

AID Evaluation Special Study No. 32

Development Management in Africa: The Case of the North Shaba Rural Development Project in Zaire

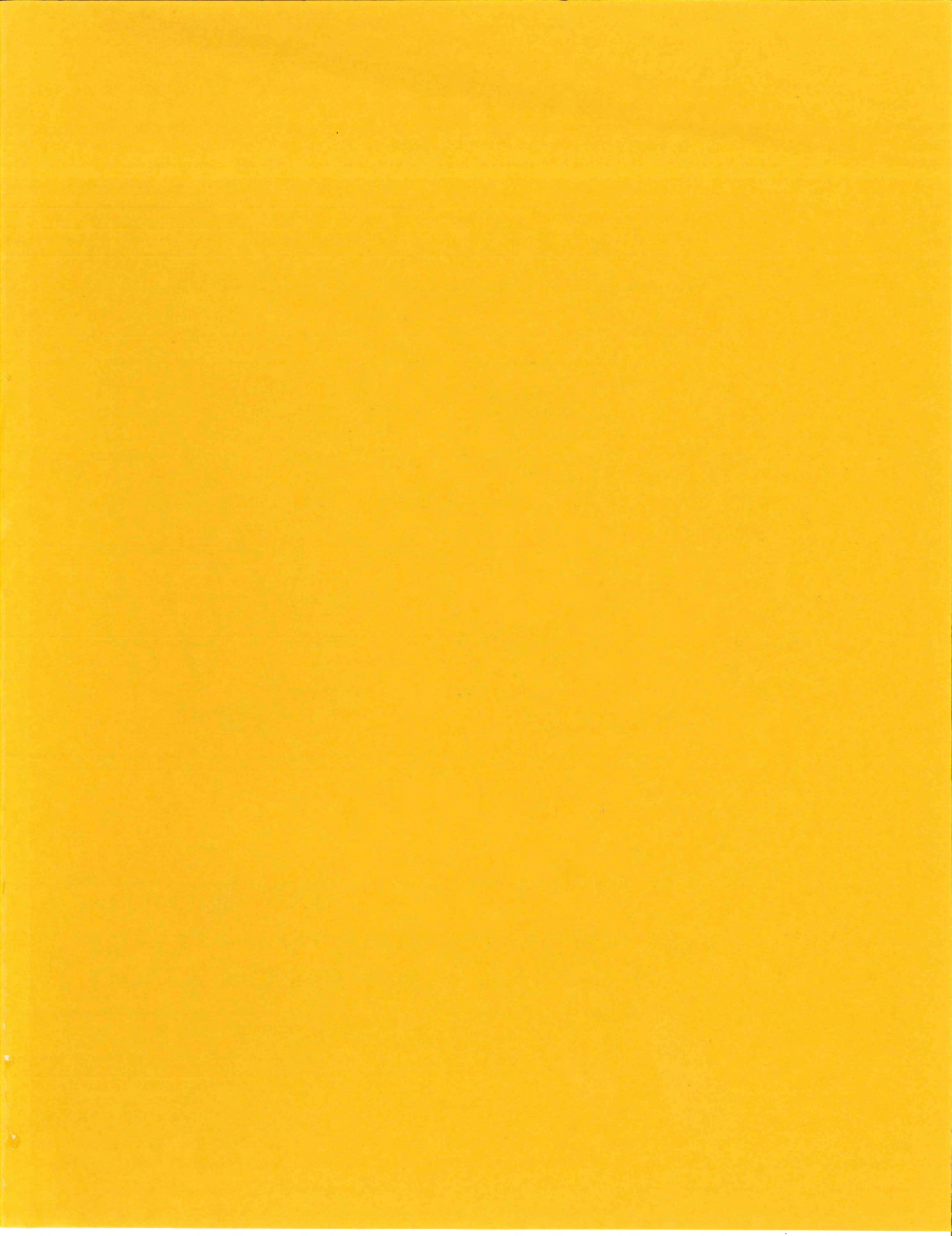


December 1985

Agency for International Development (AID)

Washington, D.C. 20523

PN-AAL-063



DEVELOPMENT MANAGEMENT IN AFRICA
THE CASE OF THE
NORTH SHABA RURAL DEVELOPMENT PROJECT IN ZAIRE

AID EVALUATION SPECIAL STUDY NO. 32

by

Irving Rosenthal, Team Leader
(Bureau for Policy and Program Coordination,
Center for Development Information and Evaluation, AID)

Leroy Jackson, Team Co-Leader/Project Development
(Bureau for Africa, AID)

Ruth Mara, Information Specialist
(Bureau for Policy and Program Coordination,
Center for Development Information and Evaluation, AID)

Laura McPherson, Rural Development Specialist
(Independent Consultant)

U.S. Agency for International Development

December 1985

The views and interpretations expressed in this report are those of the authors and should not be attributed to the Agency for International Development.

TABLE OF CONTENTS

	<u>Page</u>
Acknowledgments.....	v
Preface.....	vii
Summary.....	viii
Project Data Sheet.....	xi
Glossary.....	xiii
Map of Zaire.....	xv
Map of North Shaba.....	xvi
1. Country Development Management Setting.....	1
1.1 Overall Economic Management.....	1
1.2 The Agricultural Sector.....	1
1.3 Development Management.....	2
2. Project Description.....	3
3. Project Analysis and Findings.....	5
3.1 General Findings.....	5
3.1.1 Project Accomplishments.....	5
3.1.2 Project Goals and Objectives.....	6
3.1.3 Project Sustainability (and the Private Sector).....	7
3.1.4 Implementing Agent.....	8
3.2 Contextual Factors Relating to Management.....	8
3.2.1 Sociocultural Tradition.....	8
3.2.2 Beneficiary Perceptions of the Project.....	9
3.2.3 Distance and Isolation.....	10
3.3 Organizational, Structural, and Institutional Considerations.....	10
3.3.1 External Coordination.....	10
3.3.2 Levels and Independence of Project Direction.....	11
3.4 Administrative Process Interventions.....	12
3.4.1 Authority.....	12
3.4.2 Information and Management.....	13
3.4.3 Decision-Making.....	14

TABLE OF CONTENTS (cont.)

	<u>Page</u>
3.5 Resource Input Management.....	14
3.5.1 Financial Management.....	14
3.5.2 Logistics and Commodity Management.....	15
3.6 Human Resources Development and Management.....	16
3.6.1 Beneficiary Farmers.....	16
3.6.2 Project Personnel.....	16
3.6.3 Technical Advisers.....	18
4. Lessons Learned.....	18
4.1 General Lessons.....	18
4.2 Contextual Factors Relating to Management.....	19
4.3 Organizational, Structural, and Institutional Considerations.....	19
4.4 Administrative Process Changes.....	20
4.5 Resource Input Management.....	20
4.6 Human Resources Management and Behavioral Considerations.....	21

Appendixes

- A. Description of Project Subsystems
- B. Contextual Factors
- C. Organizational and Institutional Issues
- D. Administrative Processes
- E. Information Management
- F. Financial Management
- G. Logistics and Commodity Management
- H. Human Resources Development and Management

ACKNOWLEDGMENTS

The fieldwork on the North Shaba Rural Development Project (Project North Shaba--PNS) was carried out in November 1984. Irving Rosenthal, the leader of the study team, was also the coordinator for the overall series on development management. Leroy Jackson had extensive field experience in Africa, including an earlier assignment with USAID/Kinshasa. Ruth Mara is a development information specialist with extensive academic experience in financial management. Laura McPherson is a rural development specialist with worldwide field experience, including participation in earlier Bureau for Program and Policy Coordination evaluations. She was the Deputy Division Chief for Rural Development with USAID/Somalia.

All of those with whom the team worked viewed this study as a cooperative effort. All understood that the lessons to be learned would be made available to other development specialists. We cannot name all who assisted the team. Those who attended the workshop on development management in Africa, and who first helped the team "get a handle" on the subject, are listed in the report of that workshop. AID Bureau for Africa and central bureau staff helped the team understand the policy and historical backdrop for the project.

In Kinshasa, the USAID Director put the Mission resources at the disposal of the study team. The Agriculture and Rural Development Officer, the Project Officer, and the Zairian Assistant Project Officer gave liberally of their time. They provided background files, made appointments, and worked out complicated logistical arrangements.

Contractor staff and their families at the project sites of Kongolo, Mbulula, and Nyunzu made the study team welcome. They opened their homes and workplaces to ensure that we understood the complexity and difficulty of working and living in the bush 1,000 miles from Kinshasa.

Zairian project personnel contributed not only to the success of the project, but also to the lessons learned from this study. In Kinshasa, Lubumbashi, Kongolo, Mbulula, and Nyunzu, Zairian personnel entered fully into the spirit of this study. They shared information and worked into the night helping the team analyze data. They rode with the team in the back of trucks over bush tracks to visit villages, demonstration plots, and blacksmith shops, to inspect roads, bridges, and culverts. Their families and children showed the hospitality and cooperation that went a long way toward explaining why PNS was a success.

We must cite the help the team received from the Zairian Project Director. His encouragement, patience, and participation

helped overcome language and cross-cultural difficulties. His deputy, the Assistant Director for Finance and Administration, demonstrated a deep understanding of the techniques and art of management. It was through his actions that we appreciated how highly professional were the management skills among Zairian North Shaba Rural Development Project staff. The Director of Public Relations visited us morning, noon, and night to ensure that appointments were in order and that protocol problems would not mar the team's work. To all other Zairian project staff, as well, the team offers full thanks.

Center for Development Information
and Evaluation
Agency for International Development
December 1985

PREFACE

The limited management capacity of developing country personnel and institutions is a common problem affecting the success of development projects. Although this problem is often identified, there is little understanding of what "capacity to manage" means and what interventions are possible to enhance this capacity. The Center for Development Information and Evaluation (CDIE) of the Agency for International Development (AID) has undertaken a series of studies to better understand the nature of these development management problems and to assess the impact of management development interventions that AID and host country project managers have employed.

This series began in September 1984, when all team members attended a workshop on development management organized by CDIE and the AID Africa Bureau and held at Easton, Maryland. Six country studies on agricultural and rural development projects in Africa were carried out between September 1984 and March 1985. A workshop to review the findings of the study teams was held in May 1985 in Washington, D.C. Synthesis reports will summarize and analyze the results of the studies and workshops and relate them to program, policy, design, and implementation requirements. Dr. Irving Rosenthal has been the CDIE coordinator for the series. This study of the North Shaba Rural Development Project in Zaire was conducted in October 1984 as part of the African phase of the Special Studies series on development management. Other project studies in this series were carried out in Kenya, Niger, Liberia, Lesotho, and Senegal.

SUMMARY

The North Shaba Rural Development Project (Project North Shaba--PNS) has been controversial from its inception. It was anticipated that the project's isolated location in a corner of the country would present a challenge to good management. Nevertheless, the Government of Zaire, for macroeconomic, balance of payments, and political reasons wanted a maize production project in the Shaba area.

The key substantive constraints to increased maize production and marketing in Shaba were (1) the lack of an effective system for testing and disseminating improved technical packages, (2) the difficulty of transporting production inputs, (3) the lack of a reliable grain marketing system, and (4) an exchange rate for the Zaire (the national currency) that discriminated against domestic production. Key management constraints were (1) inefficiency and corruption in the national Government; (2) insufficient knowledge by the Government and USAID of local agricultural and socioeconomic systems; and (3) physical isolation of the project zone, particularly the lack of adequate transportation and communication facilities for servicing project activities and personnel.

The response to the substantive constraints was a 10-year US\$31 million project (US\$19 million from the United States plus a US\$12-million equivalent from Zaire), with six subsystems: (1) agricultural research and extension, (2) development of farmer organizations, (3) production of agricultural tools, (4) improvement of marketing and credit systems, (5) improvement of farm-to-market roads, and (6) monitoring and evaluation of the program. The management constraints were addressed as follows: (1) recognition that a positive management strategy was needed to respond to the management constraints; (2) a fairly independent overall project organization under the direction of a fairly independent project management unit (PMU); (3) maximum delegation by the Government of Zaire and USAID of day-to-day project operating authority to a private (U.S.) contractor and local Zairian cadre who made up the PMU; (4) generous salaries and benefits to attract qualified local staff; and (5) greater than "ordinary" attention to administrative support and services, including special attention to project and personnel logistics.

Major substantive findings are that (1) the number of new and rebuilt roads and bridges achieved design targets, (2) production and marketing of maize exceeded project targets, (3) the general economic condition of the beneficiary population improved after the commencement of project activities, and (4) a higher farm gate price for maize was achieved. Although the last was not a stated goal of the project, pressure by PNS helped achieve this price increase, which had a positive impact on project success.

There are positive as well as negative findings on the project's management strategy. On the positive scale are the following:

1. An effective project management unit was established under the direction of qualified Zairian personnel.
2. The Government of Zaire provided motivated project cadre who were well trained and capable as managers.
3. The project achieved a high level of involvement by the local beneficiary population.

On the negative side are these findings:

1. The project had a shifting objective and goal, which were never fully understood by project stakeholders.
2. An effective bridge brigade was established to build and repair transportation infrastructure but, overall, insufficient attention was given, particularly during the early years, to sustainability of project accomplishments.
3. Only partial solutions had been found, in the final years of the project, for maintaining the institutional, personnel, and financial interventions after AID assistance ceases.

The team's general conclusions on management issues are as follows:

1. An in-depth understanding of the local socioeconomic and technical environment is a sine qua non of successful project design and effective project management.
2. A development project tends to be more successful if its design is administratively simple and its management enhancement interventions are integrated into local social and production systems.
3. More complicated projects require that greater time and money be devoted to management considerations. Similarly, the timeframe for achieving project goals must be longer.
4. Where the larger context within which the project is located is administratively difficult, it may be more appropriate to design a project that works around, and is not a part of, the established system.

5. Although short-term accomplishments fostered by expatriates can be instrumental in convincing beneficiaries to accept longer term solutions, it is more important in the long run to train local personnel at all levels to carry out project activities, even if this temporarily slows implementation.

PROJECT DATA SHEET

1. Country: Zaire
2. Project Number: 660-11-199-059
3. Project Title, Goal, and Purposes:

Original Title: North Shaba Maize Production

Original Goal: Self-sufficiency in maize production

Original Purpose: To identify an effective rural development process for improving small farmer production and income

First Amend. Title: North Shaba Rural Development

First Amend. Goal: Same as original

First Amend. Purpose: To increase small farmer income by 75 percent as a result of raising maize; to develop a rural development process that is replicable in other parts of Zaire

Second Amend. Title: North Shaba Integrated Rural Development

Second Amend. Goal: Self-sufficiency in food crops

Second Amend. Purpose: To develop institutions that can sustain increased production and marketing of agricultural produce

4. Funding Sources:

	<u>Date</u>	<u>Amount (in US\$1,000s)</u>			<u>Years</u>
		<u>United States Grant</u>	<u>Zaire Loan</u>	<u>Zaire LC Equiv.</u>	
Original Project Agreement	9/76	6,291	3,500	9,744	6
First Project Amendment	7/80	3,634	-	-	1
Second Project Amendment	5/83	5,200	-	2,760	3
Total Obligated		15,125	3,500	12,504	10
Total Project Expenditures as of 9/30/84		10,300	3,500	N/A	

PROJECT DATA SHEET (cont.)

5. <u>Selected Project Outputs:</u>	<u>1980 Goal</u>	<u>Accomplished</u> (6/30/84)	<u>%Goal</u>
Produce maize	40,000 MT	122,137 MT	250
Market maize	25,000 MT	45,000 MT	180
Produce small tools	8,163	33,525	400
Improve/repair overpasses	72	119	165
Improve/build roads	724 km	732 km	101
Establish farmer groups	40	38	95
Establish agricultural centers	75	60	80
Reach farm households	19,000	14,445	76

6. Host Country Currency: The Zaire, or "Z," exchange rate has ranged from US\$1:Z1 in 1976 to US\$1:Z42 in 1984.

GLOSSARY

AC (SS/AC)	- PNS Subsystem for Marketing
ADAF	- Assistant (or Deputy) Director for Administration and Finance of Project North Shaba
AF	- Administration and Finance
AID	- U.S. Agency for International Development
AV (SS/AV)	- PNS Subsystem for Agricultural Technology Adaptation and Extension
BCZ	- Commercial Bank of Zaire
CAC (SS/CAC)	- PNS Subsystem for Commercialization and Credit, renamed SS/AC in 1983
CAD (SS/CAD)	- PNS Subsystem for Collection and Analysis of Data, also called SCAD
Cadre	- Tenured civil servants of Government of Zaire
CDIE	- AID Center for Development Information and Evaluation
CDSS	- AID Country Development Strategy Statement
DGF (SS/DGF)	- PNS Subsystem for Farmer Group Development
FAO	- Food and Agriculture Organization of United Nations
GECAMINES	- International Copper Consortium, Zaire
IBRD	- International Bank for Reconstruction and Development
IMF	- International Monetary Fund
INFRA (SS/INFRA)	- PNS Subsystem for Infrastructure, renamed PRE
ONACER	- Zaire National Cereals Office
ONPV	- Zaire National Office of Food Production

- PNS - Project North Shaba (see various other names on Project Data Sheet; this is the most common)
- PNM - Zaire National Maize Project
- PMU - PNS project management unit
- PPC - AID's Bureau for Program and Policy Coordination
- PRE (SS/PRE) - Infrastructure Subsystem of PNS now managed by Estagrigo (formerly SS/INFRA)
- PVO - Private Voluntary Organization
- RV (SS/RV) - PNS Subsystem for Agricultural Research Adaptation, and Extension, renamed SS/AV
- SCAD - Short name for SS/CAD
- SS - Subsystem in PNS management structure
- USAID - AID Mission in Kinshasa, also called USAID/Kinshasa
- Z - "Zaire," the unit of currency in Zaire



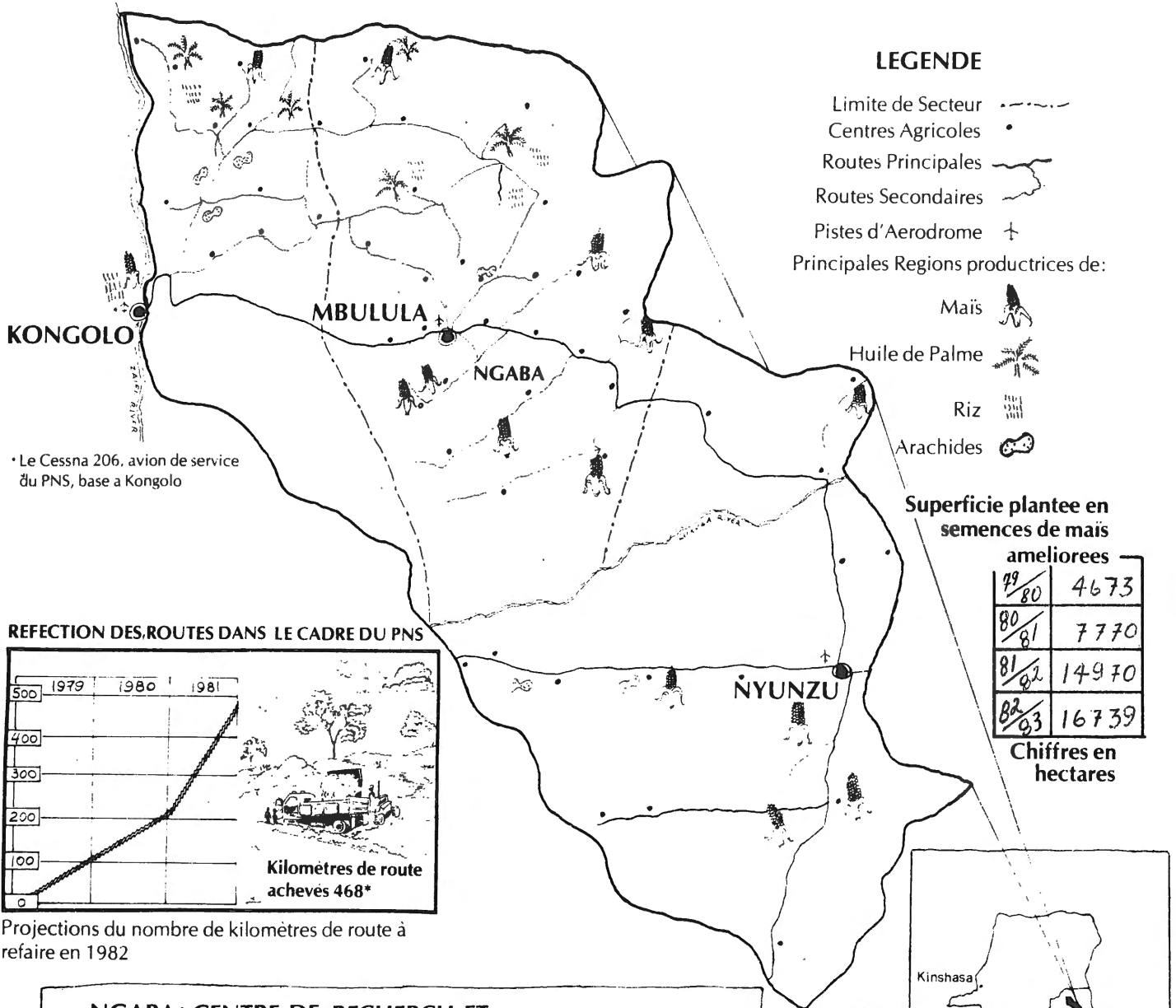
Zaire

- International boundary
- - - Region boundary
- ★ National capital
- ⊙ Region capital
- +—+— Railroad
- Road

0 100 200 Kilometers
0 100 200 Miles

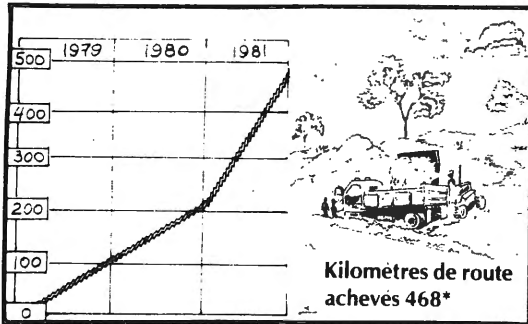
Boundary representation is not necessarily authoritative.

PROJET NORD SHABA

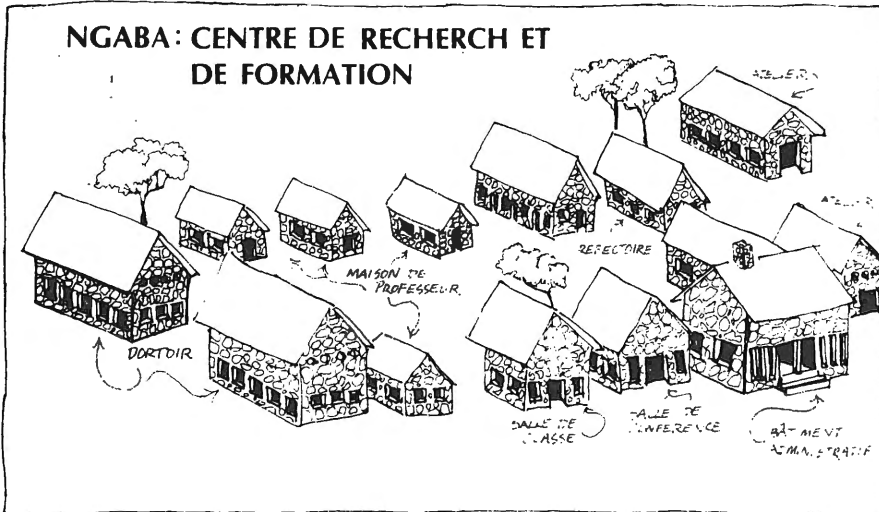
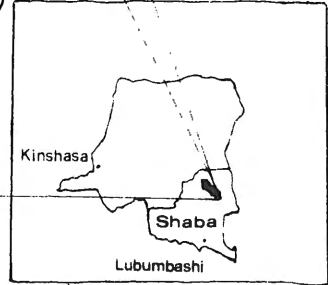


* Le Cessna 206, avion de service du PNS, base a Kongolo

REFECTION DES ROUTES DANS LE CADRE DU PNS



* Projections du nombre de kilomètres de route à refaire en 1982



1. COUNTRY DEVELOPMENT MANAGEMENT SETTING

1.1 Overall Economic Management

The first 7 years following Zaire's independence were marked by violent political strife. Large numbers of Belgian managers left the country, creating a manpower vacuum that led to further collapse of public and private institutions and organizational infrastructure. Institutional deficiencies, sociopolitical miscalculations, and mismanagement aggravated the situation. The "Zairianization" campaign and nationalization measures of 1973-1974 hurt the economy by destroying private sector confidence and sparked a further exodus of capital and managerial manpower. Poor Government budgeting, lack of controls over expenditures, and heavy external borrowing created long-term liabilities from which inadequate return has been forthcoming. In the last 2 years, with the cooperation of international donors, progress has been made in defining development policies and actions necessary for recovery.

1.2 The Agricultural Sector

Agriculture is the primary means of support for three-quarters of the population. Growth in this sector is crucial to improved overall economic performance and a higher standard of living. However, production indicators reveal worsening conditions in recent years. In addition, rural services have deteriorated. Most villages lack roads, medical facilities, clean drinking water, and many consumer goods.

Agricultural production systems in Zaire are based uniformly on traditional, labor-intensive practices. Mechanization is not widely used; proven low-risk technology is preferred to new sophisticated methods. The farmer determines levels of both food and cash crop production, first by the availability of a market and subsequently by technology or efficient use of labor and inputs. Fertilizer, rarely available, is usually too expensive for the farm household. Village-level food crop storage techniques save only 50 to 60 percent of the harvest.

Major constraints to sustained agriculture sector growth are found in planning, marketing, research and extension, and production areas.

Over the past decade, for example, Government overregulation and lack of data hampered development of effective agricultural policy. Within the past 2 years, however, the general policy climate has improved--a function of deregulation and Government

of Zaire support for the private sector. With U.S. Agency for International Development (AID) project assistance, the Ministry of Agriculture is developing policy staff for data collection and analysis and the formulation of policy options.

Agricultural marketing is a formidable undertaking, even in the best of circumstances, when some three million farm families live in about 70,000 villages dispersed over a million square miles. In Zaire, almost the worst circumstances prevail. Maintenance of road, river, and rail routes is given insufficient attention. Transportation services are nonexistent in some areas, irregular in most, and inefficient and costly when available.

Government research and extension institutions are politically resilient, but functionally inadequate. The Government research establishment has posed obstacles to research outside that establishment, while producing no applicable research itself. The Department of Agriculture's extension service has found little to extend and has degenerated into a force of petty harassers.

Agricultural planning has neglected the traditional farmer. An effective system for delivering better technologies to the small farmer has not been put into place, nor is there encouragement of production for market. This is unfortunate because yield increases under traditional cultivation are possible by technical improvements such as increasing density, weeding, and timely planting, and by creating time-saving techniques.

1.3 Development Management

The development management setting in Zaire is characterized by weaknesses in the management of public and private sector institutions, and general shortage of well-trained professional, managerial, and technical personnel. Other conspicuous features of Zaire's public administration are the lack of productivity and heavy political influence in the determination of administrative priorities. The size of the country, strong kinship and ethnic ties in thousands of clan groups, widespread poverty, and disparities in socioeconomic conditions exacerbate the failure of the administrative system. Political and administrative positions are too often used for personal and clan profit. Public servants have been locked into institutionalized corruption by social pressure and by the inadequate public sector wage structure.

A unique aspect of the development management setting in Zaire is the institutional arrangement under which the state, church, and private sector all have roles in the delivery of what

are, in the West, normally public sector services. Given the ineffectiveness of most of the public sector bureaucracy, these alternate means for delivery of services are a key consideration in the shaping of the U.S. assistance program in Zaire in general and the North Shaba Rural Development Project (Project North Shaba, or PNS) in particular.

Prior to independence, the colonial authorities supported private investment, forced recruitment of labor, and compulsory production of food for the mining camps. Social programs were provided by private companies to stabilize their work forces. They undertook infrastructure projects, in particular the construction and maintenance of roads and the clearing of waterways. The impending transfer of PNS to a private sector company must be seen as a continuation of the pattern for development management in Zaire.

2. PROJECT DESCRIPTION

The project zone, North Shaba, is in an isolated, southeastern portion of the country, 1,000 miles beyond the effective control of the central Government in Kinshasa. Its population consists of numerous ethnic groups, some harboring hostility toward the central Government. Indeed, in addition to macroeconomic reasons for wanting the project, the Government chose this site to extend its influence into the region.

Before independence, North Shaba was a highly productive agricultural zone. It provided a substantial part of the food for South Shaba, also an isolated area but having major copper and diamond mining enterprises. In developing PNS, the Government wanted a highly controlled, collective-farm type of project using large amounts of fertilizer and other inputs to achieve high levels of production, an operation much like the Belgians had had during the colonial period. USAID insisted on designing an integrated rural development project in cooperation with the small farmer. The USAID position prevailed in the management strategy for the project, while the Government prevailed in the location of the project.

USAID and the Government of Zaire signed the first Project Agreement in September 1976 for US\$9.8 million, including a US\$3.5 million loan, for a 6-year project. A 1980 amendment extended the life of the project by 1 year and added US\$3.6 million in additional grant funds. A 1983 amendment extended the project an additional 3 years and added US\$5.2 million in grant funds for a total U.S. contribution of US\$13.6 million. The Government of Zaire agreed to contribute the equivalent of an additional US\$12.4 million in local currency. Over the 10-year project the United States and the Government of Zaire agreed to provide a total of US\$31 million.

The original purpose of PNS was to identify an effective rural development process for improving small farmer production and income. This was part of the larger goal of helping Zaire achieve self-sufficiency in maize production and of alleviating the balance of payments impact of maize imports. The project was designed to overcome three major constraints to achieving that purpose: (1) the lack of an effective system for testing and disseminating improved technical packages, which were compatible with the production system of small farmers; (2) the lack of an adequate transportation network that would provide reliable access to production inputs; and (3) the lack of a reliable grain marketing system.

The management plan for the project included a project management unit (PMU) and six substantive subsystems. The subsystems and their objectives are as follows:

- Research/adaptation/extension
 - Open 75 agricultural centers
 - Reach 19,000 agricultural households
 - Increase maize production to 49,000 metric tons
 - Produce and extend adapted seed to Shaba farmers
- Farmer group development
 - Create 40 precooperative farmer groups
 - Organize farmer groups into 25 farmer councils
- Intermediate technology
 - Design, develop, and produce improved small agricultural tools
 - Train 80 local blacksmiths
- Marketing and credit
 - Provide access to marketing by such means as credit, trucks, and gasoline
 - Increase maize marketing to 25,000 metric tons
- Infrastructure
 - Rehabilitate 724 kilometers of agricultural marketing roads

- Repair or construct 55 bridges and culverts
- Data collection and analysis
 - Collect agricultural production and marketing data
 - Analyze data and write special reports to aid management decisions

3. PROJECT ANALYSIS AND FINDINGS

3.1 General Findings

3.1.1 Project Accomplishments

PNS achieved quantifiable successes. Some specific indicators of accomplishments during the first 7 years of the project are presented in Table 1.

Table 1. Indicators of PNS Success During First 7 Years

Indicators	Goal (9/76)	Accomplished (6/30/84)	(%)
Produce Small Tools	8,163	33,525	400
Improve/Repair Overpasses	72	119	165
Improve/Repair Roads	724 km	732 km	101
Establish Farmer Groups	40	38	95
Establish Agricultural Centers	75	60	80
Reach Farm Households	19,000	14,445	76
Produce Maize	40,000 MT	122,137 MT	250
Market Maize	25,000 MT	45,000 MT	180

At least one macroeconomic factor external to the project contributed to the achievement of project goals. When the project was authorized in 1976, the exchange rate for the Zaire was approximately Z1 = US\$1. The black market rate was substantially higher. Because it was cheaper, therefore, to import maize from abroad, the market for domestic maize was limited. Today, with a more realistic exchange rate of Z42 = \$US1, the situation is reversed. Domestic maize is now cheaper than imported maize,

even though the price paid to the farmer has increased dramatically. As a result, the demand for domestic maize has become almost insatiable. The maize farmers, the project's principal beneficiaries, are in the enviable position of being able to sell all the maize they produce and at a higher real price. Project success was, therefore, a result both of project interventions and external macroeconomic policy changes. The two are mutually reinforcing and, in this case, the project can take some credit for influencing the price changes.

3.1.2 Project Goals and Objectives

There has been a lack of concensus among the Government of Zaire, AID, and the contractor on the priority of project goals, that is, whether PNS was a food production project concentrated on maize or a rural development project designed to improve farmer income. The original project design was overly complicated if PNS's principal goal was production oriented. That is, production and marketing were capable of being improved through the infrastructure and extension (including seed multiplication) subsystems alone. On the other hand, the project design was inadequate, at the time of this study, if its principal goal was to achieve long-term, sustainable rural development. That is, under the broader goal, the farmer group development and intermediate technology subsystems should not have been terminated and the data collection and analysis and the marketing and credit subsystems should have been strengthened.

In 1980 and again in 1983, USAID amended the Project Paper. While the "goal" of the 1980 amendment remained the same as in the original Project Paper, the purpose introduced some confusion between the concepts of "production" and "development." The 1980 amendment also stressed "replicability," a purpose not given much attention in the original Project Paper. In the 1983 amendment, the purpose was modified further to include development of institutions that could sustain increased production and marketing of agricultural products in general. The project goal was also modified to include self-sufficiency in food commodities. That is, the goal was expanded from a narrower maize production to a more general food production goal and the purpose was expanded from improving a rural development process to a broader institution-building purpose.

We could conclude that project management (i.e., AID, the Government, the contractor) did not have a long-term strategy for this project. Alternatively, it could be said that project management showed flexibility in redesigning activities in response to changing circumstances.

3.1.3 Project Sustainability (and the Private Sector)

Although AID's 1981 policy of encouraging the private sector in development appears appropriate to Zaire, application of the policy to PNS after 6 years of public sector management may not contribute to sustainability after AID funding ceases. PNS was established as a semiautonomous, public sector entity funded by AID dollars and AID-generated local currency counterpart. Six years into the project USAID and the Government began to focus on issues of project sustainability. The options included (1) continuing the project under some form of semiautonomous, semipublic direction; (2) integrating some form of the project into the regular national/regional bureaucracy; or (3) finding a private sector solution. The first option seems to have been discarded without study. Recognition by the Government of Zaire and USAID of the Government's continued management incapability obviated the second option. The third option seemed feasible because of the existence in Shaba Province of a private company, Estagrigo, that was willing to assume responsibility for the project.

The third option was of interest to USAID because it fit AID's new private sector strategy. The contractor, however, was opposed to this option. Although there was resistance among certain Zairians, the Government supported this solution because it fit with its approach of turning over programs to local churches or private organizations. Much of the opposition had to do with the nature of the private company. Estagrigo was owned by ex-colonial Belgian interests and had 32-percent Government participation. The company is managed principally by expatriate personnel, although one top position is filled by a Zairian. To consider Estagrigo a local, private enterprise, therefore, may be stretching a point.

Estagrigo's primary interest was the production and marketing of cotton, which under certain circumstances could be competitive with maize. At the time of this study, AID, the Government of Zaire, and Estagrigo were negotiating the integration of PNS into Estagrigo. We cannot predict the outcome of the negotiations or how Estagrigo will manage PNS. Some discrete PNS subsystems and components will no doubt be sustained, although the overall sense of a coordinated package of goods and services will most certainly disappear as the private company begins to consider profits rather than larger social goals. On the other hand, if increased maize production and marketing are beneficial to the private company as well as to the individual farmers, both would benefit. Although the discrete entity known as PNS will certainly disappear, its production and marketing goals could well be sustained under private sector direction and a number of private and public institutions could carry on independently the several PNS initiatives.

3.1.4 Implementing Agent

The choice of one contractor for project design and implementation, and the relative independence of that contractor on project decisions, introduced a third force to PNS that may have complicated project management. USAID and the Government of Zaire delegated maximum authority for day-to-day management to the U.S. contractor. USAID made this decision because AID procedures made it difficult for USAID to manage directly a project 1,000 miles from the capital without cable, mail, or telephone contact between USAID headquarters and the project site. The Government of Zaire did have an administrative structure that reached down to the individual farmer, but it was not capable of managing such a complicated development project.

Although by mid-point in the project the Government did assign senior, qualified Zairian cadre to the project, the Government did not object, at least in the early years of the project, to the management of the project by the U.S. contractor. Although this management approach contributed to short-term production and marketing success, it minimized the training of Zairian personnel and reduced the chances for long-term sustainability under Zairian direction.

3.2 Contextual Factors Relating to Management

3.2.1 Sociocultural Tradition

Given its sociocultural tradition and management heritage, North Shaba was probably not the best place to attempt a participatory development strategy. The transient and hierarchical Luba ethnic group of the eastern project zone was not interested in forming cooperative groups. The Luba moved frequently in order to maintain soil fertility in the forest regions they cultivated. The less cohesive Hema had difficulty operating outside established lineage spheres. Choosing one person to rule a group of independent lineages was not looked upon kindly, and jealousies remain to this day.

These sociocultural obstacles to cooperation among local populations were compounded by colonial rule. During the 1950s, under the paysannat system, the Belgians forced the people of the zone to settle in fixed villages and to farm under production quotas. This treatment resulted in mistrust of anything organized by the central Government or other "foreigners." The concept of the farmer group development subsystem--of democratic, broad-based farmer councils, cooperatives, and agricultural centers to channel ideas between farmers and the project--was at

cross purposes with local sociocultural tradition. Even energetic project management could not change these basic sociocultural values in the short time available to the project. The farmer group development subsystem did not succeed and was terminated early.

PNS extension workers did convince individual farmers to establish demonstration fields, sometimes with guarantees of produce to offset risk. Under this plan, farmers and their neighbors could see results and, individually, adopt new methods as they wished. Thus, instead of the original management strategy of community action, which might be appropriate elsewhere, farmers were able to observe passively and choose to participate on an individual basis.

3.2.2 Beneficiary Perceptions of the Project

The effectiveness of PNS was strengthened by its acceptance as a legitimate and reliable provider of agricultural services to the local population. PNS's legitimacy was achieved by providing goods and services that met the population's needs. For example, the project provided low-cost adapted seed and improved cultural practices that led to rapid increases in maize production. The infrastructure subsystem improved roads that were used by merchants and their trucks seeking to buy maize. And the technology subsystem put at the disposal of the farmers small tools that were otherwise unavailable.

PNS's legitimacy with the local authorities was strengthened by actions that demonstrated concerns beyond the mandate of the project. The project's electrical generator, for example, was connected to the Kongolo hospital so that it could provide backup power in an emergency; PNS sold gasoline when no one else had any; it sent courtesy messages over its radio channels for local businessmen; it provided project vehicles to transport the sick; it permitted the repair of Government trucks at the project garage when special skills were needed; and it authorized use of the PNS guest house for important visitors not directly associated with the project.

These actions helped develop a sense of participation in the project and a vested interest in its success on the part of farmers and local authorities. This integration with the local community helped overcome the project's physical isolation. It helped maintain dialogue with the local population and avoid potential misunderstandings.

3.2.3 Distance and Isolation

PNS functioned well in a remote, isolated, and difficult location because of its emphasis on logistics, use of formal and informal communication channels, and specific concern with "creature comforts." The isolation of the project zone was an anticipated management constraint. It was faced head on with specific management attention and extra financial resources. PNS invested in radio linkages to substitute for telephones. The project bought a plane because airlines did not fly to the zone. The project never stinted on payments for charter planes for freight, personnel, or management needs. Judicious use of the PNS plane and charters kept links with the outside world open and provided an opportunity to send and receive mail, newspapers, and the like. Logistics officers experimented with virtually every means of transport, including use of ports in east and southern Africa.

Both AID and the contractor gave maximum support to the personal as well as professional requirements of field staff. Frequent socializing in Kongolo built team spirit between Zairian and expatriate staff. Zairian cadre and expatriate management personnel lived in the same type of housing, with similar furnishings and limitations.

There were certain benefits to the remoteness and isolation. "Headquarters" pressures on the staff were not as great as they might have been in a more accessible location. Requests for additional work could take time to fulfill because of "logistics" problems. Outside visits could be controlled. And with little else to do in Kongolo, people tended to work more than an 8-hour day. The project zone was physically isolated, but attention to that problem assisted in making work productive and helped achieve project success.

3.3 Organizational, Structural, and Institutional Considerations

3.3.1 External Coordination

The PNS structure, although internally well administered, did not have important external management linkages. The project steering committee, for example, created in Kinshasa to address working-level problems and monitor project progress, met infrequently. The project's official contact with the Government in Kinshasa during the first 7 years was the Office of Studies and Planning in the Ministry of Agriculture. Although one key official maintained links with the project and thus provided liaison and support, his office was not a very useful institutional

backstop. PNS reports were sent to that office only irregularly. When they were, it was difficult for the Government to use the data for management decisions because the PNS data classification did not match that of the Department of Agriculture. Few field inspections of the PNS site were made in the early years. Beginning in 1984, the Government created a new Office of General Project Administration in Kinshasa to coordinate all donor-supported projects. PNS will, however, be terminated before this office becomes effective.

PNS had somewhat closer contact with the regional Governor in Lubumbashi and the zonal Commissaire in Kongolo. These Zairian officials were concerned with the security of the local area. It was in their interest to ensure that farm production increased, that farmers received fair prices, that the transportation and marketing systems worked, that maize produced in Shaba stayed in the province to feed its miners and urban populations, that the military was not disruptive (as they had been before PNS came to the area), and that the local civil authorities were supportive. Project management, therefore, was solicitous of these local authorities. However, neither the Governor nor the Commissaire had the funds or authority to make a significant impact on the project. In most respects, then, PNS operated independently from Zairian Government administrative authority.

Linkages with USAID seemed closer, perhaps because USAID provided the dollar resources and authorized the release of counterpart funds. USAID was involved in negotiations with the Government on PNS agreements and major policy matters and supported the contractor with logistics and communications. USAID/Kinshasa staff made periodic visits to the site. The project was reviewed at the USAID quarterly project meetings. Its principal external authority was the U.S. Government, which some Zairians feared as the new colonial power and others catered to as the new grand patron (replacing the Belgians).

In day-to-day project management, then, PNS operated fairly independently, with little outside contact or coordination. Project success was achieved within the context of PNS and with minimum external interference.

3.3.2 Levels and Independence of Project Direction

The organization of PNS as a separate, semiautonomous authority was appropriate to its unique geographic and institutional context. Although PNS was administratively independent, it was neither a private, profit-making institution nor a public institution authorized to tax or otherwise raise money. It was not a "legal" entity and depended entirely on AID and the Zairian Government for financial resources. Nevertheless, PNS made

financial commitments and signed contracts in its own name; maintained bank accounts and collected and dispensed money; negotiated with Government and private entities; hired, disciplined, and fired staff; owned and discarded property; and established its own rules of operation.

3.4 Administrative Process Interventions

3.4.1 Authority

PNS management tried explicitly to decentralize and delegate authority within the project structure. PNS was created as a semiautonomous organization, with authority delegated externally to senior cadre in the project management unit (PMU). The PMU strengthened the authority of middle management through the redelegation of its own authority. Authority also was given to PNS field agents in direct contact with the farmers. Such redelegation, however, required clarification of objectives and roles of individuals and subsystems, but the level of attention needed to do this was never satisfactorily achieved. There was a particular problem, for example, between the data collection and analysis subsystem and the administrative officers in Kongolo, Mbulula, and Nyunzu concerning who was to collect the field data. Mixed as it was, the decentralized authority did serve to enhance a sense of ownership of the project among PNS staff. Not everyone knew exactly what they were supposed to do or why, but they knew that they were in charge. Given the strong centrist tendencies continuing since colonial times, it was a challenge for PNS to decentralize. The assumption of authority and responsibility by Zairian project staff proved to be effective, contributing, in part, to project success.

Authority at the top of the project has been an unresolved management problem. In the early years, the project was dominated by expatriate personnel. Even today, with the departure of expatriate staff imminent, the American Chief of Party still must sign off on dollar expenditures. Although all agree that Zairians should be in charge, expatriate staff continue to assume great responsibility, while the Zairians continue to take a less aggressive management role. Although Zairians are certainly learning the technology of management, they do not always act as principal officers or exercise final management authority.

3.4.2 Information and Management

PNS responded positively to problems that plagued its information gathering, monitoring, and evaluation activities. These activities were designed to be located in three organizational units. The research and extension subsystem was to collect farm-level production data through its agricultural and extension staff. An Assistant Director for Administration and Financial Management was to be responsible for establishing management procedures for the PMU to direct the preparation of financial reports and statistical data on the management of funds. The data collection and analysis subsystem was to be responsible for data collection for planning, monitoring, and evaluating project activities. That is, one unit was to collect technical information, one was to collect management information, and one was to collect some of both. This information was to be analyzed and disseminated to decision-makers to assist them in overall planning, operational decisions, and impact monitoring.

The design of the information system, however, was over-ambitious in scope, considering (1) the amount and variety of data to be collected, (2) the level of experience and training of local staff, and (3) the lack of detailed work plans, including time and cost estimates for specific activities. The data collection and analysis subsystem also had insufficient formal guidelines for handling information requests from AID, Department of Agriculture, other Government officials, or even short-term consultants. Ad hoc requests often undermined the concept of work plans and prevented accomplishment of perhaps more important analyses.

PNS should be praised for the attention given in the project design to the management of information. The PMU must be criticized, however, for the lack of attention given to this function during implementation. Although the original scope of work assigned to the Deputy Director/Chief of Party half-time responsibility for supervising and guiding information gathering and evaluation, operational matters took virtually all his time. While the quality of analysis was beginning to become respectable by the time of this study, effective use of the data for management decision-making had not yet been achieved. Perhaps the project did not need to have such a sophisticated subsystem to achieve relatively straightforward production goals. On the other hand, it is disappointing that PNS did not go that last step, once it had a functioning information-gathering system, to improve the analysis and use of information.

3.4.3 Decision-Making

Many management decisions seem to have been ad hoc rather than based on detailed information analysis. Some long-term planning decisions were made without full consultation. With an internal structure that dispersed responsibility to different levels and units, PNS needed some focus, in terms of either overall project goals or a firmer internal definition of responsibility. This did not exist. The PMU that was to set the direction of the project was, in the early years, at least, preoccupied with logistics and "crisis management," leaving little time for forward, analytically based decision-making.

Nonetheless, action decisions were made by middle-level staff and operating personnel. The lack of centralized direction could have led to paralysis of the project. Instead, it may have been a contributing factor to the maturation of PNS staff as managers and their sense of project ownership. Leaving them to make decisions on their own was, perhaps, not the ordinary way to train staff, but it did make a contribution to individual and institutional management development. PNS, at least at the middle and operating levels, created an interesting method for teaching management decision-making.

3.5 Resource Input Management

3.5.1 Financial Management

Although financial records and accountability improved over the life of the project, particularly after PNS hired an experienced Zairian Deputy Director for Administration and Finance, PNS did not have in-depth information on local currency transactions and was unable to provide reliable financial data for planning and reporting purposes. Until 1983, PNS was hampered by the absence of budgeting procedures and financial management for long-range planning, monitoring, or evaluation. Lack of documentation was the rule. Among the many omissions were standard records such as journals, ledgers, balance sheets, and reconciliations. Exacerbating this handicap was the failure of the Government to meet its promised funding levels to PNS. The project generally received less than 50 percent of the funds requested from all Government sources. In the beginning, these shortcomings can be attributed to the contractor, who did not provide qualified financial management technical assistance. Financial management began to improve in March 1983 when an experienced Zairian was hired as the Deputy Director for Administration and Finance. The infrastructure subsystem, for example, could now provide figures on the cost of maintaining a section of road or

the construction of a new bridge. The adaptation and extension subsystem could develop unit costing for the multiplication of certified maize seed.

By the time of this study, the accounting section within PMU appeared to be functioning better. Members were assigned their own areas of responsibility, but each knew the duties of others and could fill in if needed. Records that the evaluation team asked for were promptly retrieved from well-organized files.

Although few financial irregularities surfaced during the life of the project, evaluations and audits consistently criticized PNS for lack of anything resembling a financial management system. Project personnel told us that this was because no Zairian could be found for the senior financial management post. Today, however, experienced financial management personnel are available. To recruit accountants and bookkeepers, PNS asked for help from a private sector accounting firm. PNS also paid salary premiums and tried to build up team spirit among the project's financial personnel to ensure their continued high-level performance and to reduce turnover.

Impact on project performance of both poor and improved financial management is assumed but cannot be demonstrated. Because USAID/Zaire handled most of the dollar accounting, and because contractor staff double-checked most of the local currency accounting, it may be that only basic accountability and simple record keeping would have been required of Zairian personnel in this project. One cannot be sanguine, however, about what would have happened had the project been any larger or the resources more limited.

3.5.2 Logistics and Commodity Management

PNS responded to the isolation of the project zone caused by lack of transportation and communication by giving special management attention to these constraints and applying extra resources to their improvement. A key to overcoming these constraints was to recognize them and exercise creative management to overcome them. A first step by PNS was to establish a logistics unit. At the time of this study, the unit numbered 12 Zairians in Kinshasa, 4 in Kongolo, and 2 each in Mbulula and Nyunzu. A full-time expatriate logistics adviser was assigned to the Kinshasa logistics office. The contractor Chief of Party supervised the logistics staff in the project zone. For commodities that could not be purchased locally (virtually everything), formal links were established with the contractor's home office in the United States. Long-term contracts were signed with major commodity suppliers, such as oil companies and freight forwarding companies in Matadi, Zaire's major ocean port. The thrust of

these actions was to tackle logistics as a professional operation and not, as is too often the case, to assign it as the part-time duty of some otherwise occupied officer.

3.6 Human Resources Development and Management

3.6.1 Beneficiary Farmers

Project-zone farmers did not take easily to group actions such as those included under the farmer group development sub-system. They were not inclined to take much risk in the management of their economic life, yet some changes did take place. That is, although farmers did not like the taste of the new maize and although the women complained that the new grain was more difficult to pound into flour, the increased economic return from the improved seed, new cultural practices, more efficient marketing system, and higher prices was a powerful incentive. This incentive encouraged farmers to make changes in their farming practices that led to increased production.

Farmers preferred to maximize their independence of action. The more successful parts of the project were the provision of improved seed, which the farmers could buy--or not--and increased farm gate prices, to which they could respond--or not. This more individual approach, rather than the farmer councils or cooperatives, was the more effective way to manage farmer participation, at least in this project zone.

3.6.2 Project Personnel

The Zairian Government made a generally successful effort to provide a well-trained, experienced, dedicated, and competent Zairian cadre. At the height of its operation, PNS had approximately 800 employees. At the time of the study, the number of Zairian employees was 511. Table 2 provides information on the distribution of Zairian and expatriate project staff.

At the time of this study, fully half the PNS cadre had been with the project for 5 of its 7 years. This loyalty resulted in part from a strong belief in the purpose of the project. Project loyalty was fostered by PNS's positive personnel management, including relatively high salary levels and a concern for employee health and benefits. PNS management style also encouraged an attitude of participation by project employees.

Table 2. Distribution of PNS Employees by Unit and Subsystem, 1984

Subsystem	Zairian			Expatriate Technical Advisers
	Local Staff	Government Cadre	Total	
Project Management Unit	0	3	3	1
Administration/Finance	180	7	187	0
Kinshasa Logistics Unit	9	3	12	1
Adaptation and Extension	128	8	136	2
Data Collection/Analysis	12	3	15	0
Marketing and Credit	17	1	18	0
Infrastructure	137	3	140	3
Intermediate Technology	0	0	0	0
Farmer Group Development	0	0	0	0
Total	483	28	511	7

Cadre came from seven of the eight Zairian regions; 5 of the 26 cadre were from Shaba Province. That is, despite Zairian concern with ethnic differences, PNS was able to draw support from all parts of the country. Although few cadre volunteered to go to Shaba and several who were assigned by the Department of Agriculture refused to go, potential difficulties resulting from ethnic differences were avoided by sensitive project management. Over time, ethnic and project/local community intermarriages blurred regional differences, making for a more cohesive project.

The educational level of PNS cadre was relatively high. All but four were at a level at least equivalent to a U.S. bachelor's degree; six were at a level equivalent to a U.S. master's degree. Middle- and operating-level personnel had similarly extensive education. Much of the project success can be attributed to this prior education and experience of its staff. The project did little, however, to build on this educational base. Actual and planned training programs were minimal. During the 7 years of the project, with a staff ranging between 500 and 800 people, only 30 Zairians received anything resembling formal training.

Formal seminars or classroom training are not, of course, the only way to develop managers. Other techniques such as on-the-job and apprenticeship training can also be effective and were used by the project. But there was an overall lack of attention to training. One complaint from Government officials in Kinshasa was that, had sufficient attention been given to training of Zairian personnel, they could more quickly have taken

over direction of the project. Although credit must therefore be given to in-country training received by project personnel before they joined the project, the opportunity was missed to build on this base.

3.6.3 Technical Advisers

The caliber of contractor personnel was mixed. Government of Zaire (and AID) review of the work of individual advisers was less thorough than it should have been. Technical assistance to the PMU was probably better than to the subsystems. At least one of the two American advisers assigned to the PMU in the early years of the project remained associated with PNS throughout the project. However, contractor advisers gave insufficient attention to financial management and to data collection, analysis, and evaluation. Several advisers were assigned to work with the farmer group development subsystem. Their relatively high turnover contributed to the ambiguity of objectives. The caliber of the assistance provided through 1982 for research and extension was uneven, and no full-time assistance was provided for commercialization and credit activities.

The team was aware of only one instance in which an adviser was actually removed because of poor technical performance. Some people who were judged less than adequate were kept on. AID, the Government, and the contractor should have established more effective criteria for personnel recruitment and dismissal.

The isolation of the project zone was a continuous cause of difficulty in the recruitment of qualified advisers. The lack of housing and amenities contributed to the difficulty of maintaining advisers and their families. But a high caliber expatriate staff was in place at the time of this study. This may be the result of having substantially resolved the logistics and supply problems. It may also be the result of the reduced number of subsystems and a smaller overall project size. That is, project streamlining permitted more staff attention to be given to the remaining efforts. This made the whole project more manageable.

4. LESSONS LEARNED

4.1 General Lessons

1. Complicated, technical assistance projects should not be expected to achieve results in short timeframes. It takes at least a full generation (10-15 years) to learn new concepts, create new institutions, and develop new, applicable management approaches.

2. Short-term accomplishments often breed long-term success. That is, success is often needed to breed other success. Some investment in short-term actions that demonstrate immediate benefits may be a necessary first step to get farmers, government officials, and other participants to pay attention to suggestions for longer term, more sophisticated institutional changes and human resources development.

4.2 Contextual Factors Relating to Management

3. The probability of multiple project goals or purposes must be recognized. Project management should be flexible enough to meet multiple or changing goals and objectives. Priorities among different and potentially conflicting goals need to be re-evaluated periodically during project implementation.

4. Modification of project goals and objectives midway through a project's life should be attempted only after consideration of impact on internal as well as contextual management factors. This lesson refers more to changes resulting from action by external donors than to changes resulting from host country decisions--although even the latter situation would present special difficulties.

5. Informal and patron-client relationships can be a particularly positive force in Africa in establishing the legitimacy of a new institution. Careful attention to filling or not filling key positions with persons of specific tribal or ethnic backgrounds can help establish the organization's legitimacy in a local context and may be one means of decreasing the need to respond to local ethnic/tribal pressures for favors.

6. While the traditional sociocultural context in many African countries promotes informal networking, the establishment of new, formal linkages may also be necessary for sustaining the impact of a project. The use of informal channels to get things done must be fully understood and appropriately applied, but attention should also be paid to longer term institutional development in a formal organizational framework. Understanding the balance between the two is important for development management in Africa.

4.3 Organizational, Structural, and Institutional Considerations

7. AID and the host government should monitor technical contractor responsiveness to AID and host government policies. External contractors, no matter how competent, should not be given an entirely free hand to substitute for local personnel in managing projects.

8. Formal arrangements should be made for communication between units of a project engaged in collecting and analyzing data. Units should complement one another's efforts and reduce duplication of activity. Project census and demographic data, for example, should follow classifications that are comparable to those used by host governments so that linkages can be made.

9. Low-key or permissive central project direction can contribute to motivation of lower level staff. A sense of ownership by managers at all levels of the project should be fostered. Strong centralized structure and direction is not necessarily positive to effective management.

4.4 Administrative Process Changes

10. Attention to project phasing is important for ensuring project success. Actions such as training of host country personnel and ordering of equipment should be related to other project actions. The arrival of expatriate staff, for example, should be timed to permit them to work with newly trained managers or to advise on the use of new equipment.

11. Projects located in remote areas should plan well ahead for logistics and communications needs. Such projects should have flexible designs, use informal as well as formal support channels, attend to personal as well as technical and physical support needs, and establish logistics networks in the communities in which they are located.

12. Informal networks as well as formal channels of communication and authority should be supported and established. Formal systems include guidelines on who may and who may not authorize particular services and examples of what would constitute an "abuse of the system."

13. Monitoring and evaluation systems are necessary for effective project management. A monitoring and evaluation unit engaged in cost-benefit or cost-effectiveness analyses should be certain that financial accounting and reporting are parts of the data system.

4.5 Resource Input Management

14. Written financial, inventory, and other records are essential for modern, effective project management. For simpler and smaller projects, or where financial resources are ample and the need for equipment or commodities is minimal, the level of attention to these management factors should be adjusted appropriately.

15. Managers should be aware of all project funding resources and costs. Enhancing a host country capacity to manage project resources includes the knowledge and monitoring of donor as well as host country funds.

4.6 Human Resources Management and Behavioral Considerations

16. No matter how competent expatriate advisers may be, it is usually better for the long-term success and sustainability of the project to move local personnel as quickly as possible into positions of senior direction. Although expatriate managers might be used temporarily or to initiate a project or parts of a project, local personnel should be trained quickly and assigned leadership roles as soon as possible.

17. Careful consideration should be given to establishing not only technical and language qualifications, but also behavioral and management ability for the selection of expatriate personnel.

18. Management training for host government staff should be considered an essential part of any technical development program. Projects should have training plans suitable for the specific project personnel situation. Training plans should include management training to prepare host country personnel to quickly take over all aspects of project direction.

APPENDIX A

DESCRIPTION OF PROJECT SUBSYSTEMS

Presented in this appendix is a brief description of the project management unit (PMU) and each of the six substantive subsystems.

1. PROJECT MANAGEMENT UNIT (PMU)

Although the phrase "project management unit," or PMU, was used in the original project document to refer to the entire salaried staff working on PNS, the concept changed significantly, in terms of the locus of authority, from the very beginning of project implementation. The PMU, for most of the project life, was considered to be three people: the Project Director (a Zairian), the Deputy Project Director (an American until mid-1983, thereafter a Zairian, with the American retaining a position in the PMU as Contractor Chief of Party), and the Deputy (or Assistant) Director for Administration and Finance (an American through 1982; since then a Zairian). The rest of the staff--at its height some 800 strong--functioned in several substantive subsystems, each with its own specific responsibilities and authority. Authority for subsystem operations was delegated to middle management, resulting in decentralized management.

Although the authority of the PNS structure and the PMU was derived from the Government of Zaire in Kinshasa, legitimacy (beyond the legal sense) to operate on behalf of the small farmer of North Shaba took a while to establish. Early in the project life, with no specific agricultural technology and with often conflicting objectives among the various subsystems, the project had little to offer its beneficiaries. The PMU--perhaps wisely--accelerated work in the intermediate technology subsystem in order to have tools ready to offer the farmers. USAID, at the same time, negotiated with the Peace Corps to provide primary health care workers to the project zone. The resultant credibility was strengthened as the staff grew and local people assumed the majority of field-level positions. These people effectively "spread the word" about the project to their families and friends.

Personnel in the technical subsystems and administrative or area divisions practiced excellent communications and strong coordination in carrying out operations. Longer term planning and overall strategy and guidance were provided by the PMU. While communication from lower and mid-level management upward was impressive, communication of decisions downward was less smooth. A lack of comprehensive long-range planning by PMU and

continuing confusion over the relative priority of objectives limited efficiency overall.

The PMU and related subsystems and divisions operated autonomously for most of their existence. Formal linkages with a project liaison committee in Kinshasa were minimal. Thus, while internal project administration was strong, external management linkages were minimal.

2. RESEARCH/ADAPTATION/EXTENSION (SS/AV, formerly SS/RV)

The objectives of this subsystem, originally called research and extension (recherche et vulgarisation), were as follows:

- Design, test, and introduce maize (and, to a lesser extent, other crop) cultivation technologies tailored to existing farming systems
- Develop an institutional base in North Shaba capable of carrying out an adaptive research program and disseminating improved technologies to farmers
- Create a system fostering on-going communication among extension agents, farmers, and researchers

By all accounts, the research component of PNS was a failure. Perhaps the key contributor to this failure was the continuing lack of qualified expatriate personnel, including the chief of the subsystem. According to the original project design, the chief was to be an American agronomist with extensive experience in adaptive research and extension training. The position, however, was vacant for all but 3 months during the first 3 years of the project. Recognizing that research efforts were minimal, PMU changed the name of the subsystem to adaptation and extension (adaptation et vulgarisation), although even the term "adaptation" did not really reflect the situation.

This subsystem was most successful in persuading farmers to accept the improved Kasai I variety of maize. Estimates vary, but the best indications are that in 1984 over 50 percent of the farmers in the PNS area bought some 50 tons of seed (at half the production price), even though they had previously gotten the seed free during the first years of the project. Six tons were sold outside the PNS region for a price that was reputed to be the actual cost. Plans for 1984/1985 called for full cost recovery for the multiplication and sale of seeds.

The extension portion of this subsystem produced mixed results. Coverage of the area was good--PNS extension agents worked in 60 village centers in the project area, with over

14,000 households taking part. Although somewhat suspicious of the extensionists at first, villagers warmed to the cooperative, persuasive attitudes of PNS agents as opposed to the coercive tactics of the former colonial government and private sector extension agents, who forced farmers to grow certain crops and extracted unsanctioned payments from them.

The future for extension activities may be troubled. At the time of this study, discussions centered on integrating the three existing extension services in the project area--those of PNS, the Zairian Department of Agriculture and Rural Development, and the Estagrigo cotton company. Estagrigo is scheduled to take over all extension activities in the project area after AID involvement ceases. Several questions remain unanswered. Will Estagrigo adopt the cooperative spirit of PNS extension methods, as it has agreed? Will a cotton company expand its extension activities to give a high priority to maize? Can Estagrigo afford to maintain an extension service oriented to crops other than cotton, its mainstay?

3. DATA COLLECTION AND ANALYSIS (SS/CAD, or SCAD)

The data collection and analysis subsystem (service de collecte et analyse des données) is the current name of a project unit that has experienced several incarnations. This subsystem made its debut in the original Project Paper as the subsystem for monitoring and evaluation. Its purpose was to serve as a management information system, providing the PMU with progress indicators for each subsystem. In addition, it was to monitor the impact of PNS on maize production levels and on the lives of the people in the project area.

The other subsystems resented what they perceived as a "watch-dog" unit and balked when asked to provide activity and status reports. For area farmers the term "monitoring and evaluation" also had negative connotations--perhaps it was a reminder of problems during the colonial period. The name of the unit was changed to the subsystem for communications.

The communications concept stems from the Project Paper, which depicted the subsystem as an intermediary agent for multi-directional communications flows. Farmers, project personnel, and Government officials were to provide data to and receive information from each other via this subsystem. This remained only a design concept, however. In practice, the subsystem did not function as a communications headquarters. In 1980, the name of the section was changed again to the subsystem for data collection and analysis.

This subsystem never lived up to its full potential because of a host of problems--overambitious design, insufficient staf-

ing, inadequate training, long-term vacancies in key positions and inadequate supplies.

Despite these handicaps, the subsystem managed to collect valuable data and to produce useful analyses. Zairian officials have used its data for presentations on agricultural progress in North Shaba. PNS reports to AID, and several evaluations of the project have cited information provided by this subsystem as the basis for findings. Some informants indicated that other project units consult the data collection and analysis subsystem for aid in decision-making--the subsystem for infrastructure, for example, has done so to plan roads for areas of high population density.

The future for this subsystem is uncertain. It was merged with the adaptation and extension subsystem at the time of this study and presumably will be integrated into Estagrigo along with it.

4. FARMER GROUP DEVELOPMENT (SS/DGF)

The original Project Paper indicated that it was Zairian Government policy to foster development of farmer cooperatives. The project, therefore, funded a subsystem to encourage the development of farmer groups into "precooperatives" to help ensure that project benefits reached small farmers. The purposes for establishing the farmer groups were as follows:

- Help identify and solve local problems by facilitating dialogue between the farmers and the project
- Encourage the adaptation of recommended agricultural practices through group training
- Assume responsibility for providing critical services such as marketing, input supply, and storage facilities
- Promote agricultural processing by financing and using intermediate technology
- Plan and channel assistance to rural infrastructure development
- Help ensure that project benefits reach farmers with less than average-size holdings

Over the long run, these groups were to form farmer councils which would become the building blocks for 75 farmer centers, each to serve one or more villages in the project zone. The farmer group development subsystem was to be staffed with three

Zairian and one American rural development specialists. Simple accounting, management, and record-keeping systems were to be introduced at the centers and at village levels. Training in those skills was to be given at the Mbulula Research and Training Center.

By the time the study team arrived in Zaire, the farmer group development subsystem had been terminated. We gleaned from earlier evaluations that some small successes had been achieved by this subsystem. For example, 2 years after the project began, 17 farmer centers were in varying stages of organization. Compared with achievements of other subsystems, however, these seem modest. Attempts to get farmer groups to invest in other income-generating activities proved unsuccessful. The farmer groups were not really used by PNS as the means to facilitate dialogue with the farmers, as proposed in the original Project Paper. The local population's previous experience with outside intervention--the colonial power and later the central Government tax collectors--negatively biased farmer perceptions of the work of this subsystem.

The evaluation team thinks that the subsystem's problems go back to the basic project design. Although two anthropologists were on the original Project Paper design team, and subsequent social analyses were carried out, the evaluation team sensed that there was insufficient understanding of the socioeconomic and cultural values of the farmers in the project zone. We found, for example, that the farmers were too individualistic and distrustful even of other families in their own village to be ready for intense cooperative endeavors.

We know that the PNS Zairian cadre thought this subsystem important. For funding reasons, at least, USAID wished to concentrate its resources during the last 3 years of the project in other subsystems, and successfully pressed for early termination of the farmer group development subsystem.

5. INTERMEDIATE TECHNOLOGY (SS/IT)

The subsystem for intermediate technology was intended to establish an intermediate technology center in Kongolo to serve as both a workshop to produce tools and a school to train blacksmiths. It was also proposed that the center interact with farmers to design new tools and that it carry out research on improved grain storage facilities.

This seemed appropriate because farmers were already familiar with improved tools and appeared willing to purchase them in order to increase their productivity. Seasonal labor shortages limited agricultural productivity in North Shaba, and improved

tools could have increased the efficiency of available labor. Moreover, because workmen are heavily involved in agricultural activities, this subsystem would have been particularly helpful to them.

The subsystem made a slow start. Training was needed for Zairian technicians. With the arrival of a Peace Corps Volunteer to manage the center, activity picked up. Working out of a former railroad and shipyard workshop, the subsystem reached a production level in 1981 of some 15,000-20,000 hand tools and over 100 small, hand-operated agricultural processing machines. Because of the difficulty of transporting metal, the subsystem used as its raw material the metal sides of the boats rusting in the shipyard. As it turned out, however, this old boat metal was too soft for high quality tools.

By mid-1982, a blacksmith training program had trained more than 80 (double the number planned) blacksmiths. This subsystem was continued under the first project amendment, which noted that continuous followup would be necessary to monitor progress to determine the adequacy of the blacksmith training program and to assist in maintaining metal suppliers on a cost-effective basis. The amendment noted that the subsystem was supposed to work toward achieving a self-financing operation and that the objective was eventually to turn the operation over to the private sector as a profit-making venture.

By the time of the second Project Paper amendment, USAID had determined that this subsystem could never achieve self-sufficiency or sustainability and that it was best to concentrate project resources on other purposes. The subsystem was cut from the project. The center was closed at the end of 1982. Operable equipment and trained people were transferred to the vehicle maintenance service of the subsystem for infrastructure. During the team visits to villages, we were introduced to blacksmiths who were trained by PNS. They were still working as blacksmiths, using metal from wrecked vehicles and making good income at their work. We were informed that there still was a very high demand for locally produced tools. Perhaps the private sector, without the intervention of any state service or a foreign donor, will find this untapped market for small tools.

6. MARKETING AND CREDIT (SS/AC, formerly SS/CAC)

The basic objective of the subsystem for marketing and credit was to promote a strong competitive maize market. It was designed to contain the following components:

- Bank credit to small grain merchants and cooperatives for purchases of trucks and spare parts, and to small grain merchants and cooperatives for grain purchases
- Small farmer production credit
- Improved and expanded railhead facilities
- Business training for grain merchants
- Assistance to the National Cereals Office (ONACER) to train agents, license merchants, establish credit systems, purchase or rent equipment, and provide project supervision

The subsystem was to be headed by two ONACER directors of marketing. They were to be assisted by the U.S. rural development specialist, who was also to provide assistance to the farmer group development subsystem. As noted above, it was difficult to fill this position. Moreover, early on ONACER went bankrupt and was replaced by the National Office of Food Production (ONPV), which also went bankrupt. As a result, maize marketing remained in the hands of the private sector, much as it did before the project.

A 1979 evaluation reiterated the need for an expatriate marketing and credit specialist and suggested an additional US\$1 million for a marketing credit fund. The evaluation recommended closer coordination with the other subsystems and the purchase of additional trucks for rental to merchants. These recommendations were not followed. USAID participation in this subsystem was reduced, and U.S. advisers curtailed their attention to this subsystem. By the time of the first Project Paper amendment, AID activities were limited to the provision of sacks for maize purchases and fuel for sale to local merchants. PNS personnel monitored and reported on the movement of agricultural products within the area and to other areas of Zaire.

A 1982 evaluation concluded that even the rental of trucks and sale of marketing inputs to small operators had only a limited impact on increasing market competition and were not sustainable. The second project amendment in 1983 discontinued USAID assistance to this subsystem, including the provision of counterpart funds to support subsidized truck rentals.

When the study team arrived at the project site, we found a reduced (two-person) but functioning subsystem for marketing and credit (now renamed the subsystem for marketing). The subsystem was still concerned with credit, truck rentals, and reporting on maize movements and sales. In the few months before the evaluation, meetings had been held with the Agricultural Credit Bank of Kinshasa to see how PNS could serve as a link between the Bank

and North Shaba merchants. Indeed, with PNS assistance, five merchants recently received loans for maize marketing. A very clear administrative and costing system was in place for rental of trucks and provision of gas. The demand for trucks far exceeds the small fleet owned by the project. The team also saw a very impressive data collection system, which has data and information by month, by merchant, by commodity, by railhead, by price, and so on.

Ironically, we found a functioning subsystem which was doing a creditable job, but was unfunded and not wanted by AID. Zairian management permitted it to operate, supervised it, and provided local resources to support it. In this instance, "project management" was split and proceeding independently with separate agendas.

7. INFRASTRUCTURE (SS/PRE, formerly SS/INFRA)

As envisaged in the original Project Paper and modified in the first amendment, this subsystem undertook to rehabilitate or construct 724 kilometers of local and village-to-market roads. In addition, 55 permanent bridges were to be put in place.

The 1982 evaluation made the following points:

- Management of the infrastructure subsystem was inadequate because of a lack of systems essential to establish and execute work plans based on approved budgets and priorities, to justify expenditures through an adequate accounting system, to issue instructions, and to foster subsystem continuity through an effective system of internal and external communications.
- After AID withdrawal from the project, the Estagrigo facility would be unable to maintain the equipment of the special brigade devoted to road, bridge, and other construction/rehabilitation work in the PNS zone.
- The PNS road units were generally efficient in the rehabilitation work.
- Sustainability could only be achieved if local funding sources were assured.

Project management addressed the above concerns by adopting an integration plan with Estagrigo for all of the PNS infrastructure subsystem. The plan included the following elements:

- Management of the subsystem was revised to include the documentation of all work undertaken. Work schedules were to be derived from formal workplans and approved budgets.
- The subsystem completely revised its maintenance schedule. Equipment operators and drivers were to receive on-the-job training and some classroom training by the project staff. Additional formal training at an AID-financed technical school for National Roads Office personnel, located in Lubumbashi, is also planned.
- Subsystem equipment and resources were to be maintained in a separate warehouse and work station under the direction of a highly competent Zairian director, assisted by an experienced expatriate adviser.
- The infrastructure subsystem was made responsible for roads formerly maintained by Estagrigo after signing an agreement with Estagrigo. The agreement gives Estagrigo management responsibility for the infrastructure subsystem (including a fee from project counterpart funds), while leaving the unit fairly autonomous in its normal work operations. The management cadre of the subsystem are drawn from Zairian civil servants or civil service candidates assigned to PNS by the Department of Agriculture and Rural Development or the National Roads Office.

8. PROJECT PHASEOUT AND THE INTEGRATION PLAN

While the specific approaches to be taken to sustain project subsystems after USAID support ended were never explained in any official documents, conversations with Government of Zaire officials indicate that they assumed that the United States would continue support to the project as long as the resources were well managed and project outputs were being accomplished. That, of course, was not the case, and various parts of PNS were terminated or are being picked up by other entities.

APPENDIX B

CONTEXTUAL FACTORS

1. PROJECT BACKGROUND

1.1 Macroeconomic Goals Versus Microeconomic Needs

At independence in 1960, agriculture accounted for 39 percent of total exports; by 1976, it accounted for less than 17 percent of total export earnings. With 70 percent of the total population employed in agriculture, it was believed that an agricultural production project might decrease the need for food imports and stimulate a return to a stronger export situation. Food self-sufficiency became a Government theme.

In late 1975, the USAID Mission in Kinshasa began discussions with the Government of Zaire about efforts to increase agricultural production. USAID preferred working in the Kasai provinces, but the Government was most interested in the North Shaba Province. Ultimately, USAID accepted the Government-proposed project site.

Government of Zaire and U.S. contractor personnel spent time in the area, visited officials, and spoke with villagers. One official involved in Kinshasa at the time, who later spent several months as an interim director of PNS and who remained involved with PNS throughout its history, spoke with this study team of the design efforts: "We [project designers] went to the villages to ask what they wanted. They said give us an improved water supply. We asked what else? They said a hospital. We asked what next? They said a school.... All of the time, in the backs of our heads, we knew they were going to get maize production." The farmers of North Shaba, in short, had enough to eat and were more interested in social services. Although the area had participated in a thriving market economy prior to independence, with the destruction of infrastructure during the postindependence wars, they had reverted to a self-sufficient, non-monetized economy that suited them. According to the same Zairian official, however, "we [the design team] thought we knew more than the farmers." Macroeconomic needs thus prevailed over microeconomic desires, and project design went forward.

1.2 Top-Down Development and AID's "New Directions" Mandate

While some Zairians and international financial institutions worried about balance of payments and food self-sufficiency on a macro-scale, other Zairians and the international development

community (e.g., AID) were focusing on such concepts as "helping the rural poor." After the huge capital transfers of the 1960s the U.S. Congress rethought development assistance strategy, and in 1973 passed the new Foreign Assistance Act that emphasized the rural small farmer. The Act was followed by issuance of new policy directives at AID, called the "New Directions." Development was to be oriented more toward people, focusing on small farmers rather than on mechanized agribusiness. Economic and financial rates of return were to be considered less important than reaching the rural poor, however they might be defined.

The microeconomic environment was becoming more studied and, in theory at least, more understood. "Integrated" programs involving more than one sector of activity became fashionable, based on the assumption that multiple solutions were needed for multiple, interrelated problems. The maize production project that was to be PNS thus became an "integrated" agricultural program in Zaire, including road rehabilitation, marketing, and farmer group development.

This people-oriented approach, with multiple solutions to multiple problems, was somewhat new to the Government of Zaire. Agricultural production during the colonial era had focused on large agribusiness and regroupement (relocation) of farmers into communities that were told what and when to plant and to whom to sell produce. Postcolonial work in agriculture followed a "package" approach: the research station would develop a technical package of seeds, fertilizer, and techniques and then try to convince farmers to adopt it. The multisector approach of PNS was appealing in that the area did need roads and assistance in credit and marketing.

1.3 "Process" Versus "Product" in Project Design

Part of the people-oriented strategy involved the assumption that designers could not determine in advance what the eventual outcome of the project would be, outside of increased maize production. As stated in the Project Paper:

The basic strategy of this project will be to initiate and develop a process that enables small farmers to improve their production and incomes so that benefits become self-sustaining. The process will start with an understanding of the current practices of small farmers. New technologies [practices] that are acceptable to small farmers will be developed through research and experimentation in close collaboration with farmers. The most effective approach for transferring agricultural knowledge will be determined by experimenting with various extension approaches. The critical con-

straints to increased production will continue to be identified, and the project will devise methods to overcome them. Farmer groups/pre-cooperatives will be encouraged to help carry out basic services, easing the burden on GOZ [Government of Zaire] agencies while making the service providers [farmer groups/pre-cooperatives] accountable to their clients: the participating small farmers. Such a process requires that the project design be flexible, allowing modifications to be made through a dialogue with small farmers. The implementation of the process requires a data-collection and analysis capability to plan, monitor, and evaluate all project activities.

Taking the macroeconomic need of increased maize production as the project goal, the project purpose thus became "to identify an effective rural development process for improving small farmer production and income which is replicable in other parts of Zaire." In the early days of PNS, then, the process of rural development, with a people orientation, was viewed by project management--mainly AID and the contractor--as the key to improved maize production in Zaire. Products (i.e., quantities of increased maize) were developed for the project economic analysis and were used as goal and purpose indicators of achievement. The main measure of goal achievement was to be a net increase of 300 percent in quantity of marketed maize in the Kongolo and Nyunzu Zones within 6 years. This is probably an appropriate measure for a goal of maize production. It is interesting that the key indicators for purpose achievement were also maize production figures. Process, while responding to New Directions concerns and introducing an element of ambiguity in any Government of Zaire/AID negotiations, was not to be measured at all. It was assumed that the process would be so successful that it would be implemented in other parts of the country.

1.4 Conclusions

The tension between a macroeconomic, quantitative goal and a microeconomic, qualitative purpose was established during early project design. This duality was recognized and rendered more ambiguous through the design emphasis on process rather than products. The resulting tensions and ambiguity were to remain with the project and affect management at all levels through the life of the project.

2. CONTEXTUAL FACTORS AFFECTING PROJECT MANAGEMENT

2.1 Management Heritage

The management heritage of Zaire may be characterized by three basic attributes: (1) a fragmentation of traditional or tribal organization and governance; (2) governance based on a melding of the interests of church, state, and the private sector--unusual in a continent currently prone to centrally controlled economies; and (3) a pervasive mentality of dependency brought on by decades of colonial rule characterized as "repressive paternalism."

2.1.1 Fragmentation of Traditional Organizations

The land mass that is now Zaire was first envisioned as one political entity by King Leopold of Belgium in the mid-1870s. In the 18th and 19th centuries, the country had been ravaged by the slave trade. It has been estimated that during the 200 years of the slave trade approximately 30 million people were shipped away. This population level was not reached again until 1982, and many suggest that much of the fragmentation, factionalism, and fear of the outside world dates from that period of time.

Belgian control under Leopold's personal "Congo Free State" and colonial governance during the colonial period did little to promote cohesion. A centrally directed administrative structure divided the area into provinces and smaller units unrelated to tribal boundaries. Local governance was carried out by tribal chiefs, to be sure, but only those tribal chiefs selected by low-level Belgian functionaries. Often, a person not supported by the tribe was chosen, and jealousy and mistrust prevailed. The colonial power promoted education in many languages, which, while seemingly progressive, contributed to a maintenance of the divisions and mistrust among the population.

Sociopolitical Fragmentation in North Shaba. Belgians moved in during the 1920s, when the small port of Kongolo bustled with activity. Food was being sent south by steamer to Bukama, and then transshipped by train to feed the mine workers of Katanga. With the increased economic importance of the area came increased colonial presence and the investiture of tribal chiefs. For the virtually acephalous Hema of the Kongolo region, choice of one person to rule a group of independent lineages was not looked upon kindly, and jealousies remain to this day. In the Nyunzu area, the more hierarchical Luba may have adapted to the system more easily; however, their need to move frequently to maintain

soil fertility in the forested regions was not suited to the Belgian system. During the 1950s, under the paysannat system, the Luba (and Hemba) were forced to settle in fixed, grid-like villages along roads and to reach production quotas on their farms. This treatment appears to have resulted in a deep-seated mistrust of anything governmental or foreign, which remains even to this day, and in a low-risk, inward orientation that places self-sufficiency in high regard.

PNS in the Fragmented Milieu. This fragmented, inward orientation was possibly not the best milieu in which to attempt to establish a "process approach" toward rural development. Although the Project Paper's social analysis and other sections do note examples of various lineages working together, most examples are of single-purpose, short-term activities such as road repair or food processing. The concept of a democratic, broad-based farmers council to channel ideas to and from the smaller lineage and gender groups essentially would have placed that council above all others, with authority vested from the outside. Indeed, American anthropologists familiar with the Hemba area noted during a visit in 1979 several examples of jealousy, mistrust, and lack of participation in farmer group development subsystem activities, based on just such problems.

Given this fragmentation, an approach to farmer participation that seems to have worked occurred in the agricultural extension efforts. Extension workers convinced a few farmers to establish demonstration fields, often with guarantees of produce to offset risk. Both participating farmers and others could see results and adopt practices and inputs as they wished. Fortunately, the demonstration package chosen was good; after two seasons, adoption rates were up and so was production. Farmers had been able, for the most part, to observe and to choose to participate on an individual basis in the project's offerings. Data were collected by extension workers and data collection and analysis subsystem agents--not, as originally envisioned, by farmers councils--for inclusion in production reports. Information was disseminated through handouts printed in Swahili and French and discussions by resident extension agents (often Hemba, the predominant ethnic group near Kongolo), with ad hoc groups and individual farmers. This egalitarian, noncoercive approach appears appropriate to the goal of improved maize production, given the fragmented social milieu in which PNS operated. In hindsight, choosing the Hemba and Luba groups of North Shaba as the "test-bed" for development of a more cooperative rural development model seems inappropriate at best.

2.1.2 Governance Based on the "Three-Legged Stool" of State, Church, and Private Sector

As noted earlier, the nation that is now Zaire was originally established as the personal fiefdom of King Leopold of Belgium. Early public (Belgian, not Congolese) outrage that King Leopold had personally annexed virtually all the land led to a change. Up to one-third of the land was to be available for licensing to private companies as agents of the state, one-third was to be registered in the names of private individuals--Belgians or other Europeans, not Africans--and only one-third was to remain a part of King Leopold's fiefdom. One private company that obtained license to part of the territory was the Katanga Company, which by 1900 had evolved into the Special Committee for Katanga. This committee was charged not only with economic exploitation but also with political-administrative responsibilities in Katanga (now Shaba). Although governance--or at least titles--changed during the colonial period, a private company essentially ran Katanga for the next 60 years. This pragmatic approach, which assumed that the state could not possibly run everything in a country so huge and thus divested responsibility to the private sector, remains part of Zaire's modus operandi today.

The church also fulfilled a major role in governance, but more through social services than economic exploitation. Catholic missionaries had encountered the Kongo Kingdom back in the early 1500s, and the Vatican, through its Overseas Missions operation, actively encouraged expansion and conversion as the colony was established. The missionaries' powers were essentially twofold: (1) with independent funding sources from support groups back home, they could engage in social services at no cost to the state; and (2) during the colonial era, if public support to the colony waned in Belgium, the missions--often through the Vatican--could be counted on to maintain interest in the "plight" of the African people and the continuing need for assistance. Missions were ceded land and often became self-supporting through active agricultural programs. Schools and universities--one Catholic, one Protestant--were established. Indeed, as the private companies engaged in often brutal tactics for economic gain, it was--and is--the religious missions that worked for social welfare.

Postcolonial Zaire has maintained the support of religious missions and private companies as an essential part of its economic development program. In North Shaba, only one mission is actively engaged in agriculture, primarily as part of a young women's school support program. Most secondary schools are run by the church, as are most clinics and hospitals. The religious missions do not, however, appear to be as vital a part of the economic landscape in North Shaba as in some other parts of the country.

The project has actively solicited involvement of the private sector. Indeed, it is somewhat unusual that an AID Project Paper written in 1976 would have a specific design for using the private sector, in this case, small transport/trucking agents to market produce. Based on contractor and AID reports, larger commercial concerns--notably the millers in Lubumbashi--were also informal "consultants" to the project as early as 1979. Informal exchanges--of planes, fuel, transport, and so forth--between the project and the larger merchants in Kongolo have existed as well. And the Estagrigo cotton company, created 1 year after PNS, is now in negotiations with PNS and the Government to manage certain elements of the project for the remainder of its life.

Until at least 1981, the project had little contact with Department of Agriculture personnel in the area who were kept in place by the Government despite PNS's mandate to take over operations. PNS appears to have divided the area with Estagrigo, the latter working the west bank of the Zaire River and PNS concentrating on the east bank. The redundancy of three agricultural extension services in North Shaba--those of the Department of Agriculture, PNS, and Estagrigo--seems wasteful in a country struggling to keep costs down. The current negotiations to have Estagrigo take over management of all three services may be a useful solution.

2.1.3 Dependency and "Repressive Paternalism"

This three-legged stool of state, church, and private sector, each "leg" with a different *raison d'etre*, has also created a sense of dependency among the rural population that exists to this day. The state, church missions, and private companies in colonial times were all providers of goods, services, and order. Private agricultural companies, after moving farmers into tidy block settlements, brought in tractors to clear and cultivate land. Religious missions established schools and clinics, either at nominal costs or none at all. During village or tribal conflict, the state could be counted on to restore order. The study team was somewhat surprised to meet a number of Zairians--in villages and in Kinshasa--who looked back wistfully on the colonial period as a time of economic prosperity and social stability.

This bountiful paternalism, of course, had its ugly side. Certain authors have documented cases, most of them pre-1900, of private companies so intent on meeting rubber quotas that they demanded that if agents did not come in with quotas, they should come in with the severed hands of the unwilling workers. Plantation and mine workers were regularly flogged, and villages were frequently destroyed to make way for new fields.

This paternalism--the white man or foreigner as giver of all goods--still seems to be entrenched in some fragmented tribes and ethnic groups in Zaire today. In some places the outsider is viewed as desirable in spite of horror stories from the past: he can provide goods and services, and he is 'also quite useful to blame if things go wrong.

PNS has both built on and refuted the paternalism expected of it. The project, to borrow from a report by the prime contractor, is definitely le grand patron in Kongolo. Not only did the project offer subsidized seeds and free instruction in agriculture, but it has sold gasoline when no one else had any, sent radio messages, transported the sick, repaired trucks, and performed various other services expected of a "grand patron." The twist is that it has tried to build in to the project a sense that Zairians are its patrons and owners, that outsiders are not necessary for development to occur. As discussed in Appendix D on administrative processes, the local staffing patterns at lower and middle levels in the PNS structure have reinforced this effort, with some success.

2.2 Government of Zaire and AID Policy Changes Over Time

PNS has evolved in an era of dynamic political, economic, and developmental policies on the part of both the Government of Zaire and the U.S. Government. Some major elements of these policies are discussed below.

2.2.1 Economic Policies

PNS was designed during a period of financial crisis in Zaire. The economic decline had a number of effects on PNS over the years.

- Impact. Based on an analysis by the data analysis subsystem in February 1981, during the period January 1979-December 1980, farmer income increased by 29 percent, which is impressive until compared with the market basket price index in Kongolo, which also increased by 330 percent over this same period.
- Personnel. Because of International Monetary Fund conditions, the Zairian Government had to reduce its civil service by several thousand in the late 1970s and had to follow stringent requirements regarding salaries and fringe benefits for cadre that remain.

- Planning and Budgeting. Plans tied to budgets based on one exchange rate had to be scrapped entirely when a major devaluation occurred. Money supply has been tight enough that the Government has provided less than 50 percent of funds in approved annual budgets (see Appendix F on financial management).

On a more positive side, PNS and USAID/Kinshasa claim some credit for influencing the Zairian Government to increase the price of maize over time and, in September 1983, to deregulate it altogether. This appears to have been achieved through a combination of formal and informal USAID and PNS/project management unit (PMU) efforts. Beginning with the first Project Paper and Project Agreement, the Zairian Government was asked "to take action aimed at improving the timing and coordination of pricing decisions related to maize at various marketing levels and the integration of these decisions with those involving other crops." Various amendments, notably amendment 14 following the first Project Paper amendment, included stronger terms as conditions precedent to disbursement.

While USAID was engaging in dialogue and formal covenants with the Department of Agriculture, PNS/PMU staff were working the system informally in Shaba. Formal maize marketing in Shaba is basically a monopsony. The state-controlled copper company GECAMINES requires approximately 60,000 metric tons of maize flour each year to feed its workers, and is supplied by three major millers in Lubumbashi. After the collapse of the state marketing board, the prices and timing of marketing campaigns were set by the Governor of Shaba. As early as 1979, PNS/PMU staff seem to have been working with at least one of the millers and the Governor to ensure that Shaba got adequate attention. As production increased, competition increased; now all three millers are purchasing North Shaba maize. Because of the increased supply not only in North Shaba but elsewhere, PNS/PMU field trip reports to Lubumbashi now reflect other marketing concerns: convincing the Governor to allow farmers and small entrepreneurs to sell their maize outside of Shaba Province. Based on past successes, there is little reason to believe these efforts will not be effective.

2.2.2 Government of Zaire and AID Development Policies

At the time of project design, concerns regarding basic human needs, human rights, and New Directions work with small farmers had been mandated in Washington. Based on an institutional assessment of the soon-to-be-defunct National Cereals Offices in Zaire (ONACER), the project design team planned for credit and assistance to small- and medium-size grain merchants to market the planned increased maize production. The Project

Review Paper approval message expressed modest concern: "the emphasis to be placed on private sector role in marketing operations is not [altogether] clear. It appears that licensing of private buyers may be open to considerable abuse, and differential farm gate pricing would be desirable. ONACER's role as deficit buyer in remote areas needs clarification." In response to this concern, the Project Paper included a detailed account of how it would develop a comprehensive questionnaire to determine the status of potential small-size grain merchants, including information on "prior marketing experience, debt history, cash balances, access to credit, and access to cartage, sacks, and storage facilities." The project--as opposed to ONACER--in its role as Department of Agriculture representative in the area, would then issue licenses to the traders. Emphasis was thus on protecting the small farmers from potential "abuse" by the private sector.

In 1981, a new administration in the United States and at AID promulgated a series of new policy directives, among them a strong mandate to pursue development of private sector initiatives in AID programs. Gone was the emphasis on a concern with the "abuse" of small farmers; the power--and perceived inherent rationality--of the free marketplace would presumably be reasserted.

The project flexibly followed AID's new policy initiative. PMU staff estimated that approximately 100 small traders/transporters were involved in the 1983/1984 agricultural marketing campaign, some under contract from the large millers, and some as independent operators. PNS has continued to provide sacks for the traders. In the 1983/1984 campaign in North Shaba, however, several problems arose: because there were no scales in the area, farmers complained that they were at the mercy of the traders in selling a 110-pound (50-kilo) sack for the price of 100 pounds; millers complained that the traders were delivering inferior goods or rocks, and selling the good grain elsewhere; and the merchants complained that they could not get sacks, spare parts, or honest drivers, and that transport costs were such that they could make very little money. Given the increased competition and the increased supply of grain not only in North Shaba but in neighboring areas as well, one can only wait to see if the market will right itself and the supply/demand equilibrium prevail.

The project has also followed the new AID mandate of encouraging private sector development and, as noted elsewhere, is planning to "turn the project over to the private sector" during this last phase of AID funding. While encouraging in terms of application of policy, the claims of "integration with the private sector" are not quite what they may seem to be. Although Estagrigo is, in the context of Zaire, a private company, tax revenues to be given to Estagrigo are generally con-

sidered public funds. With wholly public funding and a 15-percent management fee, we can question if this is really a "private sector" operation.

This shift by AID and the Government of Zaire to the private sector has made the original project goals and purposes ambiguous. In what may amount to a role reversal of initial positions, it is the Government of Zaire that is now supporting "people-oriented" development in North Shaba, through retaining the farmer group development subsystem as a budget line item and emphasizing precooperative formation as a solution to long-term development needs. AID has opted to promote a local affiliate of a multinational corporation to attain project production and marketing goals. The tensions discussed in Section 1 of this appendix thus remain.

2.3 Distance and Isolation

2.3.1 Logistics

The design team and AID were aware of the logistics situation of North Shaba. PNS addressed the problem of maintaining logistic supply through persistence, improvisation, and planning ahead. Radio communication with Kinshasa and among Kongolo, Nyunzu, and Mbulula was established early in the project, first through borrowing the Air Zaire radio, and later (within the first year) through base stations installed for project use. A small plane was located in Mbulula, and a pilot/mechanic/radio technician was contracted to fly and maintain it. The plane provided security for personnel stationed in the area and an efficient way to move around prior to road improvements. The project used air charters for freight and for project-monitoring visits. Logistics officers stationed in Kinshasa have experimented with virtually every means of transport in and out of Kongolo, including ports throughout central and southern Africa. With some improvements in the national road system, trucks out of Kinshasa can now deliver goods and return in approximately 15 days. Systems occasionally collapse, fuel supplies are sometimes erratic, accidents and unforeseen incidents occur, and the military sometimes flexes its muscles, but the distances can be managed.

2.3.2 Isolation

There were serious vacancies in expatriate staff because of the inability to recruit and keep qualified technicians at such a remote site. Expatriates were often separated from school-age

children and spouses for long periods because of the lack of schooling and basic amenities in Kongolo. It appeared to be easier to attract young, untried professionals or people of retirement age to Kongolo rather than mid-career workers. AID and the prime contractor gave maximum support to field staff. Judicious use of a PNS plane and of charters kept links with the outside world open and provided an opportunity to send and receive mail, newspapers, and "luxuries" from Kinshasa. Daily radio contact helped to prevent misunderstandings from turning into major problems. Frequent socializing in Kongolo built team spirit; the use of the road grader to smooth the one (humble) clay tennis court could not be viewed as abuse by even the most hardened auditor. The contractor allowed flexibility in determining when and how frequently personnel should be sent on business/rest trips outside of the area.

Some of these problems also applied to Zairian staff, but not at the same level of difficulty.

2.3.3 Creature Comforts in Kongolo

Kongolo was once a bustling river port and later a railhead. During those periods, the National Transport Society built a series of houses for officers. In the early days of PNS, the Department of Agriculture bought the houses from the Society. The housing was sturdy brick with wiring, some plumbing, and gardens. Although these houses were renovated, PNS staff did not have to go through the often troublesome period of living in trailers, ordering prefabricated dwellings, or upgrading local huts.

Zairian and expatriate senior management personnel lived in the same types of houses, with similar furnishings and limitations. Some USAID/Kinshasa personnel expressed concern about the rather humble conditions for the expatriates, and wondered whether recruitment problems were linked to the housing situation. This team suggests that the housing situation is indeed appropriate and that (1) the common housing promoted the team spirit and social cohesion that are essential to small town living in any country, and (2) Kongolo would still be Kongolo even in an air-conditioned pre-fab. The frequent contact through radio and air charter and the flexibility to simply "get out" when needed contribute far more to the living situation than fancier housing would.

2.3.4 PNS Isolation and Autonomy

There were certain benefits to the remote location of the project as well as the more obvious drawbacks. With Kinshasa over 1,000 miles away, political pressures on the project and staff have not been as common as they might have been with a closer location. Visits are controlled, and surprises rarely occur. Requests for additional work can take time to fulfill because of "logistics problems." Senior- and mid-level Zairian management from outside the project area are freer than most Zairians from claims based on ethnic patron-client relationships. And, with little else to do in Kongolo, people tend to work far more than an 8-hour day. They are isolated, yes, but also productive.

The physical isolation in Kongolo contributed to an organizational isolation that affects prospects for sustainability. As discussed in Appendix D on administrative processes, PNS derives its authority from Kinshasa and Washington; its legitimacy to act has been built up in the project area, over time, through serving its client group, the farmers of North Shaba. Because it is located nearer to its client group than to Kinshasa, and because it interacts on personal as well as professional levels with this client group, the needs of the group have at times become more immediately important than the directives and guidance from Kinshasa. PNS is thus caught in a bind, trying to respond to both groups, but living amid only one.

2.4 Expatriate Contractor Management

The original contract for technical assistance between AID and the primary contractor included the following statement:

Contractor, as an independent entity and not as an agent of the Government, shall implement pertinent portions of the North Shaba Rural Development Project as set forth herein on a task [subsystem] basis and as further set forth in Contractor's proposal and the Government's Project Paper.

While it can be argued that this sentence was inserted to absolve the U.S. Government of any claims against it due to contractor actions, it also promoted contractor independence and an identity separate from that of AID, the Government of Zaire, or PNS. Some impacts of this independence on overall design and subsequent management are noted below.

The contractor has attempted to assert its philosophy of development and encourages staff to promote it. The impact on

PNS of this strong identification with the contractor is important. In the design and the early days of PNS, the contractor worked closely with AID to convince the Government of Zaire to accept a strategy of people-oriented development, a New Directions approach. Although operationally the farmer group development subsystem and the information system have not lived up to expectations, in another sense the contractor has done its job well: the Zairian Government now believes in a people-oriented approach, at least in North Shaba. Now that AID has decided not to fund the farmer group development subsystem, the Government of Zaire is pushing to retain farmer groups and participation in its own rural development strategy. The Government budget for PNS still carries farmer group development as a line-item, and central officials still discuss the experiment of PNS as simply needing more time.

The contractor exhibited this strong sense of identity with the project during the early days of the decision to shift control of PNS to Estagrigo. When AID first began discussing the shift and a draft of the second amendment to the Project Paper was circulated, the contractor expressed concerns and proposed alternative approaches that did not involve Estagrigo, such as simply institutionalizing the PMU under the Department of Agriculture. The contractor did not simply accept the AID directive; it actively sought other alternatives and seriously considered withdrawing its participation in PNS.

The Chief of Party at that time who opposed the move left Zaire after a shortened tour. The new scope of work--rewritten following the Project Paper amendment--for his replacement includes one sentence about working with the PMU and descriptions of 17 other tasks related to making "integration with the private sector" happen. The contractor appears, in this case, to have subsumed its broader philosophy to its efforts to help the Government of Zaire make a fait accompli work. After a period of uncertainty, the contractor is carrying out the new AID directives.

APPENDIX C

ORGANIZATIONAL AND INSTITUTIONAL ISSUES

1. INTERNAL STRUCTURE OF PROJECT NORTH SHABA

PNS operated through an independent authority mandated by the Zaire Department of Agriculture and was free to develop its own structure. The original Project Paper envisioned a classic Western model, with a project director located in Kongolo and proposed deputy directors supervising all activities in Mbulula and Nyunzu. This model was never adopted because of personnel shortages as well as implementation realities: the staff and work in the outer areas simply were not important enough to attract the high-level personnel desired. What evolved in place of this model was a more flexible matrix approach that synthesized the Zairian heritage of strong centrist direction with an American decentralized organization, and did so in a manner that promoted human resource development within the limitations imposed by the North Shaba environment.

The matrix consisted of six technical subsystems managed vertically, with subsystem chiefs who reported to the project director and who supervised the technical work in their subsystems. The three project geographic sectors of Kongolo, Mbulula, and Nyunzu were headed by administrative sector chiefs, who reported to the Assistant Director for Administration and Finance and provided administrative direction and support to the technical personnel in their sector. For example, subsystem for data collection and analysis personnel in Nyunzu received technical direction and support from the parallel subsystem chief in Kongolo; they received salaries, gasoline for their motorcycles, lodging, per diem, and administrative information from the Nyunzu administrative sector chief. Although in the early years of the project many disputes over jurisdiction occurred, by the team's visit in 1984 the matrix--although not the official organization chart of PNS--was functioning smoothly and appeared well understood by all PNS staff.

2. EXTERNAL COORDINATION: KINSHASA

While Government of Zaire-sponsored projects normally report through the established governmental chain, PNS, perhaps by virtue of its priority to the Presidency, reported directly to the Minister of Agriculture. However, with the Minister himself a political figure, Government direction came from a staff office in the Ministry, the Office of Studies and Planning. A change was made in 1984, when PNS and other donor-supported projects

began to report to the Department of Agriculture through a new office created for this purpose, the Office of General Project Administration.

A former director of the North Shaba Project headed the Office of Studies and Planning. At the same time he retained his chairmanship of the PNS Steering Committee. In principle, the Steering Committee addressed working-level problems and monitored project progress through quarterly meetings. In fact, only two or three meetings were held. In their place, the former director was able to protect the interests of the project based on his personal knowledge of the project and his close contact with his fellow Zairian agronomist who succeeded him as project director. He focused central Government attention on the project's budgetary requirements and stressed progress as particularly important to longer term Government interests in a peaceful Shaba region. He was able to reduce the impact of budget cuts suffered by Department of Agriculture projects as the central Government decided each year how to spread its limited resources. While he exhibited able leadership in his work, this personalized approach to project support was high in risk. It worked extremely well because this key person remained in the Department of Agriculture; had he left the Government, the project would have had virtually no institutional backup.

USAID/Kinshasa, the PMU, and the key official in the Office of Studies and Planning worked to ensure that Kinshasa decision-makers were fully informed of where the project stood and what was expected of the Government. This policy of open and frank discussions meant that the Government was advised officially of additional resource requirements and project shortcomings. Because of the lack of an active PNS Steering Committee and a paucity of written requirements for progress reporting or financial reports, these frequent meetings were useful.

3. EXTERNAL COORDINATION: REGIONAL AND LOCAL

The data collection and analysis subsystem information on rural agricultural production trends was used by the regional government at an annual agricultural conference in 1981 to demonstrate the project's positive impact on farmer production and marketing. The information proved to be accurate and in stark contrast to that of old-line Department of Agriculture field agronomists who churned out the traditional fare of glowing reports on farm productivity while maize imports rose.

Other PNS organizational contacts were in Lubumbashi, the site of the regional governor's office, the U.S. Consul General, and the Department of Agriculture's regional inspector.

As the highest ranking civilian official in the region, the Governor has wide-ranging responsibility. He looks out for the welfare of the area's residents and maintains the peace. He also ensures that the mining economy remains productive, that essential commodities like maize are marketed at affordable prices, that central Government policies are executed in the region, and that the tax system works.

To accomplish this, the Governor uses field officers assigned to the area by the central ministries to supply him with information on performance in various sectors of the economy. He can also request special analyses and can assign personnel to investigate special problems. The Governor has made extensive use of the data collection and analysis subsystem of the PNS to provide substantive data from the region regarding land under cultivation by small farmers and to help him anticipate the quantities of crops to be marketed during agricultural campaigns.

When one considers that PNS staff had fairly good access to the Shaba Governor's office, it is easy to understand why the presence of Americans in the project area helped reduce farmer fears of abuse by military and Government officials. Because PNS was in regular contact with the outside world it was considered injurious to one's future to be identified as a Zairian who had tried to confiscate or abuse "property of the Americans."

At the level of the project area in Kongolo, the Commissaire of the zone is the highest level representative to work with PNS. However, because the Commissaire was replaced during the team's visit, he could not be interviewed on his perception of his role vis-a-vis the project. This was unfortunate, because he had been there since the early days of the project in 1977. However, it is important to note that the Commissaire of Kongolo Zone probably received little financial support from the central Government. That is, although the commissioner would be the approximate equivalent of the mayor of a small town, he did not have a funded operations expense budget. His ability to influence the multimillion dollar AID project was minimal.

APPENDIX D

ADMINISTRATIVE PROCESSES

1. DESIGN RATIONALE

The original Project Paper described a project design based on the establishment of a process that was flexible, allowing modifications to be made through a dialogue with small farmers. The discussion that follows should be seen in the light of this flexible project design.

2. AUTHORITY AND LEGITIMACY OF PNS

As discussed in Appendix C, PNS was created as a semiautonomous unit of the Department of Agriculture. The structure that evolved was to be a "separate project authority." In the following discussion, however, "authority" is used to refer to specific attributes of the PNS organization rather than the organization itself. Following a political economy analysis, the exercise of authority--derived, for the most part, from entities external to North Shaba--will be examined in terms of its legitimacy in the project area. The difference between these attributes of the PNS management style is important. PNS was internally well administered not only because of an explicit effort to decentralize and delegate authority within the project structure, but also because of a less explicit effort to gain legitimacy for that structure in the eyes of the beneficiary population. Each of these efforts is discussed below.

2.1 Authority of and Within the PNS Structure

The Project Agreement signed between AID and the Government of Zaire had included a "condition precedent" that required the Government to formally approve the proposed organizational structure, the implied staffing pattern, functions, and delegations of authority for the project management unit (PMU). Following the Project Agreement, these delegations were to include responsibility for all Department of Agriculture operations in the project area related to research, extension, farmer group formation, and grain marketing.

Although USAID/Kinshasa agreed that the conditions for disbursement had been met through Project Implementation Letter No. of January 20, 1977, in fact they were only partially met. In terms of "organizational structure," Decree No. 01418 established

a Project Steering Committee at the central level which rarely met after the first year and, as an organization, exercised no authority in the project. Decision No. 045/DA/76 established a project management unit, but responsibility for all Department of Agriculture operations in North Shaba was left out. In terms of implied staffing, several letters from the Department of Agriculture appointed key staff; the first appointed project director, however, was not provided by the Government but was recruited by USAID.

The project got underway in 1977 with fiscal authority for the Zairian currency portion of its budget. The Department of Agriculture retained its personnel in North Shaba, and responsibility for marketing remained ambiguous. The project thus began with a high degree of authority for somewhat specific aims, and few lines of authority or coordination with related agencies. This less-than-clear "fit" within an organizational context was problematic for the project throughout its history.

Within PNS, however, concepts of authority were better understood. Although the term "PMU" had been used in the original project document to refer to the entire salaried staff working on PNS, internally it was actually considered to be only three people: the project director (a Zairian), the deputy project director (until 1982 an American, with a title change in mid-1978 to Chief of Party and adviser to the director), and the Assistant Director for Administration and Financial Management (an American until 1983). The rest of the staff--at one point some 800 strong--functioned in a number of different structural units, each with specific responsibilities (albeit vaguely defined) and each related both vertically and horizontally to others. Some observations on how and why this organization became an effective management entity are discussed below.

1. Although certain responsibilities and oversight were retained by AID and/or the Department of Agriculture, the PMU was delegated relatively full authority to operate as an autonomous unit. Conditions precedent in the Project Agreement established autonomous fiscal control of the Zairian currency budget; provisions of the technical assistance contract later granted decisions on most dollar funding to the contractor, represented in the PMU by the deputy project director. Thus, although separate accounts and separate systems were kept for dollars and Zaires, control of allocated resources was in the PMU.

2. The PMU also had full authority to hire and fire personnel, although salary schedules had to fit Department of Agriculture regulations and a workers' union had to be formed. PNS was not, however, required to fully follow the Department of Agriculture structure. Indeed, by 1984 only 26 of its over 300 employees were actually Government of Zaire career employees; the rest were contract hires.

3. Although the Government of Zaire cadre were assured the higher positions, staffing became a meld of responses to the needs of PNS and Kongolo as well as the (unstated) desire to create a more Zairian institution. Whereas the Project Paper had followed a classic hierarchical approach and proposed a few subsystem chiefs supervising a tentative number of staff, the project ended up with many people with the title of "chief" or "deputy chief," albeit at differing levels in the structure. Even, for example, in the Guard Service in the Mbulula Section, there was a chief, two deputy chiefs (one for day guards, one for night guards), and two equipment controlleurs to issue raincoats, boots, and other gear. The division of administration and finance was made up of 10 separate "services," each with a chief and most with at least one deputy chief.

4. This relative preponderance of many office/division/unit chiefs was accompanied by a perceived, and perhaps real, devolution of authority within the organization. The decisions made, for example, by the equipment controlleur in Mbulula may not be considered major, but they are his. At the other end of the spectrum, subsystem chiefs can make the broad decisions regarding implementation strategy, knowing that details are, for the most part, being attended to by other staff. Few written position descriptions exist, and some subsystem chiefs actually referred the team to the original Project Paper for their job descriptions. Titles seem to be an effective means of conveying responsibility, authority, and role within the organization.

In sum, PNS began as an organization with externally delegated authority for senior (i.e., PMU) and middle (i.e., subsystem chiefs) personnel only. The PMU appears, over time, to have significantly strengthened the authority of middle management (i.e., subsystem and division/service chiefs), not only through redelegation of its authority, but through wide dispersal of the authority throughout the subsystems and divisions. In some cases, such as the intermediate technology subsystem and the personnel and radio services, authority and responsibilities were clear to staff and others. In other cases, such as the Data collection and analysis subsystem and the administrative (geographic) sectors, delegation of authority was less clear and confusion resulted. Mixed as it was, the decentralized authority did enhance a sense of project ownership among staff that is very much evident today. Not everyone knows exactly what they are doing or why, but they know they are in charge; given the strong centralist tendencies during colonial times and, to a certain extent, even now, the approach appears to have been productive.

2.2 PNS Personnel: Legitimacy and Leadership

The devolved authority in PNS was strengthened significantly by the (albeit slow) establishment of PNS as a legitimate development organization in the eyes of the beneficiary population. This legitimacy was gained through a number of ways.

2.2.1 Establishing Credibility: Peace Corps, Health, Spring Boxes, and the Intermediate Technology Subsystem

Reconnaissance visits by project staff early in the project indicated that the primary needs articulated by villagers were for health services. Because PNS had no funding for health, little could be done directly to meet this need. Given, however, the project strategy of responsiveness, assistance was sought from the U.S. Peace Corps in Kinshasa. Over the years, more than 10 Peace Corps public health volunteers helped establish and staff village health posts, and several water system technicians have been fielded. These volunteers worked in self-help activities with villagers to build spring boxes to collect safe water. PNS coordinated these efforts formally and informally, sharing materials, transport, and technical assistance when needed. Although relatively small scale, this flexibility to look outside the project for assistance in meeting the needs of the villagers appears to have been useful in enhancing PNS's image as a responsive, rather than directive (or coercive) organization.

PNS also worked closely with the Peace Corps to accelerate its intermediate technology subsystem. During the team's visit, several farmers mentioned the production of small tools as a valuable contribution of the project that they would like to see continued. Several observers, and this study team, concluded that although the decision to terminate certain activities was a sound one, the intermediate technology subsystem served a useful purpose of building credibility with the farmers in the area.

2.2.2 Sustaining Credibility: The Informal Networks

The project needed to firmly establish its "imported" authority to carry out development in North Shaba as legitimate to the local population. To the local population and many of the lower level staff of PNS--many of whom were from the area--Government officials were to be tolerated or ignored.

The perception of the staff changed as the project grew. In 1980, a number of people from the project area were employed by PNS, primarily in field-level positions as extension agents,

administrative and clerical personnel, and guards. These people began to talk of PNS in positive terms to their families and friends. This interaction between staff and beneficiary population was a first step in establishing the legitimacy of the project.

Whereas the field staff was from the project area, the middle-level staff--subsystem chiefs--were not. Most of those who arrived in 1977, 1978, and early 1979, however, stayed. Many of these people, hoping to augment meager salaries, rented land from locally hired staff and became weekend farmers. Some married local--although not Hemba--women. Their stake in the project became more personalized as they established linkages with local people and became involved in the social networking so common in Africa. This interaction--among long-term subsystem chiefs (from outside the area), project field staff and administrative workers, (primarily from the area), and the beneficiary population--helped establish the project's legitimacy in North Shaba.

Legitimacy to act as the head of this group came more slowly to the PMU. Dominated by Americans by design as a means of avoiding graft and corruption problems common to Zaire, the PMU did not fit well within the informal, but critical, social network that was being established. Especially when the Zairian director was away, both subsystem chiefs and local staff believed that "they" were not represented in the PMU. It must be stressed that this perception in no way detracts from the ability of American personnel to communicate or work with the Zairians; they were simply too much the outsiders to handle some of the problems that arose. Staff expressed this concern to the Zairian director, and in late 1982 he took two steps: (1) he filled the post of deputy for finance and administration with a well-qualified Zairian; and (2) he created a fourth position for the PMU, that of technical deputy, and filled it with a Zairian from the project. The PMU thus comprised three Zairians and one American. The project had a more typical Zairian staffing pattern (most large projects in Zaire have a technical deputy), and the PMU was able to fulfill not only formal but informal decision-making roles at all times.

The creation of an additional post for a Zairian within the PMU was not an attempt to wholly nationalize project staff. Indeed, to this day the PMU informally follows the practice of having one American (and there is only one) and one Zairian sign off on all checks as a means of protecting each other against accusations of acting for personal gain. Also, as the PMU needed more Zairians to handle the informal social network of the Zairians, so the PMU today needs an American to deal with expatriate technical assistance personnel and AID. It has, in sum, become legitimate in most eyes.

2.2.3 The Farmers: Legitimacy Without Authority To Act

Given the strong emphasis in the Project Paper on farmer participation in project design, implementation, and evaluation, and on the creation of an information system that would serve them as well, it is useful to look at what happened.

Most project management staff seem to have viewed farmers simply as recipients or beneficiaries of the project, that is, as passive actors in the process. Outside of some small-scale and often ineffective income-generating activities and social services (e.g., group fields and spring boxes), not even the farmers councils appear to have been conferred with much authority to act in any capacity beyond that of their household production units. Despite the obvious desire of PNS staff to confer this authority (strong farmer involvement is stressed in the Project Paper, and the subsystem for farmer group development was established to promote that authority), this authority was never conferred above the individual or household level for two principal reasons.

1. Until approximately 1981 or 1982, the objectives of the farmer group development subsystem were ambiguous. That is, on the one hand (and implied in the Project Paper) the farmer groups/councils were to become broad-based organizations representing entire villages in development actions, a sort of local development board. On the other hand, the groups were primarily economic entities, focusing on income and economic gain, moving toward a Western concept of cooperatives. This ambiguity is reflected in the quarterly minutes of subsystem meetings; some field agents reported on purely economic achievements, others on increasing awareness of broader life options. Various technical assistance personnel, who were to help define strategy, were either unsure of their role or did not stay long enough to effectively establish objectives. The PMU appears to have neglected farmer group development while working on more tangible efforts like roads and buildings.

2. Outside requirements for progress reporting were based on input-output, quantitative measures. The 5-year history of the farmer group development subsystem in working with farmers and farmer groups was reduced to "X number of groups formed" and "X activities undertaken." Actual attitudinal changes, conferring of authority, and exercise of power were not quantifiable and thus not reported outside the subsystem quarterly reviews. A series of papers in 1982-1983 promoting continuation of the subsystem did not clarify these criteria. Conferring of authority to groups/villages was considered "desirable" for reasons of equity, sustainability, and so forth, but measurement of whether that authority had been conferred or how it was being exercised was not made.

The dissolution of the subsystem in September 1984 was not fully supported by the Government of Zaire, and, indeed, some PNS officers argue that it was only administratively--as opposed to substantively--terminated. The farmer group development subsystem staff were absorbed into diverse subsystems, suggesting that while some of the physical structures of farmer group development (spring boxes, grain silos) will remain, efforts to endow authority to farmer groups will not come to fruition.

3. DECISION-MAKING

3.1 Decisions Within the PNS Structure

With authority derived from Kinshasa and legitimacy from North Shaba, and a structure that dispersed responsibility to different levels and units, PNS did not have a strong central focus for its operations. The lack of agreement on objectives and approach was reflected throughout the PNS structure. The infrastructure subsystem, in the early days, had no established criteria for selecting bridges for construction; it simply had instructions to build bridges. The research and extension subsystem was not sure until recently whether it was to do pure or adaptive research; at the time of this study, the ultimate disposition of the training center being constructed at Ngaba was still unclear. The data collection and analysis subsystem faced numerous competing demands. The marketing and credit subsystem was to assist merchants while protecting the rights of the small farmers. And the position descriptions--until late 1982--for the deputy directors of the PMU were each at least three jobs in themselves. Decentralized decision-making within this atmosphere thus focused on short-term operational needs; the broader picture was ambiguous.

The PMU, which was to set the objectives for the project, was occupied in the early years with logistics and "crisis management" that left little time for forward thinking. It was responding to the mandate from the Government to grow more maize while also learning from the contractor about the need for small farmer participation in broad-based development. The farmers themselves appear to have been more interested in social services than either maize or group development.

Nonetheless, middle-level staff made decisions during this period that resulted in actions being taken, which, in turn, provided the staff with experience. The lack of central direction may, indeed, be a contributing factor to the staff's high motivation and sense of ownership of the project. Staff made their own decisions for subsystem activities and succeeded or failed on their own merits. Often, as evidenced by minutes of meetings,

decisions were made on a group basis; the decision for the farmer group development subsystem to stop operations in Nyunzu Zone was one such independent group action. Being left on their own was perhaps not the most efficient way for staff to achieve project goals, but it contributed to individual and group development in ways that more centralized direction might not have allowed. Decentralized decision-making may also have been an operationally useful method for taking advantage of the lack of clear project objectives by permitting individual managers to interpret overall project aims in a manner that best suited their operation.

3.2 Farmer Participation in Decision-Making

A large body of literature suggests that small farmer participation is critical to the success of projects that purport to assist small farmers. The experience of PNS both refutes and supports this claim. On the one hand, the project is considered successful by the Government of Zaire, the World Bank, and AID, even with the lack of farmer participation in decision-making. On the other hand, some observers are less than sanguine about PNS sustainability once U.S. dollar funding ceases. It might then be claimed that the impact could have been sustained had the farmers participated more throughout the project. Given the still-evolving plans for the project's future, the only finding for now can be, "we must wait and see."

3.3 Kinshasa: The Department of Agriculture and USAID

Formally, the decisions made at the Kinshasa level were few. Financial resource allocations of both dollar and Zaire accounts were decided by AID and the Government of Zaire, although authority to spend the dollars was delegated to the contractor. Actual transfer of the approved amounts of Zaires rarely happened. Both the Government of Zaire and USAID signed off on requests for training in foreign countries, and both approved technical assistance positions and personnel. For most of the project, both parties had a fairly low-profile relationship with the project.

The informal network for decision-making was much more active and, indeed, was a source of problems for the project at one time. As discussed below, daily radio communication between Kinshasa and Kongolo, and among Kongolo, Nyunzu, and Mbulula, permitted verbal decisions to be made with only brief radio logs as records. Given the high degree of key personnel continuity, this did not seem to be an operational problem, although a May 1982 U.S. Government audit noted that "USAID personnel [also] did not document decisions" and recommended that "USAID/Zaire, in coordination with the Project Director and the Contract Chief of

Party, establish procedures for (a) controlling and documenting changes in plans and priorities...." The recommendation was deleted from the final set of audit recommendations, but the PMU and USAID now have a simple system for recording decisions: one entity sends the other a letter proposing an action or change and stating "if you concur please indicate by your signature below."

Decisions about policy and overall funding levels for dollar funds are necessarily taken by USAID/Kinshasa with formal and informal participation by the Kongolo team. Most decisions seem to be based on information provided by Kongolo and funding levels or other considerations mandated by AID/Washington or the Government of Zaire. Formal negotiation between the Zairian and the U.S. Governments seems minimal; each side works its own informal networks to prepare the groundwork for formal decision. The close relationship of the American and Zairians in the PMU fosters understanding between them. There have been only a few major disagreements during the life of PNS. A notable exception to this joint exercise of authority was during the planning for PNS integration with Estagrigo, when the formal and informal networks did not come together for some time.

4. COMMUNICATIONS

Communication within PNS and between PNS and Kinshasa has been smooth throughout the project. Communication with farmers was generally good. All communications have been subject to two basic contextual factors: distance and language. These factors were discussed in depth in Appendix B. A few additional observations are included below.

4.1 Sociocultural Distance

Sociocultural distances between Kinshasa and Kongolo, and PNS/Kongolo and the farmers, were lessened due to the ethnic/national makeup of the PNS team. There was, however, and still is, somewhat of a "pioneer mentality" among senior personnel in Kongolo vis-a-vis Kinshasa, one not at all dissimilar to the common USAID Field Mission attitude toward AID/Washington. This attitude ("they don't know what we have to do out here") is markedly less strong than in other remote AID projects in similar countries visited by team members, because of frequent visits by Kinshasa and PNS personnel back and forth and daily radio conversations.

However, there was a communication gap between PNS staff and the beneficiary population, despite their relative overlap at the lower levels. Autonomous or not, PNS was still a Government

project, and the inhabitants of North Shaba still mistrust the Government. Management enhancement interventions to lessen this gap, such as the efforts of the farmer group development subsystem, were only partially successful.

4.2 Language

In North Shaba, Swahili is basically the lingua franca, with ki-Hemba in the Kongolo area and a Luba dialect in the Nyunzu area the languages of the people. Most Zairians recruited from outside North Shaba either knew Swahili or learned it well enough to communicate effectively. Much of the field agriculture extension staff and the local population spoke ki-Hemba. Formal and written PNS communications were in French.

Although at least one PNS evaluation, in April 1982, noted problems with technical assistance team members' command of French, verbal communications in the project seem to have been smooth for the most part. Zairians, who are frequently strong linguists, seem to be able to ferret out meaning even from the nongrammatical sentences of poor speakers of French. Those expatriates who have worked with farmers have learned, for the most part, enough Swahili to get by and use interpreters when necessary. At least one-third of the expatriate personnel assigned to PNS speak French and Swahili satisfactorily.

Written French and English were more problematic for expatriates and Zairians respectively, and some communication suffered as a result. The warehouse and logistics operations, for example, had trouble recruiting a competent Zairian who also knew enough English to understand parts and repair manuals for the plethora of brands and makes of equipment in Kongolo. Data collection and analysis subsystem personnel expressed dismay to the team over the fact that many of the reference manuals and professional books sent to them were in English, which took them a long time to read. Contractor reports are required by the contract general provisions to be in English, although the contractor is to be lauded for translating major documents into French. Many Zairians in Kongolo--perhaps because of links with Zambia and Tanzania--know a little English. In sum, language, although important, appears to be less of an issue in PNS than in some other projects.

4.3 PNS Internal Communications and "Bureaucratic Hygiene"

Various evaluation reports and recommendations notwithstanding, the team was impressed by the administrative record keeping throughout the mid-level management of PNS. In one interview

session, the newly appointed Administrative Sector Chief at Mbulula was asked how she managed to communicate with the over 100 staff from various subsystem teams operating in the sector. She explained about monthly sector coordination meetings, and then quietly pulled out a file of monthly meeting minutes beginning in December 1978. These minutes cover, on a monthly basis, activities, plans, and problems of each of the subsystems operating in Mbulula and note any need for action and coordination. Copies are forwarded to subsystem chiefs and the PMU. The combined minutes of these sector meetings in Kongolo, Mbulula, and Nyunza basically form the written history of PNS and are a gold mine for any future investigations. The meetings themselves, as evidenced by the minutes, were lively, active exchanges of substantive and administrative information. In sum, at the middle- and field-staff level, communications among project individuals and teams seem to have been excellent.

The vertical subsystems also seem to have had strong communications, again evidenced by comprehensive minutes of monthly and/or quarterly subsystem meetings--also readily available in files. The lack of recorded decisions and communications seems to have been greatest within the PMU and between the PMU and subsystem chiefs. Meetings were frequently cancelled because personnel were traveling or were "too busy," and minutes were either not written or not saved. Given, again, the continuity of key Zairian personnel, this lack of recorded decisions has not presented operational problems.

APPENDIX E

INFORMATION MANAGEMENT

Flexible project design was a key component of the original PNS Project Paper. The basis for the continuous redesign of the project was to be a management information system that would "test a considerable number of assumptions and relationships upon which the project success depends." The specific objectives of the information system as detailed in the Project Paper were as follows:

- Monitoring of project implementation vis-a-vis project objectives
- Data analysis, including the demonstration of causal relationships between specific project activities and successes or failures
- Evaluation of project performance, "with particular attention to the process of involvement, assumption of responsibility, and capability of sustaining the development effort of the local farm population"
- Formulation of recommendations for redesign of the project as well as for the design of other projects

This would be an ambitious program for a project in a developed country that had good baseline data, trained staff, and adequate equipment. Given the conditions under which PNS had to operate, failure of the information system to meet its objectives was inevitable.

Performing the activities outlined above requires the collection of a large amount of data. One can characterize the necessary data generally as either project-external or project-internal.

Numerous kinds of external data would be required to carry out the analysis envisioned in the project design, including census data, demographic characteristics, numbers and locations of agricultural and nonagricultural products, farm household revenues and expenditures, market basket surveys, and so forth. To measure progress, one would have to collect these data series on a regular basis. There were no existing reliable data sets for any of these indicators.

To carry out all of the tasks outlined, the data collection and analysis subsystem was allotted only 16 personnel positions. Extension agents of the research and extension subsystem were to assist in data collection, but the project design called for only

20 extensionists during the first year of the project. Because extension agents had other functions to perform, they could spend only part of their time in data collection activities. Very few extension agents or data collection and analysis staff had had any training in data collection and sampling methods. Given the total lack of baseline data, resources should have been poured into the collection of such data during the first year of project implementation. Available personnel resources were totally inadequate.

Another impediment to data collection explicitly acknowledged in the Project Paper was the heavily ingrained hostility of farmers toward questions on crop production and incomes. Extension agents in the province before the inception of PNS had an infamous reputation for harsh treatment of farmers--ordering them to grow specific crops against their will, stealing money and produce, and so forth. Although PNS employed persuasion and cooperation rather than coercion, farmers were suspicious of newcomers asking for information.

Internal project-generated data concerned project inputs (financial resources, commodities and equipment, personnel training) and outputs (number of farmers' councils created, results of agronomic research, data on road and bridge construction). The data collection and analysis subsystem was to elicit these data from the other five subsystems. The ability to collect this information was balanced precariously on two suppositions: first, that the other subsystems would keep reliable records; second, that they would be willing to share their information. Neither of these assumptions held true.

According to the project design, the data collection and analysis subsystem was to monitor progress by all subsystems and report vertically (upward) to the project management unit. However, because the subsystem was on the same horizontal plane as the other subsystems, the result was predictable--the other five subsystems were reluctant to provide progress reports to a unit that was an organizational equal.

The data collection and analysis subsystem suffered greatly from high turnover of Zairians in top positions and insufficient direction. According to the original scope of work, the Deputy Director of PNS (also the American Chief of Party) was to devote 50 percent of his time to guiding the work of the subsystem. But the Chief of Party had to spend most of his time on other pressing duties, understandable in a project as complex and remote as PNS.

Despite these built-in impediments, the subsystem staff collected many useful data sets and produced the creditable reports. Valuable village profiles and basic data on agricultural households in the project area are now available. In

large measure this is due to sensible collaboration with other project staff. There is a good deal of communication and cooperation between data collectors and extension agents. A three-member team usually measures growth and estimates production of maize each season: someone from the data collection and analysis subsystem, an extension agent, and an agronomist. Data on maize marketing and market prices for consumer goods are collected by agents of the marketing and credit subsystem for analysis by the data collection and analysis subsystem.

Information collected and analyzed by the data collection and analysis subsystem is used by project personnel and others, although to what extent is uncertain. The head of the infrastructure subsystem told us that he uses the demographic data as input when determining road-construction priorities. Regional Zairian officials have used information from the data collection and analysis subsystem to back up requests for resources to higher Government levels. Most official reports on the project incorporate data produced by the subsystem. The present head of the subsystem told the team that representatives from Estagrigo have recently requested agricultural statistics.

APPENDIX F

FINANCIAL MANAGEMENT

Although few irregularities surfaced during the life of PNS, evaluations and audits consistently faulted PNS for its lack of a financial management system. From the beginning, the project suffered from a lack of adequate records and receipts for local currency expenditures and was unable to provide reliable data for either planning or accountability. Improvements have been made in the last year, and some are noted in this appendix.

Keeping track of local currency accounts presents formidable difficulties. For one thing, PNS has five sources of local funding:

1. Ordinary, or Recurrent Budget, from the Government of Zaire Ministry of Finance
2. Investment Budget, from the Ministry of Planning
3. Budget Annex, or Additional Funding Budget, from the Ministry of Finance
4. Counterpart Funds, from the sale of PL 480 goods (USAID has overall authority over counterpart funds, but the Secretary for Counterpart Funds in the Ministry of Plan signs off on counterpart fund allocations.)
5. Internal Receipts of the project itself, from truck rentals, sales of seeds, used tires, and so forth

Monitoring the various sources of funds was complicated by the erratic timing of the release of moneys to the project. With constant cash-flow constraints, salaries were frequently months late. Road construction equipment often lay idle because local currency was unavailable for fuel purchases and spare parts.

A more basic handicap was the failure of the Government of Zaire to meet its overall promised funding levels to PNS. The discrepancy between budgeted amounts and actual outlays was approximately 20 percent. Although many factors have contributed to this failure, among the most salient are the following:

- Unrealistic budgets. For the period 1975-1982, Government revenues fell short of budgeted amounts by an average of 17 percent.
- Overvaluation of the Zaire and high levels of inflation during the early years of the project. (The inflation rate was 100 percent in 1979.) The confusion created

by these factors was compounded by the wide gap between official and unofficial exchange rates and by a rapidly worsening balance of trade deficit. With the purchasing power of the Zaire declining quickly, obligated funds had to be withdrawn to meet foreign exchange demands.

- The failure of the Government to assign a high priority to agriculture. Although agriculture has provided 20 percent of the GDP over the last 10 years, Government support to the sector has been well below 10 percent of the national budget.
- Tight budget controls were imposed as part of the International Monetary Fund's economic stabilization plan for Zaire. These stringency measures have affected the Department of Agriculture adversely.

During its first 7 years, PNS had no budgeting or financial management procedures for flexible planning, monitoring, and evaluation. An example of the problems that resulted was the building of the training center at Ngaba. Although there was never a consensus about who would be trained there, money continued to flow into building construction. There is no documentation concerning how these decisions, involving large resource transfers, were made.

Among the many omissions noted in previous evaluations and audits was the absence of journals and ledgers and balance sheets and the lack of any reconciliation of project revenues to sources. In short, there was not a modicum of financial accountability through 1982.

Responsibility for financial management is vested in the PMU, especially in the Assistant Director for Administration and Finance. In March 1983 an experienced Zairian was hired for this position. He has made significant progress in remedying the deficiencies noted above. Journals have been started, and entries in accounting ledgers are more detailed and better cross-referenced. Although at the time of this study expenditures were not entered by subsystem, they could be tracked. Within 24 hours after a request was made for expenditure breakdowns by subsystem, the Assistant Director was able to provide us with that information.

Subsystems began to use unit costing. The infrastructure subsystem could provide figures on the cost of maintaining a section of road or the construction of a new bridge. The adaptation and extension subsystem was able to develop unit costs for the multiplication of certified maize seed. In another move to strengthen financial accountability, PNS contracted with the international accounting firm of Coopers & Lybrand to find a chief accountant for the project. They recruited a highly qualified Zairian who was hired in the first quarter of 1983.

The accounting section appears to function well as a unit. All members of the section have their own areas of responsibility, but each knows the duties assigned to the others and could fill in if needed. The six accountants we spoke with all expressed a desire for more training. They suggested that audits such as the ones conducted by Coopers & Lybrand be accompanied by short-term, on-the-job training in improved techniques.

A major source of local funding for PNS was counterpart funds from PL 480 proceeds. In 1983, counterpart funds accounted for 47 percent of Government contributions to the project. Project officials estimate that during 1985, 65 percent of project funding will be derived from counterpart funds. Such high percentages of counterpart funding should have triggered closer USAID monitoring of the disposition of these funds. Although full routine audits may be beyond Mission capabilities, some mechanism, perhaps spot checks conducted by the USAID Mission or a reputable accounting firm, should be employed to ensure the accountability of the use of counterpart funds. This was also the recommendation of the Regional Inspector General's audit report of May 1983.

APPENDIX G

LOGISTICS AND COMMODITY MANAGEMENT

During the pre-implementation phase of PNS, critics of the North Shaba site argued that "you can't get there from here." Their objections were not unreasonable. New logistics difficulties occurred during the first couple of years of the project. The worst floods in recent history inundated the project region in March-May 1977, negating any road improvements that had been made. The two Shaba wars of 1977 and 1978 disrupted movement of goods into the area. Despite these inauspicious beginnings, PNS succeeded in getting the goods delivered. The basic keys to this success were advance logistics planning and management creativity.

Orders for goods that could not be purchased locally (virtually everything) were forwarded to the PNS Bureau for Logistics Support in Kinshasa, a crucial component of the logistics operations. Equipment and spare parts that could be purchased in-country were usually bought in Kinshasa and forwarded to Kongolo. Purchase requests for U.S. products were sent from the Logistics Bureau to the U.S. headquarters of the principal contractor or subcontractor for the construction of roads, bridges, and buildings for PNS. Goods were usually delivered at Matadi, a large port serving Kinshasa. The Kinshasa Logistics Bureau received the goods, cleared them through customs, and transshipped them to the project area.

Logistics personnel employed a variety of means to transport items to Kongolo. Large, heavy pieces were sent by truck. Road improvements have shortened the Kinshasa-Kongolo run to 2 weeks (sometimes longer during the rainy season). Spare parts and other equipment not immediately needed were held until the next regular truck shipment to Kongolo. The light aircraft chartered to transport personnel between Kinshasa and Kongolo always carried commodities as well. PNS had numerous visitors throughout its history, almost all of whom chartered small planes to take them to Kongolo. The Kinshasa Logistics Office, notified in advance of visitors' plans to fly to the project area, would set aside items to go along. Until 1983, PNS had its own Cessna 206 and a pilot/mechanic. Although its primary purpose was staff transport, the plane carried small amounts of cargo to the project area as well. The plane is being ceded to Estagrigo as part of the integration plan.

Fuel supply was erratic in Zaire, including periods when none was available for purchase in-country. If the river levels fell below a critical point during the dry season, shipment became impossible, even if there was fuel. Although PNS occasionally suffered from fuel shortages, the problem has been

largely alleviated. The project has opened direct credit lines with banks and private firms, including oil companies. This enabled transactions to be completed quickly. And the project bought large quantities of fuel at a time, mitigating the effects of fuel shortages. The project fuel depot in Kongolo has a large capacity, and PNS took advantage of this.

Although logistics operations were successful in getting things to the project site, inventory and control systems were inadequate in the warehouse and fuel depot at project headquarters in Kongolo. During most of the project's life there was no tracking of purchase requests, no periodic warehouse inventories, no monitoring of fuel use, and no systematic arrangement for items stored in the warehouse. This lack of a logical arrangement made it difficult for French-speaking Zairian warehouse workers to find specific parts, because almost everything in the warehouse was American-made and labeled in English.

Lack of adequate supervision had a great deal to do with the lack of a commodity management system. The Assistant Director for Administration and Finance was responsible for warehouse operations. There is no evidence from the first 7 years of the project to indicate that persons holding this position had tried to install even the simplest of systems. This is one area in which the project really needed expatriate assistance. There were extremely few Zairians who had any experience with warehouse management operations. There was a high turnover in Zairian warehouse chiefs, due in part to mysterious disappearances of stored goods. Some of the confusion caused by discontinuity of staff could have been avoided had adequate commodity management systems been in place.

Beginning in January 1983, the new warehouse chief initiated significant improvements in commodity management. There is now a simple, but apparently effective, system for tracking purchase requests from request to delivery of goods. Quotas have been established for fuel use by geographic sector and subsystem; requests and receipts for fuel must be signed by the requester and by the warehouse chief or authorized representative. Methodological, detailed inventories are in process--a laborious process given the lack of prior records. The task of rearranging supplies in the warehouse by supplier and part number is largely completed. The warehouse chief has added French names of parts to the outside of many packages, making verification easier for Zairian staff.

APPENDIX H

HUMAN RESOURCES DEVELOPMENT AND MANAGEMENT

1. THE BENEFICIARY FARMERS

It is estimated that 145,000 people--mostly farmers and their families--live in the project zone. Most farm plots are 5-7 hectares, although, with the advent of PNS, some enterprising farmers are traveling beyond their village areas to plant larger plots of maize. Each village is composed of 6-20 families with male heads of households. Some households have up to three wives with their respective children. Sometimes hired laborers, often Pygmies, assist in the agricultural work. Traditionally, the men select the fields that are to be planted and are responsible for clearing it. Maize planting, weeding, and harvesting are the responsibility of women, children, and hired laborers, although the men participate in the harvest and are responsible for marketing the crops.

There are, of course, variations in agricultural and commercial practices. For example, in the Kongolo area farmers are quite settled. They consume their own corn and sell only their surplus. Farmers in the Nyunzu area work in sandier soil and are more nomadic--moving from place to place to find more fertile land. They eat peanuts and manioc rather than corn, which permits them to market all the corn they produce. It was important, therefore, that the project tailor its activities--research, extension, road construction, marketing--to take these differences into account.

Although the predominant impression is of a conservative North Shaba farmer, changes did occur as a result of the project. Economic returns from the new seed, new practices, and higher prices were a sufficient incentive for many farmers to change their practices and increase their production.

2. PROJECT PERSONNEL

2.1 Overview

As of September 1984, PNS had 511 employees. The distribution of employees by unit and subsystem is shown in Table H-1. Of these 511 employees, 483 were hired locally under individual contracts to the project. Twenty-eight are cadre, Government of Zaire functionaries assigned to the project. The 511 project personnel are organized into seven active units or subsystems.

Two other subsystems (intermediate technology and farmer group development) no longer exist. Three cadre now working in the adaptation and extension subsystem have some residual responsibility for the work of those two subsystems.

Table H-1. Distribution of PNS Employees by Unit and Subsystem, 1984

Subsystem	Zairian		Total	Expatriate Technical Advisers
	Local Staff	Government Cadre		
Project Management Unit	0	3	3	1
Administration/Finance	180	7	187	0
Kinshasa Logistics Unit	9	3	12	1
Subtotal (staff)	<u>189</u>	<u>13</u>	<u>202</u>	<u>2</u>
Adaptation and Extension	128	8	136	2
Data Collection/Analysis	12	3	15	0
Marketing and Credit	17	1	18	0
Intrastructure	137	3	140	3
Intermediate Technology	0	0	0	0
Farmer Group Development	0	0	0	0
Subtotal (line)	<u>294</u>	<u>15</u>	<u>309</u>	<u>5</u>
Total	483	28	511	7

A large portion (202 of the total 511) of the employees are in positions concerned with administration, finance, personnel, logistics, and other staff-related functions. The remaining 309 may be considered as being in substantive "line" positions. If this distinction is valid, PNS is heavy on the staff/support side, putting almost as much personnel effort into management as into substance. This emphasis was not initially proposed in the Project Paper and seems to have evolved according to need. Reasons for the emphasis include the geographic location and spread of the project, management complexity, and relative lack of experience of Zairians in management compared with technical fields such as agriculture and engineering.

Of the total of 511 personnel at the time of this study, the 140 in the infrastructure subsystem had been shifted out of PNS and are under the supervision of Estagrigo as part of the project phaseout. The 15 people in the data collection and analysis subsystem will also be shifted to Estagrigo to provide data for future activities. Some portion of the Kinshasa logistics unit

will be shifted to Estagrico. The study team heard no discussion concerning what was planned for the marketing subsystem. Perhaps even more important, there seemed to be no plans for the 202 people in administration and finance. Once the substantive subsystems are transferred, there will be little for the PMU and the administration and finance unit to manage.

Concern with management disintegration has begun. At least two cadre have already asked if positions could be found for them with the USAID Mission or with other USAID projects. Several project employees asked the team to intercede to keep AID from terminating support for the project. The Bishop of Kongolo made a similar request. Because PNS is the major employer in the North Shaba Zone, he was concerned with the socioeconomic dislocation resulting from the elimination of 200 positions.

PNS employees are in four locations (see Table H-2). The largest number are at project headquarters in Kongolo. The next largest group is in Mbulula, the site of adaptation and extension subsystem headquarters, the Ngaba training center, and the seed multiplication activity. Some infrastructure subsystem personnel also work out of Mbulula, particularly those concerned with bridge repair and maintenance. Because these activities will continue, Mbulula will continue as an active project site after AID funding terminates.

Table H-2. Location of PNS Employees, 1984

	Zairians			Expatriate Advisers
	PNS	Infrastructure Subsystem	Total	
Kongolo	177	90	267	3
Mbulula	134	50	184	3
Nyunzu	48	0	48	0
Kinshasa	12	0	12	1
Total	371	140	511	7

A smaller number of PNS employees, mostly data collectors, work out of the regional headquarters in Nyunzu, an important railhead. In Kongolo and Mbulula, PNS is the major nonagricultural employer, and its personnel, therefore, have a major impact on the life of these towns.

2.2 Selected Analysis of PNS Cadre

The team asked the Personnel Service (a unit established within the administration and finance unit) to pull together statistics on PNS cadre. Of the 28 cadre, information was available on 26:

- Age (years): youngest-28; oldest-52; mean-34.8; median-36
- Sex: male-25; female-1
- Experience With PNS: least-3 mo; most-6 yr; median-5 yr
- Prior Private Sector Experience: 13 cadre have 2-16 years
- Home Region: Kivu-9; Shaba-5; Bandundu-3; Kasai-Oriental-5; Kasai-Occidental-4
- Academic Studies Completed:

<u>Zairian Degree</u>	<u>U.S. Equivalent</u>	<u>Number</u>
Ingénieur Agronome A	M.A./5 yr college	1
Licencié	B.A./4 yr college	5
Ingénieur Technicien	3 yr college	5
Gradué, Développement Rural	3 yr college	11
2 an Candidature	2 yr college	1
6 an p. Premiere (Diplome)	High School	1
4 an p. Premiere (Brevet)	Jr. High School	2

Some other points of note are presented below:

- Fully half of PNS cadre have been with the project for at least 5 of the project's 7 years. This supports the team's observation of a high degree of employee loyalty to the project. This loyalty results from a strong belief in the project and from good personnel management, including high salary levels and positive attitudes toward health and other employee services. Some loyalty is attributable to the project's location in the home town of many of its employees.
- Half the cadre had prior work experience in the private sector--at least one for 16 years. This is indicative of the mixed nature of the Zairian economy. People go back and forth between the public and private sectors. It should not be so difficult, therefore, for PNS cadre to work under the supervision of Estagrigo, a private sector company.

- Cadre come from five of the eight Zairian regions, with only 5 of the 26 coming from the Shaba region--the site of the project. That is, despite the isolation of the project zone, the concern with ethnic differences/rivalries, and the often stated comment that Zaire is not yet one nation, the Government was able to assign staff from throughout the country. In addition, family/tribal ties in Zaire are very close. But they can also be stultifying. Any person earning money, for example, is obliged by local custom to share his earnings with his family. Many bureaucrats, therefore, prefer to work outside their home zones to avoid pressures from their families to share wealth.

- The educational level of PNS cadre is high. All but four have a degree at least equivalent to a U.S. bachelor's degree. At least one (and perhaps six, depending on equivalency) have master's degrees. This is significant in a country that had few college graduates at the time of independence.

2.3 Internal Personnel Management

With such a large staff located at four sites and organized into seven specialized operating units, personnel administration becomes extremely important. To handle these matters, a central personnel service was established within the administration and finance unit. Its functions include recruitment, classification, salary and incentives management, efficiency reporting, discipline, promotion, reporting, record keeping, and the like. The personnel service has a detailed organization chart and a published list of duties for each person in the unit.

2.4 Pay and Allowances

There are no "standard" salary levels in Zaire, although there are similarities among many of the systems. PNS cadre, for example, who are seconded from the Government, come under the rules and regulations of the Government of Zaire. PNS employees who receive local contracts come under PNS rules and regulations, which conform to a published national labor code. As a result, both Government and the local union representatives are involved in decisions affecting PNS personnel.

The salary of PNS cadre is determined by the Government. Each Government ministry has its own salary level. The Ministry of Education, for example, has one of the lowest salary levels, while the Roads Office has one of the highest. That is signifi-

cant for the infrastructure subsystem of PNS because its cadre are assigned from the Roads Office. The Ministry of Agriculture--from which most PNS cadre are assigned--also has a high salary level.

For comparison purposes, we can use the salary of a university professor, which can be as low as Z500 (US\$13.00)/month. The Government pays PNS cadre a salary that ranges from Z2,857 (US\$71.00) to Z8,000 (US\$200.00)/month plus an extra amount for each wife and child. In addition, the project provides to each cadre free housing similar to that provided to expatriate advisers, and salary supplements or "primes" of Z1,400 (US\$35.00) to Z1,700 (US\$41.00)/month.

The salary paid to cadre would appear to be a significant incentive to ensure that competent Department of Agriculture personnel go to Kongolo to work for the project. Primes are a controversial subject in Africa. They were first paid by the World Bank to ensure that it got the best people for its projects. Other donors followed, and throughout Africa donors are in competition for the better project personnel. Primes, of course, skew salaries paid to local personnel. They almost ensure the loss to the project of people receiving these supplements when donor funding ceases and primes are no longer paid. Perhaps payment of primes is one way to start a project in a country such as Zaire, but it can cause problems for long-term project sustainability.

Local staff are paid a lower salary, from Z387 (US\$9.70) to Z1,546 (US\$38.70)/month (see Table H-3). There is a pay system of 13 levels graded in terms of education, prior work experience, and nature of work to be performed. For example, guardians and watchmen are at level I/2, chauffeurs are at level II, senior clerks and administrative assistants are at level IV. Those who have earned a Brevet (the equivalent of a U.S. high school degree) and have some years of university training can be paid at the Maitrise or Plafonnés levels. Promotions can be made from one level to the next on the basis of ability and do not necessarily require additional formal education.

In addition to base salary, employees receive Z5 per wife and Z26 per child. Contract employees get a small housing allowance of from Z70 to Z250, plus Z10/day as a transportation allowance. These rates are determined locally in consultation with the local union representative. Regular contract employees do not receive salary supplements such as primes. The one exception that seems to be traditional throughout West Africa is that cashiers, accountants, or anyone who touches cash receives an indemnité du responsabilité for the extra hazard of dealing with money.

Table H-3. Salary Levels for Local PNS Staff

Category	Level	Base Salary (Z)
I	1	387
	2	425
II		483
III	1	580
	2	637
	3	696
IV	1	773
	2	893
V		1,160
Maitrise	A	1,430
	B	1,469
	C	1,508
Plafonnés		1,546

2.5 Other Personnel Incentives

PNS management is aware of the importance of positive employee relationships and, therefore, fosters a team spirit among PNS employees in many different ways. PNS T-shirts and hats were distributed to employees to help them feel that they are a part of PNS; they also help promote PNS to farmers in the field, by making them aware of the project and of project support from Government officials in Kinshasa. PNS employees, aware of these positive attitudes, in turn feel that they are part of an important activity.

PNS has a liberal leave policy, which is particularly important in a society with large extended families and attendant family obligations. PNS also has a liberal health care policy. PNS pays an annual fee to the local hospital, which then provides free medical care to all employees, their wives, and children. For more serious cases, PNS pays to send employees and their families to the regional hospital in Lubumbashi. During the team's visit to Lubumbashi, it was noted that PNS cadre visited

their employees in the hospital. Concern with employee welfare went beyond institutional action.

In Kongolo, PNS helped set up and pay for a social club where employees and their families can meet and dance. Although this may not seem important, the lack of recreational facilities in North Shaba makes even simple activities very important to the morale and productivity of Zairian and expatriate personnel.

2.6 Training for Project Employees

Table H-4 summarizes the training provided to Zairian project personnel since the inception of the project. Table H-5 presents planned training through project completion.

Table H-4. Training Provided Through PNS,
September 1976 to September 1984

Subsystem	No. Trained	Person-Months	Subject of Training
PMU	3	44	Management, agronomy, integrated rural development, project analysis and evaluation
Administration and Finance	3	4	Administration and finance, financial management, budgets and accounting
Adaptation and Extension	19	32	Agronomy, fertilizer, research management, farm machinery and equipment, training of trainers, warehousing, project management
Farmer Group Development	5	36	Rural sociology, cooperative development, radio, training of trainers
Total	30	116	

Table H-5. PNS Planned Training, October 1984 to Project Completion

Subsystem	No. Trained	Person-Months	Subject of Training
PMU	4	10	General management
Adaptation and Extension	6	18	Agricultural credit, rural development, agronomy, warehousing
Marketing and Credit	1	2	General management
Data Collection and Analysis	1	3	Training of trainers
Infrastructure	3	5	Public works management
Total	15	38	

Actual and planned training programs for management and technical skills appear to be inadequate. No focus is discernible in terms of the numbers and specific persons trained, length and cost of training, or subject matter of training. The amount of formal training seems meager. Only 30 Zairians have received training after 8 years of a project that at one time had 800 employees, and this training was short term, averaging no more than 4 months per trainee. Financial records indicate that only US\$100,000 of the US\$9 million so far expended by the project has gone for training. Most of the training went to the research and adaptation subsystem, while four subsystems--infrastructure, data collection and analysis, intermediate technology, and marketing and credit--received no formal training. Some attention is being given to these subsystems in the planned training programs, but the numbers are so miniscule as to be almost meaningless.

The lack of formal training casts doubt on the seriousness with which PNS, as well as the Government of Zaire and AID, views the issue of project sustainability and Zairian responsibility for its direction. Formal seminars or classroom training, of course, are not the only way to develop management skills. Other techniques such as on-the-job training can also be effective and were used under PNS. With regard to training as a management-enhancement technique, credit must be given to in-country

training programs and work experience received by project personnel before they came to the project. However, the project missed the opportunity to build on the background and competence of Zairian personnel by providing more specialized technical and management training.

Zairian project personnel were direct in stating their needs for training. The Deputy Director of the personnel service complained that he was not able to provide training to project personnel because of lack of funds. He knew of several inexpensive training programs in Zaire that he believed would be useful. The administration and finance division felt strongly that their work would be improved by additional training; they indicated that just bringing experts to project headquarters in Kongolo for hands-on training would be helpful. The people in the data collection and analysis subsystem noted that they had had no training; they felt that they had been forgotten. Although we spoke to no one who had formerly been with the now-abolished farmer group development or intermediate technology subsystems, we wonder if training for these personnel might have led to a more positive outcome for the subsystems.

The only criticism we heard of the project from Government officials in Kinshasa was that insufficient attention had been given to training of Zairian personnel so that they could more quickly take over the project. This criticism was part of a more general complaint that, in the management of the project, Zairian personnel were not given the opportunity early enough to move into senior positions of authority. They believed that more and better training would ensure success of Zairian managers and that on-the-job experience was also an excellent form of training.

3. TECHNICAL ADVISERS

The original Project Paper created a situation in which American contractor personnel were given a leadership role, almost independent of USAID and the Government of Zaire, to supervise and direct Zairian personnel in carrying out the project. In the early days, PNS was less an AID or Zairian Government project and more a contractor-directed project. That early decision probably resulted from two AID concerns: that the project was in too remote an area for USAID to manage directly and that misappropriation of funds is a major Zairian management problem. It was decided, therefore, to give financial control--at least of AID's dollar contribution--to the American contractor. At the time of the original Project Agreement, the Government of Zaire may not have perceived its lack of control over the project or perhaps it believed that it had little leverage with AID to modify the approach.

The original Project Paper called for eight technical advisers.

1. Chief of Party: An agricultural economist and the Deputy Project Director, this person would also provide technical direction to the data collection and analysis subsystem.
2. Director of Administration and Finance: Head of the administration and finance unit, this person would be responsible for administrative, financial, communications, and logistical operations.
3. Chief of Research and Extension: An agronomist with experience in extension.
4. Deputy Chief, Farmer Group Development: A rural development specialist with cooperative development experience.
5. Director for Infrastructure Development: An expatriate with construction management experience.
6. Construction Supervisor: An expatriate to work within the infrastructure subsystem.
7. Specialist in the Construction of Low-Cost Bridges: An expatriate to work within the infrastructure subsystem.
8. Equipment Maintenance Specialist: An expatriate to work within the infrastructure subsystem.

The first American adviser, the Director of Administration and Finance, arrived in July 1977. Shortly thereafter two advisers arrived in Kinshasa and Kongolo to begin work on the logistics problems. The first Chief of Party arrived in August 1977. There were some critical gaps in technical assistance, notably in agronomy and farmer group development for periods ranging from 1 to 3 years. New positions, for logistics and administration in both Kongolo and Kinshasa, were added. The infrastructure subsystem was handled by a subcontractor. At the time of this evaluation, three subcontractor technical advisers were responsible for road and bridge repair and construction and for equipment maintenance. In November 1984, at the time of this evaluation, the contractor Chief of Party was at post, as well as two agronomists and a warehousing specialist from the contractor and three infrastructure advisers from the subcontractor.

Because of the lack of housing and other local amenities, families of expatriate advisers did not arrive until later. The isolation of the project area and the challenge of logistical support made it difficult to recruit qualified advisers. That

the lack of creature comforts contributed to the early difficulty of securing qualified expatriate advisers is admitted by all; that an excellent contractor staff is now in place may be partially the results of having generally resolved, over time, the problem of the provision of supplies and equipment not only for the project, but for project personnel as well.

It is the view of the study team that the contractor staff now in place is of high caliber. Although some of the project success is directly related to the presence and high caliber of the expatriates, other factors also must be noted. One is the substantial reduction in the size and number of subsystems under the project. This streamlining has permitted management and expatriate staff to give more attention to the remaining units. The other, and perhaps more important, change has been in the role of the expatriate advisers and their relationship to the Zairian managers. In the early days of the project, contractor personnel were co-directors and deputy directors; now they are advisers and counselors.

Both the prime contractor and subcontractor were small firms that maintained a continuity of personnel in the home office and the field that is impressive for such a long-term project. The first contractor Chief of Party, for example, departed Kongolo after 3 years and remained until mid-1984 as the Washington-based PNS backstop officer, traveling at least twice a year to Kongolo on monitoring visits. The president of the subcontracting firm visited Kongolo 11 times during the life of the project, averaging one trip every 9 months for planning and support activities. Short-term contractor consultants in agriculture and economics are regular visitors--almost part of the PNS team. This continuity of personnel results in maximum efficiency, with neither expatriates nor Zairians having to spend the first week of a temporary duty assignment establishing credibility and learning names and acronyms. This continuity in home-office backstopping and short-term personnel had a positive impact on the project.



