	15.0	45.0
4. CIMMYT/PNM Training											70.0	-0-	-0-	70.0
TOTALS	210.4	115.9	49.1	61.5	26.1	48.1	50.0	1121.4	645.0	35.2	186.6	106.6	37.0	2692.9

* Note: This total includes other cost items from PNS Budget Summary

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INITIAL ENVIRONMENTAL EXAMINATION

Project Country: Zaire

Project Title: North Shaba Rural Development

Funding: FY(s) 77 - 83 $ 13,400,000(USD)
$ 12,700,000(LC)

Period of Project: 7/77 - 9/83

IEE Prepared by: Resseguie

Environmental Action Recommended:

(See p. 2, No. III)

E. Initial Environmental Examination

1. Description of Project: The project is located in Eastern Zaire and covers an area of approximately 90,000 sq. km. The project area includes the Lukuga River and is bordered in part by the Lualaba (Zaire) River. There are no other major geographic features. There is a major road rehabilitation component involving existing roads (724 km) and bridges (72 each). The agriculture component will develop farming systems technologies to increase land productivity. This involves research to determine best land use methods, and a reduction in slash/burn methods where possible. Farmer groups/pre-cooperatives will be encouraged in an effort to improve farmer income through economic activities (marketing of crops, processing, etc.). These groups will also serve as the channels through which new technologies will be disseminated. Other project components include intermediary type assistance to the commercial marketing sector; fabrication and sale of small hand tools and processing machines; training of village blacksmiths; information and data gathering component. In summary, the project seeks to increase their incomes; to develop a process for development which could be replicated elsewhere in Zaire.

2. Examination of Nature, Scope, and Magnitude of Environmental Impacts: (In terms of items on attached Impact and Evaluation Form) Project research component will introduce limited amounts of fertilizer (5 ot) on a pilot basis in 1980 to participating farmers. Increasing amounts will be sold to area farmers as a result of anticipated GOZ imports in 1981 and years following. Distribution of this fertilizer will be accompanied by written instructions (in French and Swahili) describing the formula contents, application rates, time of application, and method of applying fertilizer. These instructions will be in addition to demonstrations and training sessions on the proper use of fertilizer. Pesticides will be used for experimental purposes at the research station. Pesticides will not be made available to area farmers through project auspices during life ofpproject. The projects research component will develop farming systems/technologies to encourage good land use practices, lengthen fallow/land productivity periods, and improve soil building techniques. The road rehabilitation component will incorporate technologies to minimize erosion from water drainage and avoid inundation of low lying fields. Participating farmers overall economic well-being will be improved. Preventive activities will improve general health and welfare.

3. Recommended Environmental Action: Environmental Assessment and Impact Statements are not required at this time. Continuous monitoring of project activities will provide information as to land use effects of research program. Project links with the landsat Imagery Interpretation program will provide information on forest depletion problems and agricultural land use patterns. Pesticide use will be under controlled conditions at the research station.

A request is hereby made for a pesticide exemption under 216.3(b)(2)(iii) in Handbook 3, Appendix 4B. This request is based on the fact that the pesticides will be used for research purposes only and under the supervision of project personnel.

Project personnel will ensure that the pesticide products are adequately labeled and that instructions for use are carefully adhered to by technicians. Furthermore, crops on which these pesticides are used will not be used for human consumption.

A chart of the various pesticides to be used will be prepared as soon as the list of pesticides is known. This list is currently being drawn up. This chart will include tolerances and rates and frequency of application.

IMPACT IDENTIFICATION AND EVALUATION FORM

Impact areas and Sub-areas	Impact Identification and Evaluation
A. LAND USE	
I. Changing the character of the land through:	
a. Increasing the population	N
b. Extracting natural resources	N
c. Land clearing	L
d. Changing soil character	L
2. Altering natural defenses	N
3. Foreclosing important uses	N
4. Jeopardizing man of his works	N
5. Traffic access	N
6. Land use planning	H
7. Squatter, other development	N
B. WATER QUALITY	
I. Physical state of water	N
2. Chemical and biological states	L
3. Ecological balance	N
C. ATMOSPHERIC	
I. Air additives	N
2. Air pollution	N
3. Noise pollution	N

D. NATURAL RESOURCES

I. Diversion, altered use of water	N
2. Irreversible, inefficient commitments	N
3. Wildlife	N

E. CULTURAL

I. Altering physical symbols	N
2. Dilution of cultural traditions	N

F. SOCIOECONOMIC

I. Changes in economic/employment patterns	M - H
2. Changes in population	L
3. Changes in cultural patterns	L
4. Dislocation and relocation of area residents	N
5. Support facilities	H

G. HEALTH

I. Changing a natural environment	N
2. Eliminating an ecosystem element	N
3. New pathways for disease vectors	N
4. Safety provisions	M

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H. GENERAL

I.	International impacts	N
2.	Controversial impacts	N
3.	Larger program impacts	N
4.	Aesthetics	N

*List of pesticides to be provided later.

N - No environmental impact
L - Little environmental impact
M - Moderate environmental impact
H - High environmental impact
U - Unknown environmental impact

ANNEX 8

FEB 26 1980

ACTION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR FOR AFRICA

FROM: AFR/DR, ~~John W. Koehring~~ JWKoehring

SUBJECT: Zaire - North Shaba Maize Production Project - (660-0059)

Problem: Your approval is required for proceeding with the development of a Project Paper Amendment for the North Shaba project.

Background: The North Shaba Maize Production Project 1/ has received considerable attention over the course of its existence — from the difficult design in 1976, through implementation to date and the mid-course evaluation in June and July, 1979. Designed as an integrated rural development project, with an emphasis on agriculture production (specifically maize), the project has exhibited many of the problems associated with complex integrated rural projects with many sub-components.

A mid-course evaluation was designed into the project as a means to take a look at projects progress and provide guidance for the continued implementation and possible redesign, where necessary.

Discussion: The North Shaba Project has had mixed success in meeting objectives as outlined in the project paper of 1976.

Unusual delays have been encountered in the procurement and delivery of technical services, supplies, materials and equipment. These delays have included getting key staff (contract and Government of Zaire) on board. Other delays have been caused by the lack of availability of petroleum products and construction materials. In addition, a serious flood in the project area totally disrupted transportation. These handicaps are gradually being overcome and project implementation is expected to proceed much more smoothly over the coming months.

Attached hereto is a report on progress for each of the major Sub-systems and outputs (as cited in the PP) expected from the project.

The Project Committee has carried out an in-depth review of the project evaluation. Their conclusion is that no evidence has been presented

1/ The project was authorized on September 29, 1976, the Grant and Loan Agreements were signed in late January, 1977, the Technical Services Contract was signed on March 12, 1978 and 2 TA positions of 16 remain to be filled.

which precludes proceeding with the project, and undertaking certain adjustments and revisions to be incorporated in a proposed Project Paper Amendment and Authorization Amendment, including an increase in the level of funding, to be submitted for your approval.

A Project Review Meeting was held on February 4, 1980 to consider the evaluation. This Project Review Meeting discussed the issues raised by the Dimpex Report and other issues raised by the Project Committee. It was the opinion of the Project Committee that the project was contributing positively to the economic and social development of small farmers, but that adjustments to the project were called for. The consensus of the Project Review Meeting was that a Project Paper Amendment should be prepared.

At the same time it was acknowledged that there are serious problems and constraints that continue to plague Zaire, and can constitute serious constraints to the implementation of the project. These include:

1) Zaire's economy is in a severe state of depression and imbalance;

2) stagnant agricultural production since 1975, compounded by continued difficulties in the distribution of goods through the transportation system, and an insufficiency of foreign exchange for food imports, has resulted in serious shortages of food in parts of the country;

3) price inflation since 1975 has averaged approximately 72 percent per annum;

4) Zaire has an enormous foreign debt burden which will continue to plague the economy and seriously hamper the country's development efforts;

5) GOZ efforts to revitalize agricultural production have been hampered by the gradual deterioration of the country's transportation network and inadequate maintenance of the transportation infrastructure;

6) Ill-conceived GOZ policies affecting small farmers, e.g., crop quotas and price controls, have heretofore inhibited expanded production and limited the small farmer's opportunities to increase his income level;

7) Lack of genuine interest at the national level in improving rural welfare, in past years, has undercut any major improvement efforts. This lack of interest has been translated into ineffective agricultural planning.

8) Finally, the record clearly shows that, whether in the area of foreign exchange management, budgetary operations, the day to day business of government, or long range planning, the GOZ, as an administrative organization, has not performed very well.

However, on the basis of recent reports, our judgment is that the GOZ is not only seized with these matters, but is taking serious steps to address them. The Mobutu Plan, which serves as the GOZ's current development plan, accords agricultural development the "priority of priorities". It proposes to emphasize agricultural infrastructure (transport, marketing, storage, credit and research) and to rationalize agricultural services. The GOZ also pledges a greater liberalization of price controls and, in the interim, the adjustment of producers prices to reflect opportunity costs more explicitly. We see these measures as essential to the revitalization of the agricultural sector. The plan recognizes the need for improved transportation and communication networks as well.

The GOZ also agreed, in the 1979 IMF Standby Agreement, to:

- A decrease in the GOZ budget deficit requiring bank financing;

- a decrease in credit expansion;

- an incomes policy implying a decrease in real wages in both the public and private sectors;

- improved foreign exchange management;

- an orderly process of decreasing the arrears of external payments; and

- a limitation on new foreign borrowing by the GOZ.

While there is no question that there are serious difficulties in continuing with a project of this nature, we believe that the intent of the GOZ is sufficiently serious, and the potential of the project sufficiently important, that, on balance, it should continue to be supported.

The DIMPEX Report has provided us with useful comments and suggestions which will be considered and, as appropriate, incorporated into the proposed Project Paper Amendment. Specific responses to the DIMPEX recommendations have been prepared and otherwise provided to you. Thus, we propose proceeding with preparation of a Project Paper

1. Though the project objectives as stated in the 1976 Project Paper are now recognized as overly ambitious, they remain valid today. The design effort to prepare the Project Paper Amendment will take this into account and reflect more realistic goals.

2. As a development effort, the North Shaba Maize Production Project is consistent with the Agency's mandate to work with the rural poor and small farmers for increased food production. The Mission and we recognize the constraints of working in Zaire to implement development assistance projects. All are convinced, nevertheless, that this is a worthwhile effort. Success with this project, even if moderate, will show that development can take place.

3. Despite the recognized constraints and difficulties this project has faced, the Government of Zaire, and especially, the Department of Agriculture, place a high priority on it's implementation. Zaire has a massive, annual deficit in maize production nationally, as well as in Shaba Province. The project area is in the "maize basket" for all of Shaba. Increased production will ease the deficit and save valuable foreign exchange for other priority needs.

4. The DIMPEX Report (as well as the Project Evaluation Summary prepared by the Mission) indicates that the basic thrust of the project is sound, and it is making progress. The conclusions to be drawn are that with modifications, project implementation can be improved, if not accelerated, and a continuing contribution to the economic and social development of the project area and its people can be made.

Recommendation: It is recommended that you approve proceeding with the development of a Project Paper Amendment, for review and approval in AID/W, for the North Shaba Maize Production Project.

Approved: [signature]

Disapproved: _____

Date: 3/21/80

Draft:SChambers:LBond:JWKoehring:AFR/DR:awb:2/26/80

ATTACHMENT

Progress Report on the Major Sub-systems and Outputs (as cited in the PP) for the North Shaba Maize Production Project

A. Development of Maize and Other Crop Technologies: Except for a Peace Crops Volunteer, the project's only agriculture advisor was not on board until one year after the technical assistance contract was signed. Field plot studies did not begin, therefore, until the October 1978 plantings. Nothing has been done on a soil survey, considered critical at the project design stage. There is little evidence of economic assessments of the feasibility of various improved technologies, nor what additional assistance might be obtained from the National Maize Program or the FAO's fertilizer program. Despite the presence of a good Zairois Director, the project's research center facilities were hampered by a lack of equipment which just began arriving in mid-1979. On balance, this is a key element of the project that, admittedly, has not heretofore done well. However, there is now evidence that good seeds from the National Maize Program, with some improvement in practices, are giving modest increases in farmers income at low cost.

B. Improved Technology Extended to Farmers: Accomplishments in this area have been satisfactory in light of the difficulties in achieving performance under Item A above. Approximately 1400 farmers of some 3800 reached by the project extension program

distribute improved seeds and hand tools, and to elicit expressions of needs. Valuable experience is being gained for the project by this work with the farmers groups and councils. Female technicians in agricultural centers have begun conducting women's literacy classes as a first step toward further work with women in development. Efforts are to continue to involve women in the farmer groups, and should accelerate with the addition of the contract women's development specialist in March/April 1980.

D. Development of Intermediate Technology:
Forty blacksmiths are to be trained and a capacity to produce simple machines and repair machinery is to be developed by the end of the project. As of mid-1979, four blacksmiths had been trained to produce hand tools, corn shellers, peanut decorticators and oil presses for sale to area farmers. This sub-sector is only a little behind schedule.

E. Rehabilitation of Roads:
Road repairs are far behind schedule as only 50 kilometers of primary roads, of a planned 240 kilometers, and about 50 kilometers of a planned 724 kilometers of secondary roads have been completed. Costs are far outrunning estimates because of inflation. There has been some criticism of the project because of its heavy commitment to road repair. On the other hand, roads have proven crucial to so many rural development projects that this component is considered vital, and it should get adequate support. It is a component, however, that can be stretched out to accompany the pace of agricultural development.

F. Expand Project Area Marketing Capacity:
Project expectations at the time of the design were an increase in the number of merchants marketing maize by 20 percent a year, improve rail loading facilities, expanded private sector marketing capacity and improved market operations of the Office Nationale des Cereal (ONACER) For a variety of reasons there has been little effect to date on the number of merchants or their capacity to handle crops. Rail loading facilities will be greatly improved once the purchase of the Nyunzu facilities for the project is completed. A major problem with

expanding the capacity of merchants to market grains has been the project's inability to procure trucks for sale or lease. This problem will be ameliorated once trucks procured under the Agriculture Marketing Project (Loan 660-K-025) begin arriving. It has been speculated that government pricing policies are having a deleterious effect on production of maize, but evidence is not conclusive either way.

G. Information System to be Developed and Functioning: The Information System was conceived to be an information - monitoring evaluation activity. Baseline data was to be gathered and data on progress maintained. This sub-component has been functioning since 1978, but has been seriously affected by a lack of Zairois staff. A baseline study has not been carried out because of the sensitivities of such studies. Concern has been expressed over the possibilities for misuse of data or generation of suspicion among the target population. All agree the unit needs to be vitalized and carry out its role of monitoring and evaluation. It should have specific problem - oriented objectives; e.g., rate of progress, financial status, cost effectiveness and identifying constraints to progress. It is expected that an advisor will be brought in with a highly specific scope of services.

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Mr. Bend

MEMORANDUM

TO : AA/AFR, Mrs. Goler T. Butcher

FROM : AFR/DR, ~~John W. Koehring~~ JWKoehring

SUBJECT: Zaire - North Shaba Maize Production Project 660-0059

Attached herewith is the plan for proceeding with preparation of an amendment to the North Shaba Project Paper and, thereafter, an amendment to the authorization. This plan has been developed jointly by the Mission and AID/W and has the concurrence of the Project Committee.

Attachment: a/s

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PLANS FOR PROCEEDING WITH NORTH SHABA MAIZE PRODUCTION PROJECT (660-0059)

I. The development of PNS was perceived as sufficiently complex so as to warrant periodic adjustment during the life of the project. The nomenclature used during the Project Paper preparation - rolling design - was employed to emphasize this perceived need for adjustment.

While some minor changes have been made during the first three years of project life, the planned evaluation in mid 1979 was envisioned as a tool to assist project administrators and implementors in determining what kinds of adjustments are needed for the next three years of project life.

In general, the project will continue following the original design outlines. Some changes in emphasis will be required in order to meet project objectives.

II. The major areas of adjustment are:

- Earlier introduction of fertilizer, possibly funded by AID;
- greater role for PNS in the marketing of agricultural products (includes introduction of credit);
- extending the life of the Special Brigade and adding more heavy equipment and parts;
- reassessing the role of the monitoring and evaluation subsystem;
- evaluating the possibility of substituting prefabricated steel culverts in lieu of difficult to obtain cement.

III. Activities that are currently being undertaken, but will receive greater attention as the project goes into the next three years, include:

- Research and demonstrations on cash and food crops (other than maize) in rotations and intercropping;
- influencing the viability of farmer groups and assessing their potential on a continuing basis;
- studying the effects of farming forest areas and the possibilities of encouraging greater use of savanna;
- effecting the self-financing of the Intermediate Technology Subsystem;
- continuous review of the decision-making processes at the project level and also the Kinshasa level;
- ongoing review of financial systems to facilitate cost/benefit exercises and future audits;
- intensify studies related to changes in farmer well being and income;

- intensify efforts in the area of womens' involvement in project activities; and

- continuous studies relative to price - cost ratios in the marketing system in an effort to influence GOZ pricing policies.

IV. Considerable discussion between the PMU, GOZ, and AID has taken place since the evaluation regarding many of the above activities. In fact, some had been discussed prior to the evaluation. A general program of action has emerged from these discussions. This program is geared to enable the project to reach its realistic objectives during the next three years. There are five major components to this program (as mentioned in II above) and activities will proceed as follows:

1. Fertilizer. The introduction of fertilizer to farmers, as part of the program to increase marketable surpluses, was originally scheduled for 1982. This would have been the final year of AID funded participation.

Two factors are emerging which dictate introduction at an earlier stage and external funding for imported fertilizer:

a. the growing impatience on the part of the GOZ and USG to realize significant increases in maize production;

b. the increasingly apparent inability of the GOZ to institute a system for importation and domestic fabrication of fertilizer and required ingredients (note: Zaire has phosphate and nitrogen resources) An initial study has been completed by a Zairois technician from the National Fertilizer Program (FAO funded) to determine the economic feasibility of fertilizer use in the project area as well as the requirements and problems of logistics and administration of such a program. The general conclusions are favorable from an economic point of view. The major problems will be in the logistics and administration of such a program. Further analysis and follow up of this report are required and will be undertaken in the near future.

It is almost certain that the GOZ will not get adequately geared up to facilitate fertilizer imports in sufficient quantities to reach PNS farmers. The alternative of U.S. funded imports raises two questions:

a. The cost is liable to range from $500,000 during the first year or two and jump to $1.5 - 2.0 million within three years (at current prices); and

b. assuming a finite period of AID funded imports, will continuing supplies, funded from GOZ sources, be adequate to encourage farmers' participation.

PNS is pushing ahead with its research program to determine the best technological packages for farmers, including use of fertilizer. Production frontiers have not yet been reached using various packages in farming systems. PNS personnel recognize the value of introducing fertilizer as soon as possible but are also concerned with the longer run aspect of supply.

There are also the questions of risk and credit associated with fertilizer and credit. The former is difficult to deal with because factors such as climate, government policies, pests and disease enter into the equation. The latter is easier to deal with in the sense that there is some experience base in Zaire (FAO fertilizer program). However, credit does add to the cost of the project and instituting such a program requires time and additional personnel. The magnitude of credit needs has not as yet been determined either.

In summary, PNS will continue to research and study fertilizer needs in the project area. A section will be prepared for the PP amendment addressing this aspect, including the economics, logistics and administration, and timing.

2. Marketing. The PP envisioned the para-statal organization ONACER (National Cereals Office) intervening actively in the marketing of surplus corn (up to 25%) in the project area. The remaining marketing activities would be handled by local merchants. Local currency was programmed for credit and the purchase of trucks from GM Zaire (in Zaires).

With the elimination of ONACER and the unavailability of trucks for local purchase, the possibility of marketing project induced surpluses became a serious question. The marketing loan 660-K-025 (025) program, which was subsequently developed, was to provide the needed infrastructure for the marketing system (trucks, spares, sacks, etc.). However, delays in implementing this program will leave a serious gap in the marketing system this year. Local traders are not sufficiently equipped to market, in a timely fashion, all maize expected to be available from the upcoming harvest. PNS is not overly enthusiastic about active participation in the marketing campaign. Resources available within the project are insufficient to make much of an impact. However, there are areas in which PNS can assist in the marketing of surplus maize:

a. Making diesel fuel available to traders for purchase;

b. interceding with sack suppliers to bring sufficient supplies into the project area;

c. renting project trucks (3 each) to small traders and farmer groups; and

d. providing a weighing service between trader and flour miller.

Three additional areas in which the project may play a role are:

a. Seek to have ONPV (successor to ONACER) leave 5 - 6 trucks in the project area at the disposal of PNS for rental to farmer groups and small traders;

b. study the national cooperative laws and statutes to determine if existing farmer groups qualify to market their own maize; and

c. study credit needs of small, medium, and large traders to determine the magnitude of any future effort in this area.

The project will continue efforts to update and verify marketing data in the project area. Efforts to work with traders to improve their management skills will not be very great. This is a program closely tied in with loan 025 and involving one and/or two other parastatal organizations - SOFIDE (development bank) and OPEX (small business administration).

3. Infrastructure. The Special Brigade was expected to complete its work on roads and bridges and revert to Office des Routes (OR) during 1980. Due to delays in equipment arrivals, this work is behind schedule. Current revised estimates indicate that, barring unforeseen difficulties, road and bridge work can be completed by the end of FY 82. Thus, the linkages between the Special Brigade and OR will be delayed.

Delays in work schedules have also resulted from higher than expected rates of breakdowns and accidents. This has necessitated a revised estimate of equipment and spare parts requirements. These increases also take into account the need for turning over to OR equipment that is in reasonably good condition, including spares. This will enable OR to maintain the secondary roads in the project area post AID funding.

Additional activities to ensure efficient use of equipment include accelerated training program for some supervisory personnel and a special OJT program for heavy equipment operators.

4. Infrastructure. Given the difficulties in obtaining adequate and timely deliveries of cement, consideration is being given to substituting pre-fabricated steel culverts for as many bridges as possible. Otherwise, if the cement situation continues, the bridge rehabilitation objectives will never be reached.

An estimate of the cost of this switch is in the process of being prepared. It will be substantially higher than for cement bridges, but the opportunity cost of time and effort may more than offset this.

5. Information. This subsystem has not been able to produce sufficient data or the analysis thereof to satisfy internal and external demands. The recent assignment of an ex-pat technician to work at least half time in this subsystem will hopefully overcome this problem.

A careful review of information activities is being undertaken in an effort to determine if the subsystem is headed in the right direction, and what actions, if any, need to be taken to correct deficiencies. Under consideration, for example, is the possibility of splitting off some information gathering and analysis tasks to other subsystems.

IV. In summary, the project will proceed over the next three years without major revisions. Some changes in emphasis (information and marketing) and a few readjustments (infrastructure and research) will be undertaken. This is in keeping with the rolling design aspect of the project.

Two areas will require substantial increases in project funding - infrastructure ($1.5 m) and research/extension ($2 - 3 m over 3 years for fertilizer). Some studies have been done for the former funding increase and are underway for the latter.

PERSONNEL REQUIREMENTS FOR PP AMENDMENT

The major areas that need to be amended are:

1. Research and Extension

   a. Fertilizer requirements and feasibility

   b. Farmer requirements for credit

2. Farmer Groups

   Prospects for economic viability

3. Marketing

   Requirements for merchant credit

4. Infrastructure

   a. Requirements for additional equipment and spares

   b. Substituting steel culverts for cement bridges

5. Information

   Reviewing responsibilities and capabilities

PNS and the Mission have taken several initiatives to prepare data and reports in support of the above mentioned adjustments in the project. Some can be completed with internal resources while other areas require certain expertise which must be obtained through TDY assistance.

1. Fertilizer

The early introduction of fertilizer is being studied by PNS and AID personnel in conjunction with the FAO National Fertilizer Program. The Mission feels that this will be adequate to make a decision on how to proceed.

2. Credit

The contractor - DAI - is in the process of seeking candidates with expertise in coops and credit for short term duty. The scope of work for this individual will include coop viability, farmer and trader credit needs, and national laws affecting farmer groups.

Much of the ground work is being done by PNS personnel as well as Mission and GOZ technicians. It is anticipated that a candidate can be located and travel to Zaire by late February for about a month's TDY.

3. Infrastructure

A recent TDY engineering report contained general comments on the

requirements for additional equipment and spare parts. It is is determined that cost benefit analyses on the engineering economics of the road bridge operations is required, then an additional TDY will be required over a longer period of time.

The efficiency and economics of substituting culverts for cement in the bridgework can be studied and analyzed by PNS and Mission personnel.

4. Information

A review of this subsystem is being undertaken internally by PNS and Mission personnel. This should be adequate to determine the future direction of this effort. In summary, requirements for external TDY assistance in preparing the PP amendment are limited to the credit and co-op specialist and if deemed necessary, a roads engineer/economist. In addition, given the Mission workload and shortage of personnel, a Project Officer to coordinate and prepare drafts of the amendment would certainly accelerate the whole process.