EVALUATION REPORT

ECONOMIC ASPECTS OF THE

THE NORTH SHABA RURAL DEVELOPMENT PROJECT

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1. INTRODUCTION

1.1. The National Situation

It would be hard to imagine a political-economic environment more inhospitable to economic development than Zaire affords at present.

The national economy has been going downhill for about a decade, largely as a result of unwise economic policies, including Zairianization and nationalization measures in 1974 and 1975, which were partially rescinded a year or two later, as well as large-scale unproductive investments; falling prices for Zaire's principal exports of copper and cobalt coupled with rising prices for its imports, particularly petroleum; and administrative bottlenecks (often associated with corruption, capital flight, and luxury living by the elite), which inhibit and distort investment and production.

The worsening terms of trade are outside Zairian control, but the unwise economic policies could be ameliorated if there were sufficient political will; and this in turn could increase productive investments and lessen unproductive skimming.

Unwise Economic Policies. The principal elements of these economic policies today consist of:

- Large budget deficits stemming from overspending by the Government of Zaire (GOZ), which have increased inflationary as well as balance-of-payment pressures and have led to general price rises of up to 100% annually in the late 1970's and foreign debts which now stand at $4 to $5 billion.

- Pricing policies which have held down prices to domestic producers. Designed mainly to ease the impact of rising prices on urban consumers, the policies have inhibited both agricultural and industrial production. They have thus depressed the supply of goods available to consumers and consequently have helped make further substantial price rises inevitable.

- Overvaluation of the Zairian Currency (zaires - Z), which inhibits exports and foreign-exchange earnings, encourages capital flight and less productive imports, and distorts investment and production. The overvalued zaire (the official value is now nearly three times that on the "parallel market") often precludes many exports, by making them unprofitable to domestic producers, or it diverts them into unofficial channels (i.e., smuggling). The lower cost of imports and of capital, to those who can gain access to foreign exchange through official channels, encourages its use for purposes which often contribute only minimally to economic-social development. Investment and production are distorted, because of the resultant scarcity of foreign exchange needed for imports of essential raw materials, intermediate goods, equipment for domestic producers in all economic sectors, and consumer goods needed as incentives to agricultural and other workers.

- Government investments which have been particularly low for agriculture and supporting services, including the road and rail network as well as agricultural equipment and spare parts. Even in its three-year plan for 1979-81, where agriculture was described as the "priority of priorities," the proportion of public investment planned for agriculture was set at only 11% of total public investment, while the ratio of actual to planned investment for 1979-80 turned out to be less than 20% compared with 40% for the average of other sectors. Moreover, as noted above, Government exchange-rate and pricing policies have discouraged private investment in productive capacity, since (e.g.) industrial operations can in any event utilize only a small fraction of existing capacity because of import shortages.

Recent efforts by the international community to help stabilize the Zairian economy -- evidenced by debt rescheduling, IMF Extended Fund Facility (EFF) arrangements for the June 1981 to June 1984 period valued at about $1 billion, and large aid infusions from the World Bank and bilateral donors -- led to significant improvements in GOZ policies and renewed hope for economic development.

Starting in late 1979, Zaire reduced its budget deficit, staying within IMF-set ceilings; slowed the rate of inflation from over 100% in 1979 to less than 50% in 1980 and 1981; reduced the arrears on foreign-debt payments from 75% of goods and services in 1979 to an estimated 25% in both 1980 and the following six months; and increased its production (real GDP) by an estimated 2.5% in 1980 and nearly 2% in 1981, compared with declines of over 3% annually in the mid and late 1970's.

Recent Trends. Since mid-1981, however, Zaire's economic situation has deteriorated in important respects.

- The value of Zaire's exports, affected by lower copper and cobalt prices as well as by transport problems, declined by an estimated 9% in 1981. (Zaire's overall terms of trade fell by 16% in 1981, following a 9% decline in 1980).

- Servicing of foreign debt, despite rescheduling to both government and private creditors, climbed from levels of 12% of export earnings (goods and nonfactor services) in the second half of the 1970s to an estimated 20% in 1980 and 30% in 1981. And foreign-debt-payment arrears appear to have increased substantially since mid-1981.

- Real imports, even including those coming in unofficially, remained low in 1981 despite nominal increases. Thus, production in such sectors as mining, manufacturing, and agriculture, which rely on imported materials and equipment, continued to be inhibited.

- Price distortions in the economy remained substantial, adversely affecting both agricultural and manufacturing investment and production.

- Budget revenues increased in 1981, partly as a result of higher import duties and excise taxes as well as the extension of duties to goods purchased with foreign exchange procured unofficially. Expenditure increases, however, more than exceeded those of revenues. Thus, starting in the second half of 1981, budget deficits exceeded the ceilings agreed upon with the IMF and have continued high into 1982.

1.2. The Situation in North Shaba

Shaba Province is of special importance to the GOZ for both political and economic reasons. Situated at the eastern border, some 800 miles from Kinshasa, it has been the site of secession attempts, invasions, and uprisings, the most recent being the two Shaba wars in 1977 and 1978.

The southern part of Shaba is the site of copper-cobalt mining, the major foreign-exchange earner for Zaire, and it is also a center of light industry and metal refining. It has had to rely on food imports for some time (an estimated 150,000 MT of maize in 1979), which has been a substantial drain on Zaire's increasingly scarce foreign-exchange resources.

The northern part of Shaba is apparently capable of producing sufficient maize and other crops to support these industrial and mining activities. However, although North Shaba now sends significant quantities of maize and palm oil to the south, maize shipments are well below the amounts needed.

That part of North Shaba where Project North Shaba (PNS) is located is isolated not only in the sense of being distant from even a medium-size urban center but also because of the transportation-communication network. Scheduled air service, either passenger or cargo, is no longer available to or from Kongolo (flights are theoretically still scheduled, but there have been only two in 1982 to date); rail service is both slow and infrequent (currently once a week to and from Lubumbashi and Kalemie respectively); roads are inadequate for either long-distance cargo or passenger traffic; and telephone service is non-existent.

The GOZ's political need to demonstrate its concern for Shaba Province, North Shaba's agricultural potential, and the U.S. desire both to respond to the GOZ concern and to help small farmers made this project seem a natural for both countries, despite their recognition of some of the problems they would face.

1.3. The Agriculture Sector in Zaire and North Shaba

Agricultural production in Zaire before independence contributed substantially to export earnings, accounting for an estimated nearly 40% of the total value of exports in 1959. By the 1970's, however, agricultural exports had fallen substantially in both absolute and percentage terms, accounting for an estimated 18% of the total value of recorded exports in the 1970-79 period.

During the same years, Zaire became a net importer rather than exporter of food. By 1970, for example, maize imports had reached an estimated 64,000 metric tons. And by 1978 they had climbed to more than 175,000 tons, of which about 85% came in to South Shaba. The estimates, though subject to a wide margin of error, correctly reflect the trend: Zaire, formerly an important exporter of food and other agricultural products, had become a food-deficit country.

North Shaba produces a number of crops important to its own economy. The output of maize in the PNS area in the 1980-81 season was estimated at some 65,000 metric tons, or more than 10% of the over 500,000 tons estimated for the country as a whole. (Again, all estimates are crude.)

Most observers agree that PNS-area maize output could be expanded to meet most if not all the large maize-import needs of South Shaba. The opportunities for sustained production increases in North Shaba are greatly reduced, however, by the macro-economic situation already described for Zaire as a whole. In particular, the supply of essential inputs to increase agricultural production is both scarce and unreliable -- inputs such as fertilizers, tools, equipment, and spare parts. The supply of fuel, trucks, spare parts, and sacks for marketing is similarly scarce and unreliable. Inadequate credit for merchants buying maize from farmers seems to be another major problem, especially for smaller merchants (some larger ones insist their cash reserves are ample). The road and rail network is not well-maintained. And rail service is slow, infrequent, and unreliable. Moreover, the unrealistic foreign-exchange rate makes imported maize cheap for the importer, while GOZ pricing policies also tend to depress prices paid to Zairian farmers nationwide.

In addition to those national economic policies which adversely affect agricultural production in North Shaba, maize policies in Shaba itself discourage or, at best, fail to provide adequate incentives to maize farmers in several ways:

- Shaba Province has violated at least the spirit of the commitment made by the Ministry of Agriculture, under the Amended Project Paper to allow PNS-area maize to be sold freely to all buyers. The transportation of maize to the neighboring province of Kasai Oriental, where the demand for and price of maize is much higher, is illegal. Moreover, maize buyers in Shaba Province cannot buy freely unless they are recognized as buyers by the Province.

- The Governor of Shaba sets producer prices for maize (and other crops) which are supposed to be minimum prices. In the past, however, maize buyers have often convinced farmers that these were maximum prices, using them as another lever to hold down prices paid. At the start of the current marketing season (April 1982) the questions of who can buy maize from farmers and how much they can pay had still not been fully resolved, even though the minimum price had been announced the previous month. Moreover, even apart from the above-noted difficulties, prices announced at market time are too late to influence planting, so they cannot serve as incentives to increased production as they otherwise might.

- Finally, the maximum prices set by the Province for milled flour also serve to depress the prices traders can pay farmers for their maize.

The PNS area also produces many crops of both local and regional importance other than maize. According to a PNS survey, reported in March 1982, manioc and peanuts are widely grown in Kongolo and Nyunzu, cotton in all three areas (including Mbulula), while rice is grown mainly in Kongolo and Mbulula. Palm oil was not covered by the survey, although it is a major crop in the Kongolo area. (Next to coffee, it is the largest agricultural export of Zaire, but data on the share of North Shaba were not readily available.) A wide variety of vegetables is also grown in all zones.

These crops offer opportunities for export from the region, for improved diets locally, and for crop substitution if maize should prove less attractive to farmers in the future. Crop substitution, it might be noted, is a real possibility next year, since the prices of some other crops grown in North Shaba seem to be rising more rapidly than that of maize (see table in report on marketing). Such substitution would exacerbate the problems arising from the current maize shortage in South Shaba, perhaps leading to serious urban unrest in the south unless alleviated by additional maize imports, which the GOZ can ill afford.

2. EVALUATION FINDINGS

2.1. Adequacy of Measurements

The quality and accuracy of the physical data which are available seem to be both generally acceptable and improving. Though they are admittedly crude, and should therefore be interpreted as subject to wide margins of error, the data are probably as good as could be expected under the circumstances. It is not an easy task, for example, to estimate areas and yields under conditions where fields are non-rectangular, the spacing between plants varies widely, multiple cropping seems to be more the rule than the exception, and enumerators are relatively inexperienced.

Data available for analysis and management decisions, however, are inadequate in several important respects:

- Base-line data on such basic items as cropping patterns, hours worked on major crops during various periods, cultivation methods, tools and equipment used, areas worked, production, consumption, marketing and prices were not gathered at the start of the project.

- Historical data for the PNS area were not collated for any crop. Nor do PNS (or DAI) reports made available to the team analyze or discuss in depth the DOA data on the production and marketing of maize for earlier years (see Table 3).

- Neither time series nor comprehensive statistics on the current situation have been collected for PNS-area crops other than maize.

- Estimates of farm incomes are available for a few points in time, but they would be too flimsy to serve as the basis for comparisons for either total or average farm-household income, either gross or net, for either the PNS area as a whole or for the (significantly different) separate zones.

- Surveys have not been undertaken on farmers' attitudes, for example, in areas such as kinds of tools and equipment desired, reactions to PNS-produced tools and equipment, prices at which farmers would purchase seed, or the reasons for increases in areas planted to various crops -- such as higher prices to farmers, improved seeds, tools, labor availability, roads, marketing facilities, and availability of consumer goods. Nor, if there were discussions on these subjects between farmers and PNS extension agents or SCAD staff, was there any recording of them (systematic or otherwise).

- Data on actual dollar expenditures, either total or by sub-system, are not available at the project site for any prior year, nor are planned dollar expenditures available except for those set forth in the amended Project Paper (PP) in 1980. (Data on total dollar expenditures, not by sub-system, were found later at the USAID Mission.)

- Data on expenditures of local currency, both counterpart and GOZ budget funds, are available through calendar-year 1981. However, their accuracy is questionable, as is noted in other annexes. Budget estimates for 1982, though available, are not useful -- both because the actual totals are likely to be substantially different and because the breakdown by sub-systems is so uncertain.

2.2. PNS Purposes and "End-of-Project" Indicators Achieved

The over-all agricultural goal for Zaire, to which PNS is to contribute, is the achievement of national self-sufficiency in maize. The specific purpose of PNS, according to the amended Project Paper (PP) approved August 25, 1980, is dual:

- To increase the net income of small farmers in the Project area by 75% by the end of the project, as a result of raising corn production from 27,000 MT (1978) to 49,000 MT (1983);*

- To develop a rural development process in the form of a model that is replicable in other parts of Zaire.

By the scheduled project assistance completion date (PACD) of September 30, 1983, the end of project status (according to the same source) is to be as follows:

1. Annual maize marketed in the North Shaba project area is to increase from 11,000 tons in 1978 to 25,000 tons in 1983.

2. Maize marketed in the project area is to continue to increase at a rate of 10% per year (from 1983) through 1986.

3. Marketing of manioc, peanuts, rice and palm oil is to increase by (a total of) 20% between 1978 and 1983.

4. Net income of small farmers participating in the project for three years or more is to increase by (a total of) 75% - from an average in the two project zones of $385 in 1978-79 to $675 in 1983.

Whether PNS has developed a rural development process that is replicable in other parts of Zaire -- the second purpose of PNS -- is a question that is addressed in Chapter 4. Here only the first purpose noted above is discussed.

The short answer is that the data available are inadequate to assess the question on income, as was noted in the preceeding section. Moreover, even if more and better data were available, it would be difficult to answer the question as posed without addressing such very complex problems as the meaningful conversion of zaires to dollars under conditions where the exchange rates have been clearly out of line with relative purchasing powers. (The unofficial or free market value of the zaire is now about one-third its value under the official exchange rate.) Even if the zaires were not converted into dollars, as is done in the fourth "end-of-project" indicator in the log frame, the difficulties of estimating changes in

*The accuracy of the 27,000-ton figure is questionable. See Table 3 and text discussion.

real net income are formidable under conditions where the rate of inflation has approached or exceeded 100% in some years and has been at about the 50% level during the past two years.

In any event, PNS staff apparently did not foresee the need for this kind of data, on either a gross or net basis, despite the recommendations for additional attention in DAI's internal evaluation in 1980. Thus, the only recent data available from SCAD on anything approaching farmer incomes are in a report for the 1979-80 season, which indicates that total revenues in the PNS area as a whole for palm oil were about half as large as those from maize and that average revenues per farm family involved were nearly as large for palm oil as for maize. (Nearly 90% of the production was from the Kongolo-Mbulula area, but farmers in Nyunzu informed some team members that both palm products and rice could, and presumably would, be produced profitably in Nyunzu if their prices became more attractive relative to that of maize.)

Eyewitness accounts of those who know the area both now and as of 1977-78 suggest, nonetheless, that farmer incomes have improved. They note that the confidence and prosperity of the region have risen as a consequence of increased production as well as the large PNS payroll (currently about 800 persons) and the U.S. presence. The supplies of consumer goods in Kongolo and Nyunzu seem relatively ample, moreover, and villager complaints focused on rising prices, not availability of supplies.

The subordinate half of the first purpose and the first end-of-project indicator are points which are much easier to address.* Maize output in 1981 was already an estimated 66,000 metric tons, or 35% more than the 1983 target of 49,000 tons. Maize marketed in 1981, an estimated 32,000 metric tons, was already nearly 30% more than the first end-of-project indicator for 1983.

What is not clear from these production/marketing statistics is the extent of PNS responsibility for the progress. One non-PNS factor in

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*Data on marketing of crops other than maize, as previously noted, are not available; and answers on maize marketing from 1983 to 1986 are obviously premature.

particular -- prices paid to farmers for their maize -- deserves mention here. Some farmers noted that rising prices paid them for maize, even though offset by the rate of inflation, were a positive incentive to them to increase the area planted to maize -- the source of most of the production increase. However, others pointed to the need to produce more just to keep up with rising prices of consumer goods (not to improve their living conditions). And some others (in Nyunzu) pointed to the availability of pygmy labor as an incentive to increase areas planted.

Repeated surveys of farmers' attitudes would clearly have been helpful in this respect, as would even systematic recording of PNS discussions with farmers. They could also be even more helpful in the future if producer prices for maize lag behind those for other crops, as may now be happening.

2.3. Costs of Achievements

Costs of achievements, another name for cost-benefits, can be approached in a number of ways.

A Measure of Costs. One could calculate dollar and local-currency expenditures for PNS for fiscal years 1977-81. These amounted to about $5.3 million plus Ƶ19.9 million (see Table 1), or the equivalent of about $10 million, depending on the exchange rate used and without taking account of inflationary factors. One could even add to this an estimate of interest or opportunity costs.

In view of the difficulties and costs of starting PNS, as well as the expected problems in any development project, comparing this (more-or-less) maximum cost figure with accomplishments does not seem useful.

It may be more useful instead to calculate expenditures for fiscal years 1979-81, on the premise that start-up costs (in FYs 1977 and 1978) should be charged to general costs of national or regional development. These 1979-81 costs totaled about $3.9 million plus Ƶ18.5 million. Or

*Data on marketing of crops other than maize, as previously noted, are not available; and answers on maize marketing from 1983 to 1986 are obviously mature.

TABLE 1

EXPENDITURES ON PROJECT NORTH SHABA

(in thousand)

Fiscal Year	$(US)	CP(U.S.)	CP(US-GOZ)	B.I.(GOZ)	B.O.(GOZ)	TOTAL ZAIRES
1977-78	1,350	--	353	1,000	--	1,353
1979	1,362	360	540	1,930	--	2,830
1980	1,412	1139	6,413	--	787	8,339
1981	1,168	--	2,000	4,700	630	7,330
1982*	1,500	n.a.	12,600	4,800	891	18,300
1979-81	3,942	1499	8,953	6,630	1,417	18,499
1977-81	5,292	1499	9,306	7,630	1,417	19,852
1977-82**	6,800	n.a.	21,900	12,400	2,300	36,600

*projected
**FY 1977 through FY 1982 (projected)

Data on U.S. dollar expenditures (in thousands) were furnished by the USAID Controller's office. These data were not available at the project site, according to PMU. For FY 1982, actual expenditures through 3/31/82 were $927,000 (plus Z14,000 in U.S.-controlled counterpart funds).

Data on U.S.-controlled counterpart fund expenditures (in thousand zaires) from PL-480 and other program-type assistance, were also provided by the USAID Controller's office.

Data on counterpart controlled by the U.S. and GOZ jointly as well as GOZ investment (B.I.) and ordinary (B.O.) expenditures (in thousand zaires) were provided by David Soroko, USAID/ARD -- except for FY 1982 (projected), which are from USAID/PRM.

The dollar expenditure figure shown in this table for 1977-81 is only about half the $10.5 million in projected dollar expenditures provided by PMU for the 1977-81 period, in lieu of actual expenditures, which were said to be unavailable. (The amended PP projects $10.1 million for this period.) Actual expenditures in zaires provided by PMU for the same period were Z16.9 million, compared with the Z19.6 million shown in this table.

could then reduce local-currency expenditures by (say) 25%, so as to exclude costs with only limited direct benefits to PNS as well as GOZ expenditures that might have been made in any event. The Ƶ13.9 million (75% of Ƶ18.5 million), if converted to dollar equivalents using an average free-market rate of 8 to 1, would amount to about $1.7 million -- or just half the $3.4 million obtained if a crude average of the official rates had been used.* Total dollar-equivalent expenditures for the 1979-81 period, as calculated for this special purpose only, were thus about $5.7 million.

When the Team was unable to obtain actual dollar expenditure figures from PNS for the 1979-81 period (PMU made available, instead, projected dollar expenditures), the Team estimated total actual expenditures for this period, in dollar equivalents, on the basis of cost information available at the site. As noted in Table 2, these totaled (in dollar equivalents) about $8 million.**

More sophisticated estimates might attempt to measure projected annual costs as of (say) 1982 or 1983, including both current expenditures and some annualized estimate of future capital costs. These, however, would require more information and time than are currently available; and they would also add the difficulty of estimating future accomplishments.

The smallest of the above three expenditure estimates -- $5.7 million in dollar equivalents -- is chosen for use here, so as to minimize the cost of the benefits which could be attributed to PNS.

A Measure of Benefits. The choice of a measure for PNS achievements is no easier and no more satisfactory. Two obvious measures,

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*The estimated rate, based on incomplete data from a World Bank source, is admittedly crude; but it is believed to be sufficiently accurate for current purposes. The free-market rate averaged about double the official rate, according to the same data.

**The difference between this and the smaller figure estimated in the preceding paragraph is accounted for by the presumed use of official exchange rates for the larger figure (which accounts for an estimated $1.7 million) and the inclusion of all local currency costs (which accounts for an additional 0.6 million of the difference).

Table 2

COST ESTIMATES FOR PNS ACTIVITIES 1979-81

(Dollar Equivalents, in thousands)

Rehabilitation of roads and bridges, estimated at $7,000 per km for the 520 km of roads completed	$3,640
Spare parts and reserve for equipment of the infrastructure subsystem, estimated at $450,000 annually	$1,350
Other costs of PNS, estimated at $1 million annually	$3,000
Estimated total costs, 1979-81	$7,990

The above estimates, by Team members, are based on cost information available at the project site. Although crude, they are consistent with the data on expenditures obtained later in Kinshasa from the USAID Controller (see Table 1).

increased output and marketing of maize from 1978 to 1981, are not satisfactory, for three reasons: (1) The extent of actual increases in maize production and marketing is open to serious question; (2) The extent of PNS responsibility for whatever increases did take place is not determinable; (3) The benefits other than maize production and marketing increases which may be attributable to PNS efforts (e.g., auxiliary services and production may also have increased) are also not determinable.

Regarding the actual extent of increases for maize, data on both production and marketing are shown in Table 3. The increase in production during the same 1978 to 1981 period chosen for calculating costs is 39,000 tons if based on the 27,000-ton-output figure for 1978 taken from the amended Project Paper. It is 25,000 tons if based on the DOA production figure for 1978. It is 32,000 tons if an average of 1977-79 production is assumed to be more representative of the base year. Or it could be as small as 15,000 tons for the three-year period, if one were to assume that all the 10,000 ton error postulated as possible by SCAD had served to increase the 1981 figure (i.e., 66,000 less 10,000 = 56,000 tons for 1981) and if the largest 1978 figure (of 41,000 tons) were chosen as the base. Use of opposite assumptions could, of course, lead to a very large increase,of 49,000 tons (76,000 less 27,000).

There is no objective basis for choosing one production increase over another, but the median of the first three estimates noted, rounded to 30,000 tons, seems at least as good as any other.*

Similarly, the marketing increases could be 21,000 tons (32,383 less 11,635 tons, rounded); or 22,000 tons if an average of 1977-79 marketing (9,964 tons) is used as the base; or only 3,000 tons if the 1976 marketing figure is chosen as the base.

*This evaluator became aware of the statistical inconsistencies only after assembling data in Kinshasa, at which time it was too late to do more than ask the USAID Mission to obtain the statistics shown in Table 3.

TABLE 3

MAIZE PRODUCTION and MARKETING
Project North-Shaba Region

(Thousand Metric Tons)

Year	Production	Marketing
1970	13,637	4,526
1971	12,657	2,916
1972	21,385	16,473
1973	19,684	13,343
1974	24,715	19,251
1975	24,291	18,927
1976	34,056	29,218
1977	29,351	5,904
1978	40,921(27,000)	11,635
1979	31,530	12,353
1980	35,309	18,199
1981	65,965	32,383
1982	65,000	NA

1. Data cover the zones of Kongolo (including Mbulula) and Nyunzu.

2. Production data for 1970-78 were provided by USAID/ARD, from GOZ Department of Agriculture (DOA) sources. For 1978, an alternative figure of 27,000 tons, shown in parentheses, is given in the amended project paper; the recent DAI report notes that a 1978 figure is not available. The reliability and accuracy particularly of the earlier data are frequently questioned.

3. Production data for the years 1979-81 (crop-years 1978/79, 1979/80 and 1980/81) are from the PNS statistical unit (SCAD). The 1981 estimate, though given to the nearest 500 tons, is said by SCAD to be accurate within a range of plus or minus 10,000 tons.

4. The production estimate shown for 1982 is a simple average of the DOA figure (55,234) and the preliminary estimate provided by SCAD in late April (75,500).

5. Marketing data, from the same sources as the production data, are believed by all concerned to be more accurate. The PNS statistical unit believes the data for later years are more reliable than for earlier years. No estimate is available for 1982, since the marketing season begins essentially in April.

If the 29,000-ton marketing figure for 1976 is reasonably accurate,* it should be stressed, the PNS accomplishment would have consisted solely of restoring the situation by 1981 to what it had been five years earlier (before the Shaba wars) -- a much less difficult task than building from a "normally low" base. If the figure is substantially overstated, the PNS accomplishment would be correspondingly more impressive.

Again, given the Team's time limitations and the very limited PNS (or DAI) attention to this question, there is no objective basis for choice. As with the production increase, therefore, an arithmetic average (rather than the median) of the three increases in maize marketing noted above seems at least as good as any other -- an increase of about 15,000 tons.

Regarding the second major question, the extent of PNS responsibility for the increase, the information available does not allow objective answers. No one, not even the expatriate project contractor, claims that PNS is responsible for whatever increase has taken place. Moreover, if the 1976 marketing figure is accurate, and if the sudden drop in 1977 reflects mainly some transient event (e.g., the Shaba war), then a recovery in subsequent years could be due almost entirely to non-PNS factors, rather than to improved roads and other PNS services.

On the other hand, the team had concluded (before these questions arose) that PNS was responsible for much of the increased output and marketing, partly because (to quote the 1982 DAI report) the PNS addressed "critical bottlenecks" such as road rehabilitation and maintenance.

For purposes of cost-benefit calculations, we can do no better at this time than assume that PNS is responsible for (say) two-thirds of the increases already postulated for production (30,000 tons) and marketing (15,000) -- or 20,000 and 10,000 tons respectively.

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*One of the large buyers of maize in Nyunzu specifically referred to 1976 as having been a good year for maize availability, which lends some credence to the high marketing figure. Another buyer there mentioned an event in 1976 or 1977 which adversely affected maize marketing and led to spoilage in the fields. This remark is consistent with both the 1976 peak and the 1977 trough shown in Table 3. But at best, neither is more than suggestive of a possible 1976 peak. Unfortunately, my notes give no details, and the data themselves were not available at Kongolo to stimulate and facilitate further exploration.

Finally, regarding other benefits attributable to PNS, it does seem reasonable to assume that some benefits from the project may have spilled over into services as well as other production. Given the current data, however, this possible benefit cannot be quantified. In any event, the above figures seem to allow PNS a reasonable measure of credit for accomplishments in this area as well.

Summing up, for illustrative order-of-magnitude purposes only, increases in maize output and marketing are selected as measures of the benefits involved. They are hypothesized as having been 20,000 and 10,000 metric tons respectively.*

Cost-Benefits. Thus, the cost of additional maize produced in 1981, can be calculated at something like $300 per metric ton ($5.7 million divided by 20,000 tons). And the cost of additional maize marketed can be calculated at about $550 per ton ($5.7 million divided by 10,000).

This evaluator believes that the cost figure used is more than fair to PNS and the benefits attributable to PNS are probably overstated. Thus, the above estimates of costs are, in his opinion, minimum rather than most-likely costs per ton of additional maize produced and marketed.

These PNS costs can be compared with the estimated cost of imported maize at Lubumbashi in 1981 -- about $250 per ton, according to the recent DAI report. Or it can be compared with the estimated cost of North Shaba maize delivered at Lubumbashi -- about Z1,300 per ton in 1981 after adjustment for impurities, or about $230 per ton at the official exchange rate, or something like $125 per ton at the unofficial exchange rate at that time.

If the measure of cost-benefits were expressed as costs per farm household using one or more of the recommended practices (probably mainly the improved Kasai I seed), the figure as of 1981 would be about $950 ($5.7 million divided by 6,000). If the calculation were made for the PNS-estimated 1,750 households using the full package of Kasai I seeds and recommended practices, the cost would be about $3,000 per household

*Note that while it would be conceptually desirable to add to the 1978-81 increases the increases (similarly calculated) for the one-year period 1978-79 and the two-year period 1978-80, these "increases" turned out to be negative, since it was not until 1981 that large increases took place. Thus, the addition of net benefits for these two periods would have depressed the benefits hypothesized as being attributable to PNS. (The "increases" for production were a negative 2,000 and a positive 1,000 tons respectively; for marketing they were a negative 5,000 and a positive 1,000 tons respectively.)

as of 1981. (These calculations should be interpreted with caution: The cost basis is not simply that of seed distribution or of the extension service per se but rather that of the total PNS system during 1979-81.)

2.4. PNS Purposes Not Achievable by 1983

The predominant impression gained from 3 1/2 weeks spent at the PNS site is that PNS management, for the project as a whole as well as for individual sub-systems, is not taking seriously the two major purposes of PNS as set forth in the amended PP.

Net Incomes of Small Farmers. The first purpose, raising the net income of small farmers by 75% between 1978 and 1983 -- presumably real income, not nominal income in which no account is taken of inflation -- has received so little attention that few, if any, at PNS seemed even to know it was a major purpose.

As already noted, virtually no data on either gross or net farmer incomes, nor on the production and marketing of other crops which might enable such estimates to be made, have been collected. This alone suggests that this major PNS purpose has not been taken seriously, a situation which is particularly strange in view of the widespread intercropping of maize with other agricultural products and the importance of other cash crops particularly in the Kongolo area.

Equally (perhaps even more) important, PNS has not questioned a basic assumption inherent in that purpose, namely that increased maize production is the best way to raise farmer incomes. Without data on relative price trends and productivity, one cannot test the validity of that assumption even for the past, let alone for the future.

This failure to take adequate account of other crops is not surprising, in view of the emphasis on maize production in both the original and amended PPs. But it may also be due to the view of current top PNS management and some USAID officers that farmers are unlikely to switch from maize to other crops even if there should be sharp changes in relative prices.* And it may also be due to the apparent absence of concern by top PNS officials about the environmental costs of a focus on maize, including deforestation and land erosion: "If they didn't want to farm that way (i.e., slash and burn), they wouldn't do it."**

The recent DAI evaluation noted the problem of crop substitutability and the importance of price incentives, and the SCAD unit at PNS has recently responded by providing (as previously noted) some crude estimates on other agricultural production and prices. But a determined effort, backed by a strong TDY team, would be necessary for meaningful work on both points.

In any event, it is not possible to demonstrate that net incomes of small farmers have risen at all in real terms since 1978.

Replicability/Sustainability. The second purpose, replicability (and, at least by implication, sustainability) of any rural development process developed by the project, also seems to be receiving much less than adequate attention at the project site -- though DAI recognized in its recent evaluation that sustainability of PNS accomplishments is a (if not the) key issue.

At the project site, few if any of the top PNS staff seemed to be seriously considering how PNS could be made self-sustaining, who could take over some of the functions, and which parts of PNS might survive the withdrawal of foreign (i.e., U.S. Government) support in the absence of any special efforts by the GOZ or other institutions. They simply assumed -- and said -- that the USG had to continue to support PNS or it would fall apart.

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*The Governor of Shaba, incidentally, indicated in a conversation with the PNS Director in Lubumbashi in April 1982 (reported by USAID's monitor for PNS) an awareness of the influence of changes in relative prices. He said there that he had increased producer prices for peanuts (a month or so earlier), so as to discourage the PNS focus on maize. He has obviously not emphasized this point, however, since PNS management would otherwise have indicated more awareness of the problem in both word and deed.

**USAID, incidentally, was obviously concerned about possible land erosion, since it requested and financed an "Earth Resources Remote Sensing Team" from the GOZ Presidency, to survey the PNS area and other parts of the Tanganika Sub-Region.

It would thus not be surprising if PNS had made little progress toward sustainability even if the political-economic climate were favorable -- which, as discussed earlier, it is not.

The issues of sustainability and replicability are dealt with later in this report as well as in other reports. At this point, we will discuss (in turn) only two related aspects which are important not only to sustainability/replicability but also to farmer incomes. Those issues are pricing and purchase/sales policies in Shaba Province for agricultural products.

Pricing Policies. The Governor of Shaba sets prices which are sometimes interpreted as (1) the only authorized price, deviation from which may be punishable, (2) a floor price, which is meaningless since Shaba Province has no funds to purchase crops to prevent nominal price declines, or (3) a maximum price for purchases from farmers, an interpretation which has been used by buyers in the past to hold down farmgate prices.

The ambiguities seem to be deliberate, and one cannot be sure what is appearance and what is reality. The recent facts seem to be as follows:

(1) The Governor of Shaba announced in Kolwezi in March 1982, that farmgate prices for maize would be Z100 per 100 kg, and railhead prices would be Z150. These prices were interpreted as minimum prices by some USAID and PNS participants at the pricing conference where they were announced. Some merchants and farmers in the Nyunzu area, however, said the prices were "official," allowing no deviation, while others said they were maximum prices.

(2) Kibwe-Sakina, a large merchant buyer from Kongolo who had opened a comptoir (buying counter) in Kongolo in 1981, decided to extend his operations to Nyunzu this year, intending to pay farmers and small merchants the railhead price of Z150. The GOZ representative in Nyunzu, however, refused to allow the opening of this comptoir. The PNS Director

and the USAID Assistant Project Officer attended a meeting in Nyunzu on April 17 to help establish the principle of such counters. The GOZ representative then asked the Governor of Shaba to resolve the matter.

(3) The PNS Director and USAID Representative flew to Lubumbashi on April 23 to see the Governor, who had earlier refused to allow the comptoir to open. In return for several USAID concessions on a related matter of truck rentals, the Governor reportedly agreed (on April 29) to allow the counter to open, but he said he would close it down if USAID did not carry out the concessions made.

(4) The Governor did not deviate from the announced farm-gate price of Z100 per 100 kilos of maize. How rigorously this will be enforced as a ceiling price, however, remains unclear.

(5) Kibwe-Sakina began its buying operation in Kongolo on April 15, presumably paying the railhead price of Z150 per 100 kilos, but the Governor has refused to allow the Nyunzu comptoir to open until the USAID trucks arrive in the PNS area (probably about June 1).

(6) The Minister of Agriculture, Rural Development, and Environment told the Evaluation Team on May 7 that his ministry has decided to liberalize both price and purchase/sales policies but that the Governor of Shaba (and perhaps other Governors) oppose this policy because of their concern that prices to consumers may rise too high too fast, thus arousing urban unrest. The Minister indicated that this policy would be discussed soon by the GOZ Executive Council, but he did not make clear (the meeting was brief) whether any decision on price liberalization would be binding on Governors or (more likely) simply permissive.* GECAMINES, Zaire's copper-cobalt mining firm, was said to favor price liberalization, but it was not clear whether they would continue to subsidize flour prices for their workers or raise wage levels or do neither.

The point of this long recitation of facts and allegations is to demonstrate that pricing policies not only do not provide incentives to farmers to increase their planting and production of maize -- the principal operational goal of PNS -- but in fact they act as a deterrent in at least two respects:

*In a later meeting with the USAID Director (on May 27), the Minister said that a GOZ order will be issued making price liberalization a national policy, one that the Governor must follow.

(1) Farmers do not know at planting time what producer prices will be at harvest time the following year.

(2) Even after producer prices are announced, neither farmers nor merchants are clear as to the meaning of the prices.

Given the high rates of inflation in recent years, it would of course be difficult to predict with any assurance six months ahead of time what price levels would provide incentives. All the more reason, therefore, for province governors to let market forces take over, despite the hardships which would be borne by urban consumers during the transition period. These hardships -- not to be taken at all lightly -- could be ameliorated by the GOZ, however, in the interest of stimulating increases in agricultural production. In time, the increased production would help restrain further price increases for consumers.

The DAI report notes that producer prices for maize have not increased at the same pace as inflation generally. If nonetheless, according to the DAI report, nominal (not real) price rises have acted as production incentives, it is clear that the freeing of producer prices for agricultural products, would provide still stronger incentives for maize planting this fall. The reported curtailing of maize imports into Lubumbashi by some 25%, or about 30,000 tons below the 1981 level of about 115,000 tons, will put strong upward pressure on producer prices for maize, probably leading to substantial real price increases if not checked. Even some increase in real prices, however, would probably lead to substantial increases in maize planting in 1982 and production in 1983, despite labor-supply constraints (land constraints are currently less serious). Additional pygmy labor seems to be available in the Nyunzu area, and some increases at the expense of leisure seem still possible in all areas. In the long run, of course, labor-saving and yield-raising measures would be needed.

Purchase and Sales Policies Other Than Prices. Another Shaba policy serves to hold down prices paid to PNS-area maize producers, namely the restrictions on transportation of maize across province lines.

The amended PP stipulates that USAID support of PNS is contingent on a commitment by the Ministry of Agriculture "that farmers in the project area may sell their maize and other agricultural products to any and all recognized buyers, either as individuals or in groups without having to seek special licenses or permission."

Neither USAID or PNS seems to have a signed copy of such a commitment by the Ministry of Agriculture. However, at a meeting on May 7, the Minister stated that he was in favor of such trade, provided there is a reasonable balance between supply and demand. He added that not only is there no national law which prohibits either the sale or transportation of maize across province lines, but there is a national law which specifically allows it. Enforcement is another story, he added, in view of the powers of province governors. However, he said, the Governor of Shaba Province has agreed with two other governors to allow some maize to move across province borders.

The Governor of Shaba, with whom the Team has not spoken, could argue that he is not violating any GOZ commitment regarding sales across province lines -- to Kasai Oriental in particular. Legally, he is probably right. First, he could state simply that buyers from Kasai are <u>not</u> "recognized" by him. Second, he does not forbid the sale of maize to buyers from Kasai; he simply forbids the transportation. The maize, of course, still gets to Kasai Oriental, but (according to more than one person in the PNS area) only after payment is made for false documents, etc.

Removing these restrictions would, again, entail certain costs to urban consumers in Shaba Province in the short run. The price of maize is substantially higher in Kasai Oriental than in Shaba, so that maize prices in Shaba would undoubtedly rise. However, the greater stimulus to maize production plus the savings from the current costs of evading the legal restrictions might well lead to an equalizing or even downward pressures on maize prices within a year or two.

If the governors remove some restrictions this year and simultaneously announce an end to all such restrictions effective (say) a year or two from now, Shaba Province might reap the best combination of benefits.

3. SUSTAINABILITY*

3.1. PNS or a Replacement Institution

The Evaluation Team concluded, unanimously as noted in the covering report, that PNS could not survive a withdrawal of U.S. Government support. Supporting analysis is contained in the individual reports on PNS sub-systems.

Financing. PNS needs for both foreign exchange and zaires are substantial. The dollar expenditures shown in Table 1 are used for imported equipment, spare parts, and other supplies as well as for expatriate salaries. Even part of the foreign exchange needed could obviously not be assured, in view of the national economic situation already described. However, even if donor funding could be found for the foreign-exchange needs of PNS, past GOZ performance suggests that the need for zaires would have to be met in large part from counterpart funds.

GOZ budgetary funding of local-currency costs of PNS has not been sufficient in any prior year, so that (in the words of the recent DAI evaluation) "without (PL-480 Title I generated) counterpart funding, PNS would have ground to a halt a long time ago." The GOZ frequently points to PNS as its model project, and it has provided proportionately

*This and the following sections were written after the drafting of the covering report. They are briefer than originally intended, in view of the unanimity of findings and conclusions by team members.

more funds to PNS than to other rural development projects. Nonetheless, owing to severe GOZ budgetary constraints (rather than any lessening of GOZ interest), PNS budget problems would be even worse in 1982 if not for counterpart funding. In response to the PNS request for Ƶ18.3 million for 1982, the GOZ authorized Ƶ4.8 million from its investment budget and Ƶ891,000 from its ordinary budget. To date, the GOZ has allocated Ƶ2,072,600 and Ƶ891,000 respectively, the latter to be disbursed in monthly installments. (The shortfall of Ƶ12.6 million will of necessity be met from counterpart funds.)

Conceptually, special sources of financing are comparatively easy to locate. For example, the GOZ or Shaba Province could tax maize imports into Lubumbashi or fuel brought into the area, or it could assess a tax or user charge on all maize sold to purchasing counters or on all maize purchased by millers. In addition a consortium of private millers, brewers, parastatals such as Estagrico, and other businesses which currently profit from the PNS presence,could contribute to PNS financing.

In practice, however, such funding seems highly unlikely under current conditions in Zaire. Taxes or user-charges, according to all observers, would not reach PNS in amounts sufficient to finance PNS operations at even a minimum level.

One businessman suggested private collection of such taxes. However, he had no answers as to why the GOZ would be willing to give control over even special revenues to the private sector, nor could he suggest safeguards to ensure their use for PNS purposes. Moreover, he backed quickly away from indicating how much his firm could/would contribute, noting that many firms in Zaire (though not his own) are near bankruptcy. He also indicated the need for a private foreign firm to join in the financing consortium, so as to assure adequate foreign exchange for essential imports, though he could provide no reason for a foreign firm being willing to join such a consortium.

Management. Locating an institution in Zaire capable of taking over management of the project would be a second major problem.

Estagrico, the cotton parastatal, was initially considered a prime candidate, since it performs functions similar to those of PNS, and it operates in Shaba Province as well as elsewhere in Zaire. Estagrico, however, seems financially shaky, in part because of a flood of cheap-clothing imports and the resulting slump in demand for cotton by textile manufacturers in Zaire. Moreover, Estagrico's road-maintenance operations for PNS, as noted in the report on transportation, do not suggest an ability to handle another major operation.

Management by a consortium of private firms would be difficult under almost any circumstances in Zaire. Working out practical arrangements in the foreseeable future under current circumstances is simply not feasible -- for reasons either discussed or obvious from this and other evaluation reports.

Management in the near future by the Department of Agriculture (DOA) may never have been a realistic option. But it seems even less so now, since PNS management has not tried to build up DOA management capabilities in the PNS area. Rather, as a matter of deliberate policy, it seems to have separated itself from DOA to the maximum extent possible. For example, there are virtually no contacts between PNS and DOA extension agents despite their responsibilities for serving the same clientele. Whether or not this attempt to establish PNS independence was advisable five years ago is now irrelevent. It simply seems too late in the project life for PNS to think now of DOA as a management agent for PNS functions in the immediate future.

Management by a new regional development agency might have been a workable option if a start could have been made several years ago toward establishing it and integrating it with other GOZ organizations. The problems involved are formidable, and success would have been highly unlikely under circumstances prevailing in Zaire. At this point, however, this is also not a realistic option.

3.2. Sustainability of PNS Functions

Whether some PNS functions could survive after the withdrawal of U.S. Government support is a question discussed in the individual reports.

As noted in both the infrastructure and covering report, a deterioration of roads and bridges can be expected fairly quickly. Some residual benefits, however, could well remain in some areas for considerable time, the extent of which would depend on GOZ and farmer efforts.

The demise of manufacturing activities of the intermediate technology sub-system could prove to be a "blessing in disguise," since its presence may well have inhibited somewhat the establishment of a strong distribution system for better quality tools manufactured in (e.g.) Kinshasa or, in time, even in Kongolo. This might be even more true if farmgate and railhead prices for maize are allowed to rise further in real terms, so that farmers can afford more high-quality tools.

If roads and bridges can be maintained in something approaching a usable condition, and if the fuel situation does not deteriorate further, the larger merchants are likely to survive. Farmer groups, however, are unlikely to play a substantial role in marketing, as PNS had hoped.

Regarding research and extension, the sustainability of research is not in question, since PNS-sponsored research is virtually non-existent. The PNS extension service could be combined with that of the DOA in the PNS area, at least conceptually. Whether the extension service could survive and be strong in practice, however, is another matter.

3.3. Sustainability of Accomplishments

Whether and to what extent PNS accomplishments can be sustained is dependent, most importantly, on over-all economic performance in Zaire in the coming months and years. The prospects, as already noted, are not bright.

The path which the GOZ needs to follow is reasonably clear in broad outlines. At the national level, the most important actions are devaluation; reduction of skimming and unproductive government spending in favor of expenditures to ameliorate transportation and other constraints; and free-market pricing for producers, so as to increase their incentives. Similarly, Shaba Province needs to ameliorate, and remove as quickly as feasible, its pricing and marketing restrictions.*

Under these circumstances, the survival of PNS or a replacement institution would be relatively unimportant. Critical functions would survive in one form or another, and major accomplishments would be almost certain to continue and to expand.

Under current circumstances, however, sustainability of PNS accomplishments is uncertain.

4. REPLICABILITY

PNS has not, as was noted earlier, fulfilled its second purpose: "to develop a rural development process in the form of a model that is replicable in other parts of Zaire."

That PNS has produced some benefits is not in question. That the process, with all the faults noted in the individual reports, should not be replicated is also not in question.

To be replicable, the process should:

- be developed in an economic-social environment that is reasonably conducive to rural development. PNS has not had that advantage. The process shows it.

- be managed by a top-notch team of both Zairians and expatriates. Only the second rung of Zairians seems to meet this qualification. The process shows it.

*The pricing restrictions, as is footnoted on p. 22, may soon be eliminated.

- develop an institution which is efficient, cost-effective, and appropriate to the situation, and which can either be integrated into other Zairian institutions or operate on its own, though with close links to other Zairian institutions. The process is at least as deficient in this respect as in others.

- be compatible with existing financial constraints. Clearly, the costs are not within the financial means of any conceivable combination of public or private entities in Zaire. Nor is it currently feasible for the beneficiaries to pay for the process.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusions

In brief, PNS has brought some benefits to North Shaba, though it is not possible to say how large the increases in production and marketing have been, nor the extent of the PNS contribution. The increased supplies of maize (and perhaps other crops) to South Shaba also help offset maize-import restrictions resulting from foreign-exchange shortages.

Regarding the two major purposes of PNS: Net income of participating farmers does not appear to have increased sufficiently so as to be 75% above the 1978 level by 1983. Nor, in the judgment of Evaluation Team members, has PNS developed a "rural development process in the form of a model that is(sustainable and) replicable in other parts of Zaire."

Finally, the costs of PNS accomplishments have been substantial. Though it is not possible to come up with a single defensible estimate of either costs or benefits, the estimates chosen for illustrative order-of-magnitude purposes are a cost of nearly $300 for each additional ton of maize produced, and over $550 for each additional ton marketed. This evaluator believes these figures give PNS the benefit of every doubt. In his opinion, the "true" figures of costs per ton of additional maize produced and marketed, if they could be determined, would probably be higher.

5.2. Recommendations

The Team's recommendations regarding PNS are stated in the covering report; and more detailed recommendations on PNS sub-systems are in the individual reports. They need not be repeated here.

This section will, therefore, simply summarize the economic recommendations from previous sections of this report:

- At the national level, the most important actions needed are devaluation; reduction of skimming and unproductive government spending, in favor of expenditures to ameliorate transportation and other constraints; and free-market pricing for producers, so as to increase their incentives.

- At the Shaba Province level, amelioration and (as quickly as feasible) removal of pricing and marketing restrictions are needed. In the transition period, it might of course be necessary to subsidize urban consumption. Given GOZ budgetary constraints, this would not be easy. But if all concerned regarded it as transitional, a special tax or user charge on (e.g.) maize imports or sales of domestic maize to millers might be feasible.

If the GOZ were to follow these recommendations, which are essentially the same as those of the international community, the progress of recent years in North Shaba would most likely continue and perhaps even accelerate. At the same time, the GOZ would create the necessary climate for modest, targeted technical assistance.

ANNEX I

Selected References and Contacts

A. Publications on the National Economy

1. World Bank, Zaire Sector Memorandum: Agriculture and Rural Development, May 26, 1981.

2. World Bank, Zaire Economic Memorandum: Recent Economic Developments and the Path to Recovery, May 20, 1981.

3. World Bank, Zaire Economic Memorandum: The Zairian Economy: Current Situation and Constraints, October 19, 1979.

4. IMF: Zaire - Recent Economic Developments, January 11, 1982.

B. Previous Evaluations

1. DAI, Five Years Later: Progress and Sustainability in Project North Shaba, March, 1982.

2. DAI, Internal Evaluation of North Shaba, Nomember, 1980.

3. Dimpex Associates, Evaluation of the North Shaba Integrated Rural Development Project, 1979.

C. AID Project Papers (PP)

1. Amended PP, August 25, 1980.

2. PP, August 31, 1976.

D. PNS, USAID and GOZ Documents

References to the most relevant documents are noted in the body of this report. DAI has a complete listing of all relevant reports, and many are noted in the above references.

E. CONTACTS

PNS staff at all levels, merchants and farmers in the Nyunzu, Mbulula, and Kongolo zones -- mostly with team members evaluating the DGF, C&C, IT, INFRA, and PMU sub-systems -- representatives of private and parastatal firms in Shaba Province, GOZ officials in Kinshasa, World Bank and IMF officials in Washington, and U.S. Government officials in Washington and Zaire.