

PDBB551D

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

1. TRANSACTION CODE

A = Add
 C = Change
 D = Delete

Amendment Number
1

DOCUMENT CODE

2. COUNTRY/ENTITY
ZATRE

3. PROJECT NUMBER

660-0101

4. BUREAU/OFFICE
AFR

5. PROJECT TITLE (maximum 40 characters)

School of Public Health

6. PROJECT ASSISTANCE COMPLETION DATE (PACD)

MM DD YY
04 30 94

7. ESTIMATED DATE OF OBLIGATION
(Under 'B.' below, enter 1, 2, 3, or 4)

A. Initial FY 84

B. Quarter 4

C. Final FY 87

8. COSTS (\$000 OR EQUIVALENT \$1 =)

A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total	2249		2249	8815		8815
(Grant)	(2249)	()	(2249)	(8815)	()	(8815)
(Loan)	()	()	()	()	()	()
Other U.S. 1.						
Other U.S. 2.						
Host Country		1263	1263			
Other Donor(s)					5997	5997
TOTALS	2249	1263	3512	8815	5997	14812

9. SCHEDULE OF AID FUNDING (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1) HE	580	500		6236				6236	
(2) PH	400	460		2079				2079	
(3) CS	390	340				500		500	
(4)									
TOTALS				8315		500		8815	

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)

660 530

11. SECONDARY PURPOSE CODE
660

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

A. Code BU THG BR R/H
B. Amount

13. PROJECT PURPOSE (maximum 480 characters)

4. SCHEDULED EVALUATIONS

Interim MM YY MM YY Final MM YY
04 31 94 04 30 94 08 31 94

15. SOURCE/ORIGIN OF GOODS AND SERVICES

000 941 Local Other (Specify)

5. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a 15 page PP Amendment)

To amend the authorized Life of Project Funding, from the current level of \$8,315,000 to \$8,815,000. This increase will be used to support growth monitoring and promotion research and interventions.

17. APPROVED BY

Signature: *Dennis Chandler*
Title: Dennis Chandler
USAID Director

Date Signed
MM DD YY

18. DATE DOCUMENT PREPARED IN AID/W, OR FOR AMENDMENTS, DATE OF DISBURSEMENT

MM DD YY

ANNEX 1A
Project Paper Supplement
School of Public Health Project

July 1987

Growth Monitoring and Promotion Component
School of Public Health Project (660-0101)

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I. INTRODUCTION

A. Background

"Good nutrition" has been recognized as a vital element of "good health" by health personnel for generations. The nutritional status of children in a community is seen as an important indicator of the overall health status in that community. In developing world settings, childhood morbidity and mortality are high and are linked to nutritional status in a synergistic cycle of disease and malnutrition. Growth monitoring and nutrition interventions designed to assure adequate nutrition in children five years of age and under are, therefore, key public health strategies.

Many developing countries, although constrained by scarce resources, have nevertheless attempted to reduce mortality and morbidity among groups at high nutritional risk. Their approach has been to institute primary health care (fundamental health care at the grass-roots level) often combined with low technology, proven high efficacy programs such as immunization and oral rehydration therapy.

A.I.D.'s child survival strategy follows closely UNICEF's strategy, which proposes a package of several low technology interventions to maximize improvements in a population's health status. These include growth monitoring, oral rehydration therapy, breastfeeding, immunizations, family planning and food supplements (GOBI-FF). The elements most implicated in improving nutritional status include breastfeeding, food supplements and growth monitoring.

Growth monitoring, in particular, is a special emphasis of the child survival strategies of both the Africa Bureau and USAID/Kinshasa. Growth monitoring and promotion (GM/P) is defined as the "regular measurement, recording and interpretation of a child's growth change" over time (Yee & Zerfas, Issues in Growth Monitoring and Promotion, May 11, 1987). The goal of GM/P is to closely monitor weight to detect growth faltering before the child becomes frankly malnourished and to counsel the mother and initiate appropriate interventions which encourage growth and/or promote recuperative or catch-up growth.

Much effort and many dollars have been spent in Zaire and elsewhere to increase the coverage and improve the effectiveness of GM/P activities in identifying and assisting children at risk. These inputs have included: improving the health infrastructure's ability to plan, promote, supervise and evaluate GM/P activities; providing equipment and supplies to carry out GM/P at both the national and local levels; and training health workers at national, regional and local levels.

U.S.A.I.D./Zaire is currently supporting four projects in which GM/P is a major component:

1. The Area Nutrition Improvement Project is implemented by Zaire's National Nutrition Planning Center, CEPLANUT. This project supports GM/P in functioning rural health zones located in the Bandundu region through the development of training materials for health personnel, analysis/reporting of growth monitoring data and the purchase of equipment for growth monitoring at the health center level. In this project, GM/P serves as an entry point to health services and a source of nutrition surveillance data.

2. The Basic Rural Health II Project, implemented by a Zairian private voluntary organization, Eglise du Christ au Zaire, actively promotes GM/P in more than 2000 health centers in 100 health zones across Zaire to reach a target population of more than 2,000,000 children five years of age and under. Project-sponsored activities include: purchase and distribution of hanging baby scales; distribution of Zaire's standard growth chart; production and distribution of health education materials; and training of health workers in GM/P procedures.

3. The AID-ORT Food for Peace Project, implemented by the American PVO, Organization for Rehabilitation through Training, supports GM/P in Kinshasa's peripheral health zones. GM/P is used as a screening tool for referral to the project's supplementary feeding component. Project staff are developing and field testing educational messages designed to promote GM/P. Staff are also developing and implementing training programs for volunteer health workers (Mamans Bongissa).

4. In June 1987 PRICOR II, a centrally-funded project, completed a systems analysis in four regions of Zaire which included extensive investigation of the growth monitoring components of primary health care. Data from this study are currently being analyzed and will be made available for further GM/P research and activities.

Despite this impressive portfolio of GM/P activities being implemented in Zaire and elsewhere, GM/P has not been viewed universally as an effective intervention that has a clear impact on childhood mortality. For a variety of reasons including inadequate inputs, inappropriate methodology and misunderstanding of applications and implementation, GM/P has never received the same wide acceptance as oral rehydration therapy and immunization programs, and is not always viewed as an integral component of primary health care strategies.

The efficacy of GM/P programs relative to other health and developmental interventions must be examined systematically. Questions to be examined include the following: is growth monitoring/promotion indeed an intervention that can contribute to significant improvement in child health and survival?; and, if so, what program design(s) can maximize the combination of feasibility, acceptability, efficacy and cost-effectiveness, all critical parameters for public health planners?

To address these questions, the GM/P component of the School of Public Health Project will initially examine and describe current growth monitoring strategies in Zaire. Staff will then focus on the more important research questions of whether growth monitoring indeed contributes to improvements in nutritional status in the infant and child population in Zaire and, if so, the steps required to implement and evaluate a feasible, effective and self-sustaining program in the Zairian context.

A research/intervention project on growth monitoring/promotion is particularly appropriate at this time given USAID/Kinshasa's ten years of work in the area of GM/P, the excellent research capacity of the University of Kinshasa's School of Public Health (SPH) and the SPH's interest in developing an operations research unit that will include child survival in Africa as a priority research area. The SPH views its mandate in the area of research as not only to conduct studies and to provide support to researchers on a

project-by project basis, but also to establish a research unit capable of sustaining itself financially in the longer term future, i.e., long after project assistance has ended. This is a standard approach in American universities (which depend heavily on research grants to support operations) and represents an appropriate and realistic goal.

Summary of Proposed Activities

The SPH will collaborate with organizations working in the area of GM/P in Zaire to implement project-sponsored activities. These organizations include CEPLANUT, ORT-Food for Peace and Sante pour Tous/Kinshasa. Sequential studies in the health care setting in Zaire will be used to address the questions posed above. The first phase of project implementation will be an operations research study to examine the organization, management and operation of current GM/P activities in urban and rural areas of Zaire. This study will include a systematic classification of a large number of health delivery areas according to a series of "independent variables" that may have an impact on the nutritional status of young children, for example, GM/P-related program components, other health interventions, socioeconomic status, feeding patterns, etc. This study will form the basis for finalizing details of the second phase, a combined intervention and evaluation study. During the second phase study, specific interventions designed to improve GM/P program services will be implemented. At the same time, both the impact of improved services and the contribution of selected GM/P strategies as a determinant of child nutritional status will be evaluated. Program success/failure, i.e., "impact" or "efficacy" will be based on indicators of nutritional status and growth in cohorts of children in the most vulnerable age groups, the second through fifth years of life, who will be followed prospectively for two years. Program costs will be examined in order to derive estimates of total cost and cost-effectiveness of the various approaches to GM/P. Key to this analysis will be an examination of the sustainability and replicability of various interventions. To assure "state of the art" research, the protocol will be reviewed and critiqued by experts in the field of GM/P.

II. OBJECTIVES

- A. To synthesize data related to nutritional status, process indicators, service utilization, and personnel performance that are currently available in Zaire.
- B. To systematically characterize current GM/P programs in Zaire, and to catalog health delivery areas/centers in terms of these attributes.
- C. To evaluate the degree to which selected GM/P strategies contribute to the nutritional status of young, at-risk children.
- D. To develop and implement key interventions designed to optimize the organization and effectiveness of GM/P activities. These interventions will be evaluated to determine the practical efficacy of GM/P in Zaire, i.e., the efficacy of GM/P under the best circumstances that could be realistically expected in the field.

III. METHODS

A. Phase I: Description and Classification of Existing GM/P Programs

As described above, the first phase will be a descriptive operations research study. This study will: (a) define the types of GM/P approaches currently employed, and the proportion and geographic distribution of each type; (b) analyze the components of each type of approach; (c) describe the conditions that must exist for GM/P to be optimally effective and factors favoring each one; (d) describe how some of the various systems identified in (a) measure up to the model described in (c); and (e) develop a catalog of several urban and rural health programs classified according to the parameters described in (a)-(d). Particular focus will be placed on programs in Kinshasa, especially those participating in the ORT Title II program, and in rural areas of Bandundu.

PRICOR II is currently undertaking a major study of a relatively small number of facilities in Zaire, including an extensive descriptive analysis of organizational and functional activities' one of which is growth monitoring. This study will use the information collected by PRICOR II as a starting point and build a GM/P profile for Zaire, with particular emphasis on USAID's priority regions.

Preliminary discussions have suggested that the following approaches to GM/P are currently employed in Zaire:

- "Centralized System" - growth monitoring and nutrition education are sponsored as part of preschool preventive programs at health centers. Malnourished children referred to a central nutritional rehabilitation facility for feeding and additional education.
- "Decentralized System" - growth monitoring, nutrition education, and nutritional rehabilitation are all sponsored as part of preschool preventive programs at the local health center;

- "Growth Monitoring Only System" - growth monitoring and nutrition education are sponsored as part of preschool preventive care programs at the health center, with no nutritional rehabilitation component;
- "Demedicalized System" - "Day-care centers" exist where all children are cared for and fed, and malnourished children sometimes receive additional food;
- "Non-Organized System" - Growth monitoring equipment is present and basic GM/P training of personnel takes place with no formal policy or regular supervision.

The operations research study will describe, characterize and catalogue the first four types of systems, plus any others that may currently exist, using the PRICOR "Thesaurus" classification system. Researchers will obtain information from various sources using a variety of methods, including the following:

- Analysis of the recently completed PRICOR II STUDY;
- Analysis of the current CEPLANUT study at the health center and community level in Kinshasa;
- An update of information available on GM/P in Zaire including summaries of results from all CEPLANUT studies, French-language reports of studies conducted in Zaire and currently available in Antwerp, and other available sources;
- Interviews with key personnel in the following organizations, all of which play a role in GM/P activities in Zaire: USAID Mission, CEPLANUT (National Nutrition Planning Center), Santé Pour Tous/Kinshasa (Belgian Development Assistance), SANRU (Basic Rural Health), FONAMES (responsible for coordinating donor activities in health), Catholics, ECZ, Kimbanguists, Salvation Army, UNICEF, and WHO; and
- On-site visits to centers of various types to observe and interview personnel.

Once the basic descriptions and characterizations have been completed, the "catalogued" list with details of various centers will be circulated to local health authorities in the organizations cited above for their comments.

B. Phase Two: Intervention and Evaluation Study

Based on the final report from the descriptive study, final details of phase two, the intervention and evaluation study, will be elaborated. This will be a prospective study of children residing in the areas served by a group of carefully selected centers where specific GMP-related interventions will be implemented. At the end of phase one, the most promising GM/P systems will be selected. Approximately two to three of the most promising systems will be studied at urban and rural sites, although the same systems will not necessarily be studied at each site. The second phase study will attempt to quantify the impact of the improved programs and at the same time describe with statistical validity the contribution of GM/P to the nutritional status of young Zairian children. Once a nearly final draft of the study protocol is completed, it will be subjected to critical review by experts in the field of

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GM/P worldwide. Using a modified Delphi technique, the reviewers will offer comments on the protocol in an iterative fashion until reasonable consensus is attained. The members proposed for this panel include the following:

- Dr. Banea Mayambu, CEPLANUT
- Dr. Musinde Sangwa, FONAMES
- Dr. Kahazi, SANRU
- Dr. Phaka Mambu, ISTM
- Dr. Okwo Bele, P.E.V.
- Dr. Albert Pradilla - Chief, Nutrition Section, WHO/Geneva,
- Dr. Ivan Beghin - King Leopold Institute of Tropical Medicine, Antwerp
- Dr. Rap Mattorel - Stanford University
- Dr. Jean-Pierre Habicht - Cornell University
- Dr. Nancy Binkin - CDC/Atlanta
- Dr. Nancy Mock - Tulane University
- Dr. Fred Zervas - LTS/International Nutrition Unit
- Dr. Marian Zeitlin - Tufts-University

This group represents not only all the major organizations supporting GM/P to improve nutritional status, but also the best minds currently working in international nutrition.

As much as possible, centers in the ORT Food for Peace Program in Kinshasa and centers in rural Bandundu region will be included in this study, as these represent USAID priority areas. Kinshasa- and Bandundu-based centers evaluated in the PRICOR II study will be included, if possible, as relevant baseline information is already available.

Centers will be selected randomly from a comprehensive list of eligible centers meeting certain criteria (a minimum prevalence of malnutrition, to maximize the chance of detecting program impact; specific organizational characteristics as defined by the first-phase study). The personnel responsible for health center-level GM/P intervention(s) will be drawn from existing personnel, as this is indeed to be a test of feasible and replicable interventions. Appropriate training and ongoing supervision of health center personnel will be provided. Once centers have been selected, the chosen GM/P interventions will be implemented and children in the each of the catchment areas will be evaluated in the following fashion:

1. Three cohorts of at least 100 children each (often more) in the catchment area corresponding to the selected center will be followed prospectively via home visits by trained field workers at six-month intervals. An interview will be conducted and height and weight obtained during the home visit.

The 3 cohorts will consist of children enrolled at ages 9, 21, and 33 months and will be followed for two years each as follows:

0m ---	15m ---	21m ---	27m ---	33m
21m ---	27m ---	33m ---	39m ---	45m
33m ---	39m ---	45m ---	51m ---	57m

Interviews will include questions regarding interim morbidity, GM/P service utilization and reasons for utilization or non-utilization, vaccination status, practices related to treatment of childhood diarrheal disease, characteristics of the household, family food distribution and dietary patterns in cohort children. Information on key economic indicators in the local setting will also be collected.

In the catchment area of a health center with approximately 10,000 residents, an estimated 400 will be in each one-year age group of children five years of age and under, with about 30 in each monthly

age group. For this size population, a period of three to four months will be required to enroll 100 children in each cohort. Total time required to select and follow a cohort of 100 children will therefore be approximately 28 months. However, several health center catchment areas have populations of well over 10,000. In these instances, more children will be studied (and results properly weighed in the analysis) and the period of enrollment shortened. The total time in larger communities may therefore be somewhat shorter, but in no instance less than 25 months. The actual sampling strategy will be developed once the centers have been selected, based on results from the phase one study.

- b. Centers will be visited at six-month intervals to observe GM/P services and to conduct exit interviews of mothers. The status of GM/P equipment and supplies will also be examined.

Nutritional status and growth patterns of children studied will represent the ultimate indicator of the impact (efficacy) of each GM/P system analyzed. Nutritional status and growth patterns will be expressed using the following indices: (a) mean Z-scores for weight/age, weight/height, and height/age; (b) percent of children well-nourished and in each stage of malnutrition, using various systems to define and classify malnutrition; (c) percent of children showing growth progress, stationary growth and growth faltering; and (d) a combination of (b) and (c). These will represent the quantitative portion of the analysis. A qualitative analysis of cohort children representing "successes" (adequate growth) and "failures" (poor nutritional status and/or growth faltering) in each area studied will also be conducted (UNICEF's "positive deviant" approach). This analysis will examine how successes, coming from the same milieu as failures "managed to do it". The "secrets" to these successes may be applicable on a larger scale, having already passed the test of feasibility in "successful" families

Cost will be expressed as a combination of financial and person-time inputs. This study will determine the total cost of GM/P activities for a given system per time period, e.g., per month or year, and the cost-effectiveness, i.e., the cost (in money and person-time) per case of malnutrition averted (defined in various ways) and/or the cost to achieve a certain level (or reduction) of malnutrition.

Process indicators will also be monitored during the periodic visits to centers. Process indicators are expected to change over time as project-sponsored interventions are implemented.

Data from cohort children and household interviews as well as from health centers will be entered on computers by field staff as they are collected. Among 300 children visited 5 times each over 28 months, there will be approximately 54 household visits per month in each health zone catchment area. For studies in larger communities, e.g., 30,000, there will be up to 175 visits per month. Data will be analyzed regularly in order to have results on an ongoing basis during the two years of this phase of the study.

The report of the second phase study will include quantification of the importance of various GM/P approaches as determinants of nutritional status in preschool children of various ages. Program impact will be measured in terms of feasibility, acceptability, efficacy and cost-effectiveness.

IV. TIMETABLE

Finalize initial protocol: July 1987

First-phase study: Data collection/analysis, November 1987-March 1988
Report preparation, April 1988

Second-phase study: Preparation of final protocol and Delphi exercise,
May-June 1988
Begin field work in Kinshasa, July 1988
Recruit/train Bandundu field workers, July 1988
Begin field work in Bandundu, August 1988
"Spot checks" in Kinshasa by trainer, August 1988

Finish field work: Kinshasa - September 1990

Bandundu - October 1990

Data entry/analysis, September 1988-November 1990

Report preparation, December 1990-January 1991

Total duration of project: 3.25 years

V. BUDGET

The budget is divided into three components. The first component involves the technical assistance contractor's activities and includes supplies, logistics support, consultant coordination and research assistance. The second component is for all activities centered at the SPH including the monitoring and supervising of field activities and study control. All aspects of study design, development, implementation, and analysis will be coordinated by the SPH. This budget will be treated as a subcontract with the SPH. The third budget component is for a sub-contract with CEPLANUT. CEPLANUT is charged with data collection at rural and urban sites, as well as the initial study of current approaches to growth monitoring and nutritional promotion in Zaire.

ILLUSTRATIVE BUDGET

Technical Assistance Contractor

<u>Item</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Total</u>
Admin. and research Coordinator (1/3 time)	10,000	10,600	11,200	31,800
Computer Prog. Assistance	5,000	2,000	5,000	12,000
Fringe for Home Staff	1,000	1,200	1,400	3,600
Supplies and Communication	4,500	5,000	5,000	14,500
Consultants (\$200/day)	7,000	3,000	3,000	13,000
Travel and transportation (@ \$4,100/RT)	16,400	4,100	4,100	24,600
Per diem (@\$171/day)	5,985	2,565	2,565	11,970
In-Country Travel Passport/SOS/Excess baggage	9,000	3,000	3,000	15,000
<u>Equipment</u>				
4Wd vehicles (2)	50,000			50,000
Microcomputers (2)	14,000	2,000	2,000	18,000
Microcomputers (7)	25,000	5,000	5,000	35,000
Survey equipment	15,000	10,000		25,000
Total on Campus	61,900* . 43 =	26,617		26,671
Total off Campus	64,570* . 25 =	16,142		<u>16,142</u>
			Subtotal	297,283

SPII Subcontract

Project Manager @\$400	4,800	4,800	4,800	14,400
Computer Data Entry	2,400	2,400	2,400	7,200
Secretary	1,500	1,500	1,500	4,500
2 chauffeurs	2,400	2,400	2,400	7,200
Vehicle Operation and Maintenance	6,021	12,000	12,000	30,021
Equipment and Supplies	5,000	5,000	5,000	15,000
Communication	2,000	2,000	2,000	6,000
Management Fee @20%				<u>16,876</u>
			Subtotal	101,197

CEPLANUT Subcontract

PI (20% @\$100)	1,200	1,200	1,200	3,600
2 Coordinators @\$150	3,600	3,600	3,600	10,800
5 Team Leaders @\$150	9,000	9,000	9,000	27,000
16 Nut. Field Workers @\$75	14,400	14,400	14,400	43,200
			Total	84,600

Management fee 20%				<u>16,920</u>
			Subtotal	101,520

GRAND TOTAL \$500,000

LOCAL CURRENCY BUDGET
(Dollar equivalents)

<u>Item</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Total</u>
In-country air transportation	7,000	7,500	8,000	22,500
In-country ground transportation	2,500	2,500	2,500	<u>7,500</u>
			Total	\$30,000

VI. JUSTIFICATION OF BUDGET

The SPH project has no line item for research in its current budget. All costs related to GM/P research activities must, therefore, be included in the GM/P component budget. Although the SPH is developing resources and management systems to serve the research community and sees research as an important potential tool for autofinancing, research costs cannot be subsidized from the current SPH project budget. Some minor changes may be made in the proposed subcontract budgets based on final design decisions.

Technical Assistance Contractor

Personnel- An administrative/research coordinator (one-third time) is included as U.S.-based support for the technical assistance contractor's staff. The research coordinator will assist with literature reviews, summarize consultant comments and coordinate both administratively and technically the ongoing research activity. An individual at the level of an MPH in nutritional epidemiology or the equivalent will be selected for this position. High-level system programmer time is budgeted in order to design the data base for this activity and to backstop data management.

Technical Assistance- Six U.S.-Kinshasa roundtrips are budgeted during the first year of activity for experts in the fields of nutritional epidemiology, field observational methods and questionnaire design, health economics and services utilization and biostatistics. One roundtrip for the U.S.-based coordinator is also budgeted. The consultant line item reflects the technical assistance needs associated with finalizing the study design during the first six to eight month period.

Equipment- The most expensive item of equipment will be the purchase and support of two four-wheel drive vehicles. The cost of maintenance and operation is budgeted at rates calculated from current use of similar vehicles. Two large microcomputers will be purchased for installation at the SPH and CEPLANUT. This will add to CEPLANUT's analytic capacity and provide backup processing power so that all data analysis can be undertaken in Zaire. Software, including Wordperfect, DBase 3 Plus, IQ data entry package, SPSS Plus, and Gauss statistical package will be purchased. Seven

smaller microcomputers will be purchased for data entry at the health zone level. These computers will be installed at the health zone as an incentive to participate in the study.

The supplies and communication line item includes funds for the purchase of all forms to be used. U.S.-based printing and document production is about one half the cost in Kinshasa, even with transportation included. Communications include telex and telephone and provides for occasional DHL service. This approach is consistent with current MOH strategy and will provide all of the data entry and field editing needs for the study. The supplies line item also includes funds to equip all data collection teams as well as overnight gear for the rural teams. This category is slightly overbudgeted since it is the most important item for actual data collection and, as such, must be in place for the timely undertaking of field activities.

Overhead- overhead represents the current U.S. Government rates in effect for the similar contracts.

Sub-Contract with SPH

To avoid higher U.S.-based contractor overhead charges, a subcontract will be issued with the SPH. Personnel costs under this component reflect costs for managing similar research activities currently underway. The vehicle operation and maintenance and local equipment and supplies line items reflect actual costs under current research projects. The management fee is a real and reasonable cost in the absence of a negotiated overhead, and has been used in prior sub-contracts with John Short and University Research Corporation.

Sub-Contract with CEPLANUT

The CEPLANUT subcontract represents the bulk of field personnel. CEPLANUT has a core of trained nutrition field workers who will be used for field activities. Specialty training for staff in the field operation of microcomputer equipment will be conducted. The details of the subcontract will be finalized as the final protocol is developed and will be submitted to USAID/Kinshasa for approval.