

Russ Anderson
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DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D.C. 20523

PROJECT PAPER

669-0139

Proposal and Recommendations
For the Review of the
Development Loan Committee

LIBERIA - UPPER BONG COUNTY INTEGRATED RURAL DEVELOPMENT

AID-DLC/P-2236

UNCLASSIFIED

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DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523

UNCLASSIFIED

AID-DLC/P-2236

August 18, 1977

MEMORANDUM FOR THE DEVELOPMENT LOAN COMMITTEE

SUBJECT: Liberia - Upper Bong County Integrated Rural Development

Attached for your review is the recommendation for authorization of a loan to the Government of Liberia (Borrower) of not to exceed Six Million Six Hundred Thousand United States Dollars (\$6,600,000) to assist in financing the United States dollar and local currency costs of goods and services for the Upper Bong County Rural Development project.

This loan is scheduled for consideration by the Development Loan Staff Committee on Thursday, August 25, 1977, at 2:30 p.m., in Room 3886 New State. If you are a voting member a poll sheet has been enclosed for your response.

Development Loan Committee
Office of Development Program Review
and Evaluation

Attachments:

Summary and Recommendation
Project Analysis
Annexes I - XVII

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AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT PAPER FACESHEET				1. TRANSACTION CODE <input type="checkbox"/> A ADD <input type="checkbox"/> C CHANGE <input type="checkbox"/> D DELETE			PP <hr/> 2. DOCUMENT CODE 3			
3. COUNTRY/ENTITY Liberia				4. DOCUMENT REVISION NUMBER <input type="checkbox"/>						
5. PROJECT NUMBER (7 digits) [669-0139]		6. BUREAU/OFFICE A. SYMBOL AFR		B. CODE [6]		7. PROJECT TITLE (Maximum 40 characters) [Upper Bong County Integrated Rural Dev.]				
8. ESTIMATED FY OF PROJECT COMPLETION FY [8] [1]				9. ESTIMATED DATE OF OBLIGATION A. INITIAL FY [7] [7] B. QUARTER [4] C. FINAL FY [7] [7] (Enter 1, 2, 3, or 4)						
10. ESTIMATED COSTS (\$000 OR EQUIVALENT \$) - ()										
A. FUNDING SOURCE		FIRST FY			LIFE OF PROJECT					
		B. P/A	C. L/C	D. TOTAL	E. FX	F. L/C	G. TOTAL			
AID APPROPRIATED TOTAL		1,200	100	1,300	4,420	2,180	6,600			
(GRANT)		()	()	()	()	()	()			
(LOAN)		(1,200)	(100)	(1,300)	(4,420)	(2,180)	(6,600)			
OTHER U.S.										
1.										
2.										
HOST COUNTRY				870	870	6,700	6,700			
OTHER DONOR(S)		890	300	1,190	5,340	1,660	7,000			
TOTALS		2,090	1,270	3,360	9,760	10,540	20,300			
11. PROPOSED BUDGET APPROPRIATED FUNDS (\$000)										
A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE		E. 1ST FY <u>77</u>		H. 2ND FY _____		K. 3RD FY _____		
		C. GRANT	D. LOAN	F. GRANT	G. LOAN	I. GRANT	J. LOAN	L. GRANT	M. LOAN	
(1)	FN			220	6,600					
(2)										
(3)										
(4)										
TOTALS				6,600						
A. APPROPRIATION		N. 4TH FY _____		O. 5TH FY _____		LIFE OF PROJECT		12. IN-DEPTH EVALUATION SCHEDULED MM YY [0] [1] [7] [9]		
		Q. GRANT	P. LOAN	R. GRANT	S. LOAN	T. GRANT	U. LOAN			
(1)	FN					6,600				
(2)										
(3)										
(4)										
TOTALS						6,000				
13. DATA CHANGE INDICATOR. WERE CHANGES MADE IN THE PID FACESHEET DATA, BLOCKS 12, 13, 14, OR 15 OR IN PRP FACESHEET DATA, BLOCK 12? IF YES, ATTACH CHANGED PID FACESHEET.										
14. ORIGINATING OFFICE CLEARANCE SIGNATURE <i>George O. [Signature]</i> TITLE Acting Director, USAID/Liberia DATE SIGNED MM DD YY [0] [7] [0] [7] [7] [7]				15. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION MM DD YY [0] [7] [1] [9] [7] [7]						

AGENCY FOR INTERNATIONAL DEVELOPMENT
PROJECT IDENTIFICATION DOCUMENT FACESHEET
TO BE COMPLETED BY ORIGINATING OFFICE

1. TRANSACTION CODE

C A = ADD
C = CHANGE
D = DELETE

PID

2. DOCUMENT CODE

3. COUNTRY/ENTITY

Liberia

4. DOCUMENT REVISION NUMBER

1

5. PROJECT NUMBER (7 DIGITS)

669-0139

6. BUREAU/OFFICE

A. SYMBOL
AFR

B. CODE
6

7. PROJECT TITLE (MAXIMUM 40 CHARACTERS)

Upper Bong County Integrated Rural Dev.

8. PROPOSED NEXT DOCUMENT

A. 1 = PRP
 2 = PRP
 3 = PP

B. DATE

MM YY
07 77

10. ESTIMATED COSTS

(\$000 OR EQUIVALENT, \$1 =)

FUNDING SOURCE		BASE
A. AID APPROPRIATED		6,600
B. OTHER	1. FN	6,600
	2. N/A	
C. HOST COUNTRY		6,700
D. OTHER DONOR(S)		7,000
TOTAL		20,300

9. ESTIMATED FY OF AUTHORIZATION/OBLIGATION

a. INITIAL FY 77

b. FINAL FY 77

11. PROPOSED BUDGET AID APPROPRIATED FUNDS (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE		E. FIRST FY 1977		LIFE OF PROJECT	
		C. GRANT	D. LOAN	F. GRANT	G. LOAN	H. GRANT	I. LOAN
(1) FN	253		220		1,300		6,600
(2)							
(3)							
(4)							
		TOTAL		1,300		6,600	

12. SECONDARY TECHNICAL CODES (maximum six codes of three positions each)

13. SPECIAL CONCERNS CODES (MAXIMUM SIX CODES OF FOUR POSITIONS EACH)

14. SECONDARY PURPOSE CODE

15. PROJECT GOAL (MAXIMUM 240 CHARACTERS)

To improve the welfare of the rural population of Upper Bong County.

16. PROJECT PURPOSE (MAXIMUM 480 CHARACTERS)

To increase and maintain agricultural productivity and income of small farmers in Upper Bong County.

17. PLANNING RESOURCE REQUIREMENTS (staff/funds)

18. ORIGINATING OFFICE CLEARANCE

Signature

Title

Acting Director, USAID/Liberia

Date Signed

MM DD YY
07 07 77

19. DATE DOCUMENT RECEIVED
AID/W, OR FOR AID/W DOCUMENTS,
DATE OF DISTRIBUTION

MM DD YY

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CURRENCY EQUIVALENTS

The official monetary unit is the Liberian dollar, with a par value to the US dollar. The US dollar is legal tender in Liberia.

WEIGHTS AND MEASURES

1 acre (ac)	=	0.405 hectares (ha)
1 mile	=	1.61 kilometers (km)
1 square mile	=	640 ac = 259 ha
1 ton	=	2,240 pounds (lb) = 1,016 kilograms (kg)

ABBREVIATIONS

AETC	--	Agricultural Extension Training Center
AGRIMECO	--	Agricultural Mechanization and Land Development Company
AHT	--	Agrar-UND-Hydrrotechnik
BPMU	--	Bong Project Management Unit
BWI	--	Booker Washington Institute
CAES	--	Central Agricultural Experiment Station
ERR	--	Economic Rate of Return
FTC	--	Farmer Training Center
GDP	--	Gross Domestic Product
GNP	--	Gross National Product
GOL	--	Government of Liberia
ICA	--	International Coffee Agreement
ICO	--	International Cocoa Organization
LBA	--	Licensed Buying Agents
LBDI	--	Liberian Bank for Development and Investment
LEC	--	Liberian Electricity Corporation
LIPA	--	Liberian Institute for Public Administration
LISCO	--	Liberian Iron and Steel Corporation
LPMC	--	Liberian Produce Marketing Corporation
LPMU	--	Lofa Project Management Unit
MA	--	Ministry of Agriculture
MH	--	Ministry of Health and Social Welfare
MPW	--	Ministry of Public Works
NSA	--	National Seed Association
PCC	--	Project Consultative Committee
PMU	--	Project Management Unit
PSC	--	Project Steering Committee
UL	--	University of Liberia
UNDP	--	United Nations Development Program
USAID	--	United States Agency for International Development
WARDA	--	West Africa Rice Development Association
WHO	--	World Health Organization

FISCAL YEAR

July 1 - June 30

TABLE OF ANNEXES

- I. Excerpts from Environment Assessment
- II. AID and Other Relevant Experience
- III. Agreements Reached During GOL/IBRD Negotiations
- IV. IBRD Loan Provisions
- V. Evaluation Plan
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- VII. Standard Item Checklist
- VIII. Project Checklist
- IX. Country Checklist
- X. Project Description
- XI. Draft Authorization
- XII. Loan Application
- XIII. Mission Director's Certification FAA 611(e)
- XIV. PRP Approval Cable
- XV. Environmental Assessment Cable
- XVI. PP Approval Cable
- XVII. Pesticide Waiver Request

1.0 SUMMARY AND RECOMMENDATIONS

1.1 Face Sheets

1.2 Recommendations: The following actions are hereby submitted for AID approval within this project paper:

A. Loan

Loan Terms: Forty (40) years, 10-year grace period, 2 percent (2%) interest per annum during grace period, and 3 percent (3%) interest per annum thereafter on unpaid balance.

B. Waivers

1. A waiver for the local procurement of Code 935 agricultural commodities (not to exceed \$30,000) required for the first year of the project (see Section 4.3.2).

2. A waiver for the procurement of certain pesticides required for the production of coffee, cocoa and rice under this project (Reference: Annex XVII).

1.3 Description of Project

1.3.1 The Borrower and Implementing Agency

The Borrower shall be the Government of Liberia (GOL) acting through the Ministry of Finance, the Ministry of Agriculture, the Ministry of Public Works and the Ministry of Health and Social Welfare.

1.3.2 Project Summary

A. Description: This project will be carried out in conjunction with the GOL and IBRD. The purpose of this project is to increase the income and agricultural productivity of 9,000 small farmers in the upper three districts of Bong County (see Map #2). The primary focus of the project is the application of improved technology to crops already being grown by these farmers. By the end of the project in 1981, they will have increased their average income by 40 percent in real terms, and will have made the necessary investments in permanent rice cultivation or in tree crops to raise their income by 140 percent by 1990. This will result primarily from increases in agricultural productivity; and from the development of new swamp riceland and new coffee and cocoa plantings.

<u>Crop</u>	<u>Area (ha)</u>	<u>Present Yields (ha)</u>	<u>Minimum Expected Yields (ha)</u>
Upland Rice	5,750	1,000 kg	1,300 kg
Swamp Rice	2,050	1,300 kg	3,000 kg
Coffee	1,500	200 kg	1,000 kg
Cocoa	3,000	250 kg	1,000 kg

In order to bring improved technology to small farmers, this project will:

1. Provide training to extension staff and farmers in the use of the new input packages, along with training in improved methods of on-farm processing.
2. Develop an extension and land development service to provide on-farm assistance in the application of the technology.
3. Develop six cooperative organizations to improve and facilitate input supply, credit, and marketing.
4. Assist farmers to obtain title to land being placed under permanent cultivation.
5. Develop a revolving credit fund to provide a source of continuing credit for farm inputs after the termination of funding under this project. This fund will be created from loan reflows and will be managed by a banking facility in the project area which will be part of the project.
6. Construct or improve 180 miles of farm-to-market roads within the project area.
7. Improve village health through development of village water sources and through surveillance and control of schistosomiasis.

These activities will be managed and supervised by a semi-autonomous Project Management Unit (PMU) which will be responsible to an inter-ministerial steering committee headed by the Minister of Agriculture. This unit will have a special budget and banking account for the purposes of implementing the project, and will have a total staff of 343 when maximum staffing is attained in the fourth year at its peak.

B. Project Development and Feasibility

This project is a replica of the jointly financed (AID/IDA/GOL) Lofa County Integrated Rural Development Project ^{1/} which

1/ AID Loan No. 669-R-022 in the amount of \$5.0 million.

is being successfully implemented in an adjacent county. Its general feasibility was determined as the result of an in-depth feasibility study in 1975 by the firm of Agrar Und Hydrotechnik of Essen, Germany. This study was financed by the IBRD and showed an expected IRR of 25.7 percent. The project was subsequently appraised by a joint IBRD/AID appraisal Mission in May 1976. AID's participation included three consultants from Development Alternatives, Inc., and two Mission staff members. The PRP was reviewed and approved by AID/W in November 1976. The project herein proposed has an IRR of 21 percent. Subsequent to the approval of the PRP, the social aspects of the proposed project were studied by Dr. Daniel Arronson, Staff Anthropologist, REDSO/WA and found to be socially feasible (see Section 3.4). The environmental impacts of the proposed project were studied by a joint team of ten specialized consultants from the firm of Environmental Consultants, Inc., and from the American Public Health Association. The resultant formal environmental assessment indicated that the project would not create any major adverse impacts and that any minor impacts could be successfully controlled by project-initiated activities, e.g., training, etc. (see Section 3.2).

C. Summary Financial Plan:

The total project costs are estimated to be \$20.3 million, including a contingency factor of 25 percent, over a five year period. The cost of financing the project will be split almost evenly between the GOL, AID and IBRD. A summary allocation of the proposed financing is as follows:

1. AID: Total financing of \$6.6 million (32.5 percent of project costs), which represents 45 percent of foreign exchange costs and 20 percent of local costs. \$4.4 million of the AID loan will be expended for foreign exchange costs and \$2.2 million for local costs. Primary areas of AID financing include 75 percent of the cost of farm inputs, 100 percent of road construction, and 10 percent of local salary costs. The financing of road construction will be through the fixed amount reimbursement (FAR) method of disbursement.

2. IBRD: Total financing of \$7.0 million (34.5 percent of project costs) which represents 55 percent of foreign exchange costs and 15 percent of local costs. Primary areas for IBRD funding include 100 percent of expatriate staff salaries, 17 percent of local salary costs, 85 percent of total building and vehicle costs and 75 percent of general services and operating costs.

3. GOL: Total financing of \$6.7 million (33 percent of project costs), which represents 65 percent of total local costs. The GOL contribution includes 73 percent of local salary costs, 100 percent of the costs for hired agricultural labor, 25 percent of the total cost of farm inputs, and \$.7 million for other local operating costs.

1.4 Findings

On the basis of the analysis contained herein, the USAID Mission to Liberia concludes that the project is technically, economically, and financially sound. It is recommended that a loan be extended to the GOL in an amount not to exceed \$6.6 million. The analysis reflected herein supports the conclusion that the project meets all applicable statutory criteria, has a favorable economic return and will not have a significant adverse impact on the environment. The Acting USAID Mission Director has certified that Liberia has the capability to effectively maintain and utilize the project.

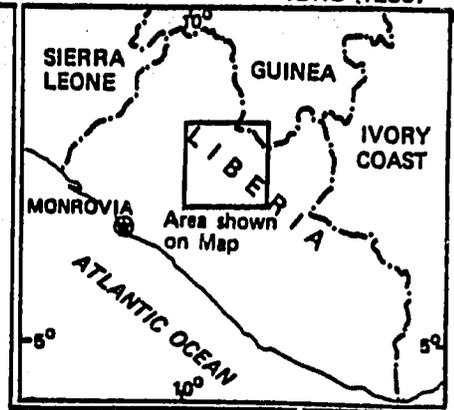
1.5 Project Issues

The Project Review Paper and the subsequent EC/PR raised a number of questions and issues that were to be addressed in the Project Paper. The following is a listing of those issues and of the sections where they are addressed:

- Land Tenure-Section 2.3.12
- GOL Manpower and Project Timing - Section 4.1.3
- Role of Monitoring and Evaluation Unit - Section 4.4
- Post Project Administration - Section 4.1.3
- Commodity Procurement - Section 4.3.1
- Roads - Section 3.1.3
- Establishment of Banking Facilities - Section 3.3.2
- Institutionalization of Credit - Section 3.3.2
- Produce Storage - Section 3.1.4
- Nutrition Indicators - Annex V
- Farmer Participation - Section 3.3.5
- Upland Rice Technology - Section 3.1.2
- Farm Budgets - Section 3.3.1
- Role of Women - Section 3.3.5
- Relevant Past Experience - Section 3.1.6
- Farm Labor Availability - Section 3.1.4
- Revolving Credit Fund - Section 3.3.2
- Head-carrying Problem - Section 3.1.4
- Shading Material - Section 3.3.2
- Cooperative Viability - Section 3.1.4
- Free Seedlings - Section 3.3.2

LIBERIA BONG COUNTY AGRICULTURAL DEVELOPMENT PROJECT

PROJECT AREA DISTRIBUTION OF CLANS



-  Project Headquarters
-  Proposed Wood Pulp Concession
-  Primary Roads
-  Clan Boundaries
-  Chiefdom Boundaries
-  County Boundaries
-  International Boundaries



The boundaries shown on this map do not imply endorsement or acceptance by the World Bank and its affiliates.

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2.0 PROJECT DESCRIPTION

2.1 PROJECT BACKGROUND

2.1.1 Economic and Structural Overview

The growth of Liberia's economy remains heavily dependent on the performance of the enclave sector consisting mainly of: (a) iron ore mines, (b) rubber plantations, and (c) forestry concessions. These enclaves are the main source of export earnings and contribute an important share of government revenues. Iron ore mining is by far the largest single activity in the enclave sector, accounting for about one third of gross domestic product at factor cost. There are only limited linkages between the concessions and the rest of the economy; as a result, the benefits of economic growth have been unevenly distributed. Annual repatriation by foreigners of profits and savings is equivalent to about 20 percent of gross domestic product.

At the other extreme, traditional agriculture has minimal interaction with the monetized economy; however, it supports 70 percent of the population of about 1.5 million. Average per capita GNP in 1975 was \$410; about 4 percent of Liberians have per capita income levels of US \$3,000 or more, while the majority live at or near subsistence level with a cash income of about \$70 per annum. To help redress this imbalance the Government is renegotiating concession agreements to increase its earnings and use the resources to diversify the economy with increased participation by Liberians.

The Government's Four-Year Development Plan covers the period July 1, 1976 to June 30, 1980. It identifies the basic, long-term objectives of Liberia's socio-economic development as: (a) diversification of production; (b) dispersion of sustainable socio-economic activities throughout the country; (c) greater involvement of Liberians in development activities; and (d) equitable distribution of the benefits of economic growth so as to ensure an acceptable standard of living for the people throughout the country. The average annual growth of real GDP during the Plan period is envisaged at around 6.8 percent. However, because of delays in the implementation of expected investments in iron ore mining and some slackening in demand for the country's main exports, a recent IBRD economic mission has estimated that real growth during the four-year period is unlikely to exceed 3-4 percent. Total development expenditure is projected at \$415 million, of which \$251 million would be financed from foreign sources and \$164 million domestically. Firm commitments accounted at the start of the Plan for almost 60 percent of the expected foreign financing.

The Development Plan attaches high priority to agriculture, particularly integrated rural development, as the cornerstone of the

LSX

Government's diversification strategy. The objective is to diversify and modernize agricultural production, increase productivity, improve associated rural economic activities such as marketing and processing, and provide social and physical infrastructure to improve the quality of life in the rural areas where most Liberians live.

2.1.2 Sector Characteristics

Liberian agriculture is characterized by small, traditional farms that comprise more than 90 percent of total agricultural holdings. The traditional sector is largely outside the monetized economy, located in areas with minimal infrastructure and composed of farms where less than 4 hectares are cultivated each year, producing mostly subsistence crops such as rice and cassava and some cash crops such as coffee, cocoa and sugar cane. There is little or no adoption of modern innovations. The average cash income of the traditional smallholder is about \$70 per capita, compared with a national average of about \$410. Alongside the traditional agriculture, there are foreign concessions principally engaged in large rubber plantations and logging operations as well as Liberian-owned commercial farms producing mainly rubber but increasingly expanding into coffee, cocoa, poultry and livestock.

Agricultural output in 1975 totalled \$197 million of which \$71 million originated in the monetized sector composed of rubber (\$36 million), coffee, cocoa, palm products, etc., and \$126 million in the subsistence sector. Average growth of all agricultural output during 1964-74 has been over 5 percent per annum in real terms. However, traditional agriculture grew at only 2.4 percent, while increases in the output of foreign concessions and Liberian owned commercial farms has been approximately 10 percent.

Prior to 1971, the Government's role in the development of Liberian agriculture was focused on the rubber and timber concessions and commercial plantations, while problems relating to traditional agriculture and rural poverty were largely neglected. In recent times, however, development of non-enclave agriculture has been emphasized by the Government, budgetary provisions have been increased (from 3.8 percent of total public expenditure in 1970 to 5.6 percent in 1976), and some important policy changes have been introduced (e.g., new pricing formulae for export crops, establishment of price stabilization and agricultural development funds, and support price for paddy).

The Four-Year Development Plan, which earmarks about one-fifth of total investment resources for the development of agriculture, aims at diversifying and modernizing this sector. Two basic strategies have been adopted: (a) in the short run, the Government seeks to achieve self-sufficiency in rice, the staple food for Liberians, by increasing

production of upland and swamp rice through provision of improved seeds and fertilizers; (b) in the longer term, the Government aims to encourage farmers to move away from the traditional shifting cultivation. The upland areas of Liberia are generally unsuitable for permanent cultivation of annual crops due to low soil fertility. To regenerate soil fertility shifting cultivation is widely practiced with fallow periods ranging from five to ten years. However, the soil conditions of the upland areas are suitable for the profitable cultivation of tree crops. The Government is, therefore, anxious to expand tree crops, particularly coffee, cocoa and oil palm. The extent of traditional shifting cultivation could further be reduced by developing swamps on low land areas for semi-permanent cultivation of rice. While swamp rice currently accounts for less than 10 percent of total rice production and has received relatively little attention, its long-term potential for development is very encouraging.

2.1.3 Government Strategy Implementation

In order to implement the above strategies, the Government envisages three different types of projects: (a) integrated rural development projects whereby productivity, income and living conditions of the small traditional farmers would be improved through a range of farm support services and infrastructural improvements; (b) establishment of large plantations for oil palm, sugar cane, coconut and rice by public sector corporations; and (c) continuing of on-going special projects stressing mechanical land development and subsequent cultivation of cleared areas by smallholders with support services provided by the Government. Under the Four-Year Development Plan, allocations of \$22 million for integrated rural development projects, \$33 million for large-scale farming and \$16 million for special projects have been made. Emphasis on the special projects under (c) above reflect the Government's desire to rapidly increase agricultural output and offset labor shortages. However, experience with such projects has raised doubt about their economic viability: fully mechanized land development has proved to be expensive and has caused serious damage to the fragile top soil.

An integrated smallholder development project using concepts and techniques similar to those of the proposed project is being implemented in the Lofa County of Liberia, financed jointly by the GOL, IDA and USAID. The project will assist about 8,000 small farmers in Lofa County to increase and diversify production of upland and swamp rice, coffee and cocoa by providing credit, inputs and extension services as well as by strengthening physical and social infrastructures required for smallholder development. There was an initial delay in implementing the Lofa project due to difficulties in recruitment of key project staff. However, the Lofa project is now operational and is moving satisfactorily.

The project is receiving necessary cooperation and support from the Government agencies and there has been a positive response from the project farmers. Overall, the GOL, IDA and USAID considers the results to date most encouraging and feel that they have sufficiently validated the IRD concept to justify the initiation of a second project.

2.1.4 Project Development

The proposed project was identified by the government and a detailed feasibility study was carried out in 1975 by the consultant firm of AGRAR-UND-Hydrrotechnik. In June 1975, AID was requested to provide financing up to \$10 million for this project. In May 1976, a joint IBRD/USAID team appraised the project and the final IBRD appraisal report was issued on February 11, 1977. These formed the basis for the AID Project Review paper which was approved by AID/W in December 1976. Other studies include the Environmental Assessment whose principal findings are included in Section 3.2 and Annex I, and the Social Soundness Analysis which is included in Section 3.4.

2.2 DETAILED DESCRIPTION

2.2.1 General Description

The proposed project seeks to address the basic cause of poverty, low agricultural productivity, for 9,000 small farmers residing in Upper Bong County. The proposed integrated approach is a replication of the Upper Lofa County project which is being successfully implemented in an adjacent county.^{1/} This approach is consistent with the priorities and strategy of the GOL's current Four-Year Development Plan as set forth above and with the strategies for AID assistance as set forth on page 35 of the USAID/Liberia Development Plan (DAP). The primary focus of this project is the application of improved agricultural technology to crops already being grown in the project area by small farmers. Under this project small farmers, those currently farming less than 4 ha, will be eligible to receive credit for improved inputs and hired labor. They will also receive training in the use of the inputs, plus reap the benefits of institutional and infrastructure improvements that will be initiated under this project; i.e., roads, wells, cooperatives, etc. The process of farmer selection and the function of the village credit committees, which approves individual farmer credit, is discussed in Section 3.4.5.

The project, which is estimated to cost \$20.3 million, will be implemented over a five-year period between 1977-1981, and will be jointly financed by AID, IBRD, and the GOL (32.5 percent, 34.5 percent and 33 percent respectively). A complete discussion of project costs and donor attribution is contained in the financial analysis (Section 3.3.4). In summary, major project inputs are as follows.

^{1/} See Sections 3.1.6 and 4.1.3 for a more complete discussion of the Lofa project.

<u>ITEM</u>	<u>Cost</u> ^{1/} <u>(\$000)</u>	<u>Percent Financed by:</u>		
		<u>AID</u>	<u>IBRD</u>	<u>GOL</u>
Buildings	542	-	80	20
Vehicles	488	-	90	10
Expatriate Staff	1,575	-	100	-
Local Staff	3,849	10	17	73
Vehicle O&M	677	-	70	30
Farm Inputs	2,776	75	-	25
Hired Farm Labor	660	-	-	100
Road Construction	2,309	100	-	-
Research & Consultants	830	4	88	8
Feasibility Study	200	-	100	-
Other	1,182	-	75	25

1/ Without contingency allowance

As indicated above, AID financing for this project is limited to four discrete areas as follows:

1. Seventy-five percent of the costs of incremental^{2/} farm inputs (\$2.1 million), consisting of fertilizer, pesticides, tools, seed and seedlings, etc. These inputs will be supplied to farmers as credit in kind and loan reflows will be used to capitalize a revolving credit fund which will provide financing for non-incremental seasonal credit and development credit after year #5 (see Section 2.3.7 for a discussion of the credit system). Pesticides procured under this loan will be limited to those approved by the EPA, and training and supervision of their use will be the responsibility of the project agricultural staff.

2. One hundred percent of the cost of road construction and reconditioning costs estimated at \$2.3 million. The GOL will be reimbursed for these costs under the FAR method of financing per the schedule set forth in Section 3.1.3. The GOL proposes to spend approximately 50 percent of the \$2.3 million for off-shore procurement of U.S. equipment and materials and an advance of this amount will be provided under the loan.

3. Seventy-five percent of the cost of local salaries for the cooperative and credit division of the PMU (\$.4 million). This amount represents the estimated, non-recurrent local salary costs for this division and will assist in the financing of 151 person years of local staff for this element of the project.

4. \$30,000 to finance evaluation consultants to assist in the establishment of a project evaluation system.

2/ Incremental inputs are defined as those seasonal inputs required by a farmer during the first year of participation in the program and development inputs required during the first five years.

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2.2.2 Description of Project Area

The project area, consisting of three of five districts of Bong County, lies in the central part of Liberia. The districts Gbarnga, Kokoya and Sanoyie cover approximately 6500 km² or 6 percent of Liberia's land area (see map no. 1). Topographically, the area is characterized by moderately undulating uplands with some isolated hills, dissected by a dense pattern of valley bottoms. The climate is characterized by moderately high temperatures of about 26°C with very little monthly variation, relatively high levels of humidity, and a wet season from March through November, with occasional showers during the dry season. The mean annual rainfall ranges from 1600 to 2200 mm per annum, with the lower values more predominant in the central part of the project area.

The soils in the project are from precambrium crystalline rock, resulting in ferrallitic soils that comprise most of the dissected uplands (80 percent) and high hills (8 percent). At present, these areas are used for upland rice cultivation under the traditional farming system of shifting cultivation and for some forestry and tree crops. The soils are generally of low fertility, are very acid, and have a high laterite gravel content. It is estimated that about 35 percent of these soils would be suitable for cocoa and coffee development. Lowland valleys comprise some 12 percent of the project area and consist of imperfectly to poorly-drained sandy to sandy clay loams, very acid and of relatively low fertility. However, an adequate amount of soil with a higher clay content can be found for irrigated rice cultivation. Some of these swamps are presently being used for rice cultivation, during the wet season, and water availability is adequate to sustain the growth of rice varieties of medium or long duration.

The population of the project area is estimated (1974 population census figures inflated with a 2.1 percent growth rate per annum) at 139,000 persons, about 9 percent of the total population of Liberia. Agricultural population is estimated at 100,000 persons. The average population density is 21 persons per km², but varies according to individual clans. Based on the agricultural census of 1971 and the population census of 1974, and its own surveys in 1974 and 1975, the Ministry of Agriculture has estimated the average household size at approximately 5.3, equivalent to 18,800 farm family households.

The main ethnic group is the Kpelle tribe and tribal relations play an important role in the farming community. A number of households are combined into a township, headed by an elected town chief, who is also chairman of its Council of Elders. In turn, the townships are formed into clans and into chiefdoms. The highest traditional authority of those three levels is vested in the chiefdoms' Council of Elders of which the paramount chief is the chairman. The project area consists of six chiefdoms.

The general infrastructure and social services are limited. Fifty-five percent (55%) of the population lives within one mile of a road. Besides the primary (146 km), secondary (220 km), and farm-to-market (162 km) roads, there are numerous paths and tracks linking population centers. Primary and secondary roads have nominal maintenance while farm-to-market roads have virtually none; consequently, most of the roads are unuseable during the heavy rains. There are a few small airstrips which are used by GOL and private aircraft; no scheduled air services exist. Telecommunication between the project area and other parts of Liberia is limited to a Government wireless station in Gbarnga, a telephone link with Monrovia and some private radio sets. Liberia Electricity Corporation (LEC) runs the power station in Gbarnga (three-diesel generating sets with rated capacity of 2,280 kw) which supplies the town and neighborhoods. Additionally, there are several small private diesel generator sets in the area (e.g., CAES, Cuttington College and Phebe Hospital).

There are about 45 elementary schools (32 in the Gbarnga district, 6 in the Kokoya district and 7 in the Sanoyie district), 14 junior high schools and one college in the project area. Medical services are limited to the Phebe Hospital and a few Government clinics; public health and sanitation measures are rudimentary in the urban centers and non-existent in rural areas.

There is an active marketing system in the area through the well-established daily or weekly town markets for rice, palm oil, vegetables and fruit. Export crops such as coffee, cocoa, palm kernels are usually sold through local traders who act as sub-agents for LPMC's buying agents. Although most of the paddy is still hand pounded, mach'ne milling is gradually increasing. Apart from the one ton-hour rice mill in Gbarnga, there are about 15 privately or cooperatively owned 1/4 ton/hour mills in the area.

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2.2.3 Farm and Crop Development - Present Situation

A. Farming Systems: About 10 percent of the project area is under cultivation of which only a third is cultivated by 75 percent of all farm families. The majority of these households have an average farm size of 1.5 hectares. Approximately 70 percent of the cultivated land is under perennial crops, mainly rubber, oil palm and some cocoa and coffee, and 30 percent under annual crops, mainly rice and cassava.

Nearly all households depend on shifting cultivation of the uplands for the production of their food crops. The system consists of felling, burning and clearing of secondary forest followed by one and sometimes 2 to 3 years of cultivation, after which the land reverts to bush fallow for 7 to 10 years. The first cropping year is planted with upland rice and intercropped with vegetables, maize, etc. Where soil fertility is not depleted, a second or third crop of cassava and ground-nuts may be planted in the uplands and sugar cane and sweet potatoes near the swamps. In certain inland areas, particularly with some of the clans in the Gbarnnga district, a balanced system of shifting cultivation is disintegrating as the population pressure has lead to shorter rotations thereby reducing natural restoration of soil fertility. No suitable alternative to shifting cultivation for the growing of the basic annual crops has yet been found, and therefore, it is important that emphasis is given to certain perennial crops ecologically suitable to the area.

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Valley bottom cultivation, although not yet very common in the Kpelle farming system, is more suitable for permanent rice cultivation. It is estimated that 10 percent of the present farm families are engaged in swamp rice cultivation on a semi-permanent basis, but without effective water control measures.

The perennial crops, presently grown by the smallholder near the villages, consist of coffee and cocoa. In general, cultural practices and maintenance are poor and for most of the year, these "orchards" cannot be distinguished from the secondary forest.

Animal production is severely restricted due to unfavorable climatic conditions, absence of natural grasslands, and the general occurrence of trypanosomiasis.

B. Farm Size and Land Use: The majority of households cultivate between 1-3 ha per annum. About 5 percent of the holdings have farm sizes between 20-200 ha, and take up 65 percent of all cultivated land in the project area. These are predominantly rubber farms and will not participate in the project.

Upland rice production is, for the Kpelle tribe, a way of life. Ninety-four percent of all smallholders grow an average of 1.6 ha of rice per household. The percentage of farmholders growing other major crops in the project area are: cassava 69 percent, coffee 14 percent, cocoa 19 percent, sugar cane 22 percent and corn 25 percent. The crops seldom exceed 1/4 ha per holding. Most farmers grow vegetables, whether interplanted with the upland rice or planted in kitchen gardens, citrus trees, mainly sweet oranges and some grapefruit, bananas and plantain, are also widespread. Sixty percent of the farm families are engaged in harvesting of the wild oil palm fruits, most of which are processed into oil to satisfy local cooking requirements.

Work on the upland rice farms commences in January/February with brushing and tree felling. Trees are burnt and the field is cleared of major debris by May/June. These and other farm operations, such as building temporary shelters and the construction of fences around fields to protect the crop against groundhogs, are done by men. Women and children undertake all other farm operations on upland rice. The rice seed is broadcast in June/July. Weeding is not commonly practiced, particularly on holdings having short bush/fallow rotations. Inland valley swamp rice operations are basically the same as for upland rice, with the exception that pre-germinated seed is broadcast or in case of very wet swamps, seedling are transplanted. Water control is rare.

The annual operations on the coffee and cocoa "plantations" consist of brushing the undergrowth once a year just before harvesting. Harvesting of coffee, consisting of stripping ripe and unripe cherries at one time, is undertaken between September and January. Cocoa harvesting occurs mainly from August to December.

Estimated Present Crop Production in Project Area

	<u>Upland Rice</u>	<u>Swamp Rice</u>	<u>Coffee</u> ^{1/}	<u>Cocoa</u> ^{1/}
Hectares	19,500	1,500	800	1,400
Yield (kg)	1,000	1,300	200	250
Production (000 kg)	19,500	1,950	136	300

1/ 85 percent of the area in production.

C. Farm Labor Availability: From statistical data available the potential labor force consists of 2.6 labor equivalents per average family. The average potential number of mandays is 600 per annum or 50 per month per farm holding. Assuming most farmholders will give priority to the cultivation of over one hectare of upland rice (250 mandays), a balance of 350 mandays would remain for minor food crop cultivation, tree crops, and swamp development. Due to the seasonal restrictions imposed on the agricultural activities, the period from March to June and to a lesser extent from mid August through November, may already require optimum monthly family labor uses. On analysis, the only labor constraint will occur in the initial phases of the proposed swamp development. The labor force required for the construction of water control devices and initial land leveling would exceed the farm labor capacity. Hired labor would therefore be required and a development loan would be provided for this purpose.

D. Land Tenure: The State is officially the ultimate owner of all land in Liberia, but tradition-based control, exercised by the tribes in their areas, is recognized. In addition, land can be held under private ownership. A recognized member of a traditional group may occupy and use any piece of land which is not occupied by anyone else. Shifting upland cultivation is practiced, but priority of choice exists over land which has already been cultivated by a man or his ancestors, or that which is adjacent to his present field. Decisions about cultivating rainfed swamps and the selection of such sites are usually independent from upland site claims. Inheritance of an area, where a man's priority

of choice is recognized is quite common and permanent improvements on the land (e.g., tree crops) are recognized as being owned by the farmer by both tribal law and Liberian land law. Additionally, the GOL has instituted a procedure for freehold land registration which is being utilized in the project area mainly by large landowners (often absentee). Registration requires approval from both traditional and GOL authorities.

2.3 PROPOSED PROJECT

2.3.1 Overall Farm Development

The technological innovations to be promoted by the project seek to complement, rather than displace, the traditional multi-crop, subsistence-oriented production pattern. On the one hand, the project will attempt to strengthen the subsistence capability of the farm family by increasing yields - via fertilizer and improved seed - of upland rice and traditional vegetable crops, including cassava. Where swamp rice is already grown (approximately 1,700 hectares in the project area), reclamation activities to increase swamp rice productivity will be promoted, combined with dry season vegetable crops on swampland to further assure subsistence and/or cash income.

The project provides the necessary capital for the farm family to finance the development costs of a coffee or cocoa orchard, thereby increasing its long-run cash income opportunities, the farm's cultivated area by about 1 ha and the productivity of family labor. The project will furnish credit for farm inputs including hired labor for swamp development, tools and equipment, seeds, seedlings, fertilizer and chemicals for major crops to be developed according to the following schedule of farmer participation and crop development: ^{1/}

Farmer Participants	500	1400	2300	2600	2200	9000
Crop Dev. Sched. (Ha)						
Upland Rice ^{2/}	600	950	1300	1400	1500	5750
Swamp Rice	100	350	600	500	6500	2050
Cocoa	-	300	700	1000	1000	3000
Coffee	-	150	350	500	500	1500

^{1/} From IBRD Appraisal Report

^{2/} Not incremental

2.3.2 Upland Rice Improvement

The traditional practice of cultivating upland rice in the

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system of shifting cultivation (slash and burn) is likely to continue for some time and must be accepted for demographic, social and technical reasons. However, by increasing the productivity of the land cleared, both income gains for the farm family and increased food supply to the nation become possible. Given the topography, soil characteristics and climatic factors, continuous cultivation of food crops on upland is not possible without introducing major soil conservation and water management techniques. Such innovations at the present are not feasible and therefore improvements in the upland rice productivity (existing yields 1,000 kg/ha) would be through the use of improved seeds, fertilizer and better farm management practices.

2.3.3 Swamp Rice

There are already 1,500 hectares of traditional and 200 hectares of improved swamp in the project area. The project would reclaim 1,650 hectares of new swamps and improve about 400 hectares of existing swamps. Out of this approximately 300 hectares would be developed as pilot schemes for double cropping of rice. Land clearing on virgin swamps would be done manually with the help of small hand equipment; flood protection and water control would be through peripheral drains, field bunds and leveling. The main focus of the on-farm measures would be on proper swamp management, timely planting and fertilization, and use of varieties that are resistant to iron toxicity.

Development costs are estimated at circa \$500 per hectare and development operations will be spread over a three-year period.

2.3.4 Coffee

The project will finance the planting of 1,500 ha of coffee over a period of four years. It is proposed that coffee be planted on the land two to four years after it has been used for upland rice cultivation in order to economize on land clearance costs and to provide some low shade for the coffee seedlings. Spacing of ten by ten feet within these strips will result in a plant density of 1125 trees per hectare. Seedlings will be protected from termites and borers through periodic insecticide treatments. Cash costs in the first three years will amount to \$515 per hectare, which will be granted as a development loan.

2.3.5 Cocoa

Choice of land, spacing, weeding and shade management is the same as described for coffee. Fertilizer applications are also the same, although the use of insecticides is more intensive. The project will promote the innovation of fermentation of wet cocoa beans by farmers to increase quality, and the Liberian Produce Marketing Corporation is

expected to introduce a system of grading and differential payment for cocoa. Development cash costs will amount to \$600 per hectare. A total of 3,000 ha will be financed over a four year period.

2.3.6 Horticultural Crops

To date little regular extension has been done with horticultural crops which provide most of the quality foods in the various "soups" which accompany rice in the diets of most people. Fruits and vegetables are already grown commercially in some parts of the project area but on an unimproved basis. Information is available from UNDP/FAO experts, the Central Agricultural Experiment Station and the University farm on better management practices for horticultural crops which can be put in readily understandable form for farmers.

The project will not offer credit packages for vegetable production, but it will be a source of seeds, fertilizers, pest controls and guidance from the extension agents. The roads built during the project will open up markets for these crops as well. Dry season production will be encouraged on the land prepared for swamp rice where a second rice crop is not feasible.

Cassava is the most important minor crop to the rural people, being eaten primarily when rice supplies are low. Increased cassava production will be encouraged through making available mosaic resistant planting material and providing information on good management. The nutritional value of cassava is low and its market prospects are poor, but as a "hungry season" crop it is very valuable to the rural people.

The most promising minor crops for dry season production in returns per workday and per acre are: green pepper, okra, cowpeas, peanuts, sweet potatoes, melons and maize. Onions, cabbage and tomatoes may also be grown if adequate plant protection measures are used. These crops will become an even more attractive investment if regular transportation is established to Monrovia, which is only a 3 to 4 hour drive away, half the distance being paved road and the other half all weather laterite road. If markets in Monrovia are to be expanded, the quality of the produce must be improved, which means good plant protection and transport to market without delay. Onions, cabbage, beans, cucumbers, tomatoes and radishes are presently imported to Monrovia. These could be produced in the project area for sale in Monrovia if their quality and price were such that they would present real competition for the markets.

Farmers in other areas have already shown a willingness to use the areas surrounding swamp rice fields for vegetable production. The

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project extension workers encourage that and promote dry season production there as well.

Particular emphasis will be given to contacting female farmers who are the usual vegetable producers. Also, extension personnel will be encouraged to make contacts with the 4 to 6 new community schools which the GOL is building in the project area in order to promote school gardens as well.

2.3.7 Supply, Credit and Marketing Services

In order to maximize small farm production and income, it will be necessary to establish and institutionalize an integrated system of input supply, credit and marketing services. The fundamental approach in designing this system will be generally the same as was used in the Lofa Project with certain adaptations to local conditions. Basic underlying principles include:

- Inputs sold to farmers at cost (no subsidization) but with reasonable margins to the cooperatives (see below) and LPMC for handling charges.

- Seasonable and development credit to finance the purchase of inputs. Credit will be provided in kind and at a minimum rate of 10 percent per annum.

- Marketing of basic crops through the cooperatives for sale to the LPMC at the officially designated price.

To accomplish the above, the project will assist in the establishment and/or strengthening of the following institutions/activities:

A, Cooperative Development

The BPMU will actively assist the establishment of cooperative societies. Though formation of societies will primarily be initiated by farmers, a great deal of support will have to come from the project. This will entail the launching of campaigns in the initial stages for the formation of societies, as well as assistance in the organization of day-to-day affairs, and close supervision of the business procedures. A Cooperative/Commercial Division, sufficiently staffed to perform the necessary tasks, will therefore be attached to the PMU.

It is envisioned that the development of primary village societies will take place along one of the two following models. The first model covers the case of the proposed block plantations and assumes

that entire village groups will opt to enter the project at the same time in order to farm side by side. In this case the village level primary societies will be formed, using traditional "kuu" working arrangements wherever possible. Land clearing, input requests, credit extension, and marketing will all be done through the village group. Likewise, the group will be responsible for input transport and storage and credit repayment.

The second model covers the case of dispersed membership concentrations not following the block plantation scheme. This model will be particularly applicable to the wood-pulp concession area where tree crop plantations will not be developed. However, it would also be suitable for any area of chiefdom where, due to sparse population concentrations, land quality, or the absence of communal working arrangements, small farmers choose to enter the project individually. Farmers under this model will look directly to the district level cooperatives for cooperative services and assistance.

Concurrent with the establishment of local organizations would be the development of six district cooperatives along existing chiefdom lines. At this level the cooperatives will be governed by a board of directors (titled the "lawmakers") which would be headed by the Paramount Chief, with tribal or clan leaders as other members. It is felt that the normal tribal leadership structure should be maintained at the outset to stimulate farmer confidence and that cooperative officers should not be elected for the first few years. Two representatives from each primary society would attend monthly meetings, in order to present the views of their constituents. The governing body of the primary societies would most likely be the same as that for the village - i.e., the chief and his elders.

Distribution of cooperative membership at the end of the project is estimated as follows:^{1/}

<u>Chiefdom</u>	<u>No. of Farm Households</u>	<u>Cooperative Members</u>
Jorquelle	11,270	4,500
Sanoyie	3,526	1,400
Kpai	2,600	1,000
Zota	2,530	1,000
Panta	1,730	700
Kokoyah	<u>1,860</u>	<u>800</u>
Total	<u>23,516</u>	<u>9,300</u>

^{1/} From Study by Development Alternatives, Inc.

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During the initial years many of the services provided by the project will be subsidized. However, over time the cooperatives will be able to assume this burden. To accomplish this, cooperatives must be placed on a sound financial footing from the outset, through at least three sources of income: seasonal and development loan interest, commissions on agricultural inputs and on produce channeled through the cooperatives. Of the ten percent interest to be collected on seasonal and development loans, cooperatives would receive 3 percent with the balance being paid into the Revolving Loan Fund. The cooperatives would increase the price of project supplied inputs by 5 percent to cover the costs of their services. As LBAs of the LPMC, the cooperatives will also receive the normal marketing commission -- 4-8 percent on the crop.

The Cooperative/Commercial Division of the BPMU would be headed by an expatriate manager and his Liberian deputy. The division would be divided into three sections: Cooperatives, Credit and Commercial. When the project is fully staffed, the Cooperative Section would have 12 field officers, and the Credit and Commercial Sections three each. The cooperative field officers would act as managers and bookkeepers for the six chiefdom cooperatives; two officers would be assigned to each cooperative. Of the total number of extension aides, one-third would be trained in grass roots cooperative and credit affairs. The latter would be assigned to the cooperatives under the direction of the cooperative manager (approximately one officer for each 300 members).

The cooperative field officers would handle day-to-day operations of the cooperatives, arranging for the provision and supervision of cooperative services. The co-op/credit extension aides would work in close coordination with the agricultural extension aides in drawing up the farm credit plans, supervising delivery and proper use of inputs, advising the farmers of their credit obligations, and supervising the delivery of produce to the market centers and/or cooperatives.

B. Farm Credit System

Since Bong County presently does not have any local credit institutions, the cooperative credit service division of the BPMU would have the primary responsibility of organizing the project credit program. Farm inputs and equipment would be available on credit, and credit will be available for local labor. Before the cooperatives are formed, the BPMU would have the responsibility of credit allocation to the village primary societies and individual early adopters. The cooperatives, on becoming organized and viable, would be assigned this responsibility. A project revolving credit fund would be established under an agreement between IBDI and GOL, the former acting as administrator of the fund. All credit repayments including interest would be credited to the fund. The fund will charge farmer cooperatives (or BPMU) 7 percent per annum on

loans which are then lent to farmers at 10 percent. LBDI would receive 2 percent of the disbursed funds as commission for administering the fund. At the end of project development in 1982 the fund would have an estimated US \$570,000, and by 1989 development loans amounting to US \$2.5 million would have been repaid and would be available for further agricultural development as determined by the trust agreement.

Within the framework of the project two types of credit will be issued:

- Short term seasonal credits (with an average term of 8 months) will be made on the basis of a flat interest fee of 10 percent of the principal amount of the credit.

- Long term investment credits for land development and planting of tree crops. Cocoa and coffee development credits would be disbursed over a period of six and four years respectively while most of the swamp development credits and cash loans would be disbursed during the second and third years of their development. Development loans/credits would bear an annual interest rate of 10 percent. Coffee and cocoa development loans would have a repayment period of eight years with a four year grace period during which interest would be capitalized; however, swamp development loans would not have a grace period.

Interest rates have been determined on the basis of the debt servicing capacity of the small farmers, the recovery of credit operations costs and are in conformity with rates being charged under the Lofa County Integrated Rural Development Project. Nevertheless, it will be the duty of the evaluation section of the PMU to periodically monitor the practicality of these rates. Guidelines for the setting of the rates will be based on the profitability of the cooperatives so that as the project nears completion, cooperative income from interest and commissions will cover the full costs of operation.

C. Inputs Supply, Distribution, and Pricing.

Fertilizers and other chemicals will be obtained from overseas suppliers while seedlings will come from LPMC nurseries already established in Liberia. Rice seed, for swamp and upland will be obtained from the seed multiplication scheme which has been developed as part of the Lofa County Integrated Rural Development Project.

During the early stages of project development, the BPMU will assume responsibility for input distribution after the inputs have been delivered to Gbarnga by the LPMC. The BPMU will distribute these inputs to the district centers and stored in rented warehouses until the district cooperatives can construct their own storage facilities. From

this point, inputs will be distributed by the BPMU to sub-district cooperative centers which will be constructed with minimal financial assistance provided under this project and similar to those presently being constructed under the Lofa project. After the cooperatives become established, they will assume responsibility for input distribution from Gbarnga down to the sub-district centers.

As noted earlier, the pricing of inputs will be at full cost. The LPMC will mark up the landed price of imported inputs by ten percent in order to cover its costs. The cooperatives in turn will add an additional five percent markup which at this time is thought to be sufficient to cover their costs.

Transportation costs from Monrovia to Gbarnga will also be charged by the LPMC and included in the Gbarnga delivered price. As the cooperatives and/or PMU incur transportation costs in the final delivery of the inputs to the village groups, these costs will also be added to each farmer's commodities.

In general, the following institutional arrangement for produce marketing is foreseen under the project:

- The LPMC as ultimate purchaser with a complete outstation in the project area;
- Cooperatives as licensed LPMC agents;
- Sub-agents directly commissioned by the cooperatives; and
- Additional produce collection points in market towns.

This system is expected to provide:

- A deeper involvement of the LPMC in marketing operations in the area; and
- The rise of cooperatives as new marketing institutions.

The LPMC outstation in Gbarnga will become the focal point and the backbone of all marketing operations in the area. For this purpose the small warehouse existing at present will be developed into a fullfledged outstation such as the one in Voinjama in the Upper Lofa area.

The outstation in Gbarnga, as a matter of principle, will accept all products and not only paddy as is the case now.

The pattern of cooperation between the LPMC and the project will depend in the early stages on the phasing of the cooperative structures, i.e., whether the village level societies or the cooperatives are established first. In the case of the former, the societies will arrange for transportation of their produce through the PMU. In the event that the LPMC has not as yet developed the Gbarnga station into a full-service agency, the PMU will accumulate the produce in rented warehouses until enough is available for bulk transport to the LPMC in Monrovia. In this case, the PMU would be reimbursed by the LPMC for all transport costs.

Although only cooperative members will be granted credit, it would be greatly beneficial to the cooperatives, both financially and in terms of experience gained, to be able to accept produce from any farmer in the project area. Most of the tree crops produced under the project will not come into production until after BPMU has left the area, the exclusion of non-member produce (particularly coffee, cocoa, and palm kernels) would leave the cooperatives unprepared for the future marketing of their most important crops, and would lose a valuable cash flow in their early years. Consequently, while only members would receive inputs on credit, cash sales and marketing services would be available to all farmers.

2.3.8 Extension

The extension services presently operating in the project area consist of about 20 staff members, supervised by the county extension agent who is based at Gbarnga. Most of these agents are extension aides who are dispersed over the area and deal directly with farmers in matters of agricultural production or home economics. Except for the county agents, who are graduates of the College of Agriculture and Forestry of the University of Liberia, the majority of extension workers have received a secondary education, but have received very little in-service training. About 5 "practical" aides (running demonstration farms) are illiterate and have received a short course at the Agricultural Extension Training Center (AETC) at the University farm near Monrovia. In general, the present extension service in the project area is understaffed (agent/farmer ratio is over 1:1000), lacks transport facilities and practical on-the-job training.

The project area would be divided into six development zones along existing clan lines, each staffed by an extension officer and by 10 to 20 extension aides. They will be assisted and supervised by the field and tree crop specialists and other technical services such as the Land Development Unit of the PMU in Suakoko. Depending on the type and phasing of the farm and crop development, the number of extension aides to farmers would be based on an average ratio of 1 to 50 in the first years, increasing to 100 and 150 respectively in the third and fourth

development years. The most intensive ratio of 1:25 would be for the first two years in the pilot irrigation and swamp development. Field staff will be provided with transport and other conditions of service would be improved. Extension aides would receive additional training, mostly on the job by their immediate supervisors and PMU's specialist officers. Short, specialized, in-service training courses will be given at the Training Center at Suakoko by personnel of PMU and CAES.

2.3.9 Research

An in-depth discussion of the current status of research activities in Liberia is contained in Annex 3 of the IBRD Appraisal Report.

Agricultural research in Liberia lacks proper direction, planning, implementation and coordination. Consequently, past efforts have been ineffective and constraints have been both organizational and financial. The CAES is poorly staffed, has limited physical facilities, is inadequately financed, and lacks the administrative and financial capacity to organize effective research. In order to alleviate some of the constraints, funds were provided under an earlier IBRD loan for the improvement of rice research at the station. Some progress has been made and activities are likely to continue till August 1977.

This project will provide finances for some of Liberia's immediate research needs: (a) continuation of the research efforts started under the earlier IBRD loan; (b) initiating research activities in the field of cocoa and coffee; (c) overall improvement of the physical facilities at CAES, in particular laboratory facilities for the agronomy and soil sections. In addition, funds will be provided for two consultant man-months for an in-depth analysis of the present status of research, the required organizational changes which would make research more effective and the establishing of research priorities.

2.3.10 Rural Water Supply

Due to widespread incidence of water-borne disease in rural and semi-urban areas, the GOL needs to establish rural water supply and sewerage systems as a component of its overall rural development programs. The Federal Republic of Germany financed investigations, planning and feasibility studies in six county towns for the supply of treated piped water, and bids have been invited from contractors for three such projects, including one at Gbarnga. Apart from this, a well-drilling program was conducted in the rural areas with UNDP assistance and another UNDP/WHO study has recently been started to identify pilot projects in four rural communities. However, in the near future no significant undertaking for the improvement of rural water supply will be forthcoming. While a major

rural water supply program of any significant scale is beyond the scope of this project, the PMU will work closely with the Project Advisory Committee at the county level to improve village water and sanitation facilities in those rural villages not touched by other government programs. A similar program has already been initiated by the Lofa Project in the limited number of villages and has been received enthusiastically. This program seeks to improve and upgrade village water supplies by the following actions:

1. construction of cement lined, hand-dug wells;
2. the installation of a simple pumping mechanism to transport the water from the well to an elevated storage facility;
3. a gravity fed distribution system to transport the water from the storage facility to one or more centrally located points within the village.

To implement this program, the Lofa County PMU has formed a small team to provide technical assistance and supervise construction. The PMU provides cement well rings, pipe, and the cement required for the construction of a simple storage facility. The village supplies all labor, sand and gravel, lumber and finances the pump.

There is a great deal of interest in this program at the village level; primarily because the villagers perceive it as a means of insuring a reliable water supply and eliminating the laborious practice of carrying water by hand. Moreover, these wells can significantly reduce the high level of intestinal parasitic infection that currently exists in the villages. Studies carried out by the Schistosomiasis Surveillance Unit (SSU) in Lofa County indicate that over 40 percent of all villagers have some type of intestinal parasites. The Lofa PMU has gone one step further than originally envisioned. It is now assisting villages through minimal technical assistance in the construction of public latrines.

The Bong Project calls for a similar project and has budgeted \$100,000 for commodity assistance. This activity will be financed by the IDA loan.

2.3.11 Schistosomiasis Surveillance Unit (SSU)

The production of swamp rice in irrigated fields causes an increase of the waters suitable for the breeding of the vector snails. Once these waters are colonized by the snails, the work in the irrigated fields considerably enhances the contact between man and the cercariae-shedding snails. This may alter the present schistosomiasis situation as follows:

- the percentage of infected people may increase;
- the intensity of infection may increase when more people acquire much higher worm infestation, and this may result in a conversion from inapparent infection to manifest disease in many people and to a further reduction of the working capacity of the population concerned;
- the larger number of worms carried by the population increases the number of worm eggs excreted with urine and feces. Thus, more snails will become infected, stimulating a vicious circle of increasing transmission.

As a consequence, with the considerable expansion of swamp rice production in the project area, a rise in the prevalence of the infection and an increase of the morbidity caused by schistosomiasis is feared.

Since (1) there already exists a significant infection of schistosomiasis in the project area, and (2) the project may increase it, constant and careful vigilance is essential. These same considerations led to the setting up of a schistosomiasis surveillance unit under the Lofa County Integrated Rural Development Project. The unit will add personnel and logistic support to monitor the Bong Project area as well.

As designed, funding is provided for 68 person-years of assistance during the life of the project (10 person-years more than provided for the Lofa Project) and funding of \$452,000 is provided to support this unit (an increase of \$180,000 over what is programmed for support of the Lofa Unit). Funding will be provided under the IDA loan and by the GOL.

The increase in staffing and budget reflects both the experience gained in Lofa and a somewhat more action oriented approach to the control of schistosomiasis than what was originally envisioned in Lofa. In addition to surveillance, the Lofa Unit is or will be performing the following functions:

1. referral of infected villagers for medical attention and follow-up surveillance;
2. monitoring of village wells for bacterial and parasite infestation;
3. experimentation with various control measures;
4. inspection of swamps prior to development for swamp rice.

In Bong, the SSU will perform all of the above duties plus the monitoring of fertilizer and pesticide residue.

The SSU will conduct a very limited malaria surveillance activity in the project area. Costs of this effort are to be roughly \$50,000 taken from project contingency funding. This amount will be used to finance: (1) short-term consultant services of a malariologist who will assist in setting up and monitoring the malaria surveillance activity, (2) local medical/laboratory technicians, (3) basic equipment and supplies for malaria surveillance work.

While A.I.D. health experts do not expect malaria incidence to increase as a result of the project, this limited surveillance activity is needed to confirm that opinion. Also, this malaria activity may provide a headstart, at minimal cost, for possible future programs of malarial research and/or treatment/control for this major health problem.

2.3.12 Land Registration

The Project Management Unit (PMU) of the Upper Bong County Rural Development Project will assist program participants in the registration of land being placed into permanent cultivation under this project. The district level cooperative organizations will initiate the required steps to secure land title for those members who elect to engage in permanent cultivation activities. Initially, the PMU will perform this function until district cooperatives are organized and operational. Further, the land survey and registration unit of the PMU will perform the necessary surveying required by the Government for land registration. The registration process will be carried out in the following general manner:

A. Prior to undertaking the development of a specific area for permanent swamp rice or tree crop cultivation, the responsible cooperative organization or the PMU will initiate the necessary legal steps to acquire title to the land in trust for farmers. First, tribal approval will be obtained from the Paramount and Clan Chiefs for the transfer of title and for certification by the Land Commissioner that the property is not otherwise encumbered.

B. On receipt of the certification, the PMU land survey and registration section would conduct the required survey to allow proper registration of the concerned parcel of land.

C. Concurrent with the physical development of the area, the cooperative organization or the PMU would take the final steps required to have the deeds issued in the name of the cooperative or of the PMU as trustee for the farmers cultivating the land. This will include payment of land price to the County Revenue Agent, obtaining the signatures of the County Superintendent and the President of the Republic of Liberia, probating the deed through the court, and registration of the probated deed with the County Registrar of Deeds.

D. At the time farmers are selected to undertake permanent cultivation of the land, they will be given notice that the PMU or their cooperative organization is registering the land so that they each will receive title in fee simple on repayment of their development loans. Further, the development loan agreement will set forth the individual farmers' rights to title in fee simple on repayment of the loan and allow for the prorated costs of land acquisition to be included within the development loan.

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E. After the physical development of the land, but before the expiration of the development loan period, the PMU survey and registration section will conduct surveys of the individual farmer's plot so that the cooperative or the PMU will be able to convey valid titles of accurately described plots to the individual farmers upon repayment of their development loans.

F. At the AID/W review of this PP on 7/28-29/77, the innovative land registration measures built into the project (see 2.3.12. A thru E above) were commended, but concern was expressed that fee simple title alone may not constitute adequate land tenure protection for small farmers in the project area. Agricultural development of small holder plots might normally be expected to generate economic pressures which jeopardize small holdings and encourage the growth of larger holdings. However, desirable this may be in the very long run, it would be highly socially and economically disruptive over the next ten-twenty year period.

The formal land registration and titling system operated out of Monrovia is not directed toward the land tenure concerns of small holders nor does it have the capability to absorb expanded functions in this area. Once fee simple title is conferred, land holdings may become more susceptible to loss or sale than was the case when the land was under tribal regulation.

Since land tenure security issues are long term, extending beyond the project life, the BPMJ Land Registration Division should prepare an analysis late in the project life, in about Y4, regarding (a) land tenure status at that time in the project area (b) projections of land tenure trends and future problems and (c) recommendations for land tenure related activities/programs beyond the project life to protect small farmer land. In formulating approaches to potential land tenure problems, e.g., excessive foreclosure or sale of small holder plots in tribal areas to non-tribal interests (credit institutions, cooperatives, individuals), the role of traditional tribal land tenure regulations/authorities should be considered. One means of protecting small holder land could be a dualistic approach combining formal land registration measures and revised traditional land use measures. Normally, only local tribal authorities would be expected to have the knowledge of local land matters and social/economic/physical conditions to decide upon the most equitable and efficient uses of land within the tribal areas. Depending on the extent to which small-holder land in tribal areas appears to be endangered, it might be desirable to delineate new land management roles and regulations for traditional authorities to supplement the formal land registration system. For example, local authorities could play a role in: (1) approving or disapproving private land sales in the tribal area -- in effect, subordinating private interests to tribal interests, (2) ensuring preference to local small farmers in purchasing land in the tribal area, (3) controlling the amount

of sale of tribal land to outsiders, (4) approving plans of credit institutions or cooperatives to use land they may hold in the tribal areas, (5) reallocating foreclosed land, (6) continuing normal control over the allocation of communal land, (7) mediating disputes--for private or communal land. These illustrative functions may in some instances imply revisions in land laws or in the authority conferred upon local leaders.

A loan agreement covenant is proposed to the effect that the G.O.L. will participate, during the project, in analysing the land tenure situation and trends in the project area, and in formulating and effecting programs or procedures to protect small farmer holdings, if such measures are deemed necessary or desirable.

1.3.13 Rural Roads

The project feasibility report shows that only 45 percent of the population of the proposed project area has direct access to a road and that an additional 10 percent of the population is within one mile of a road. However, these figures include that element of the population living in urban areas and do not give a representative picture of the rural area covered by this project. Thus, one can safely assume that over 50 percent of the population is more than one mile away from any type of road. While there is no empirical evidence to indicate the optimum amount of road needed to support this project, its successful implementation will require upgrading of roads and construction of new roads into the areas with agricultural potential not presently serviced by roads. The maintenance for primary and secondary roads is currently being carried out by the Ministry of Public Works (MPW), therefore road construction and maintenance activities of this project will focus only on the problem of farm-to-market (FTM) feeder roads.

At the time of the project feasibility study in 1975, it was determined that an additional 100 miles of new FTM road be constructed and that the 68 miles of existing FTM be upgraded/reconditioned to provide an adequate transportation network for the project's agricultural activities. However, over the past two years several factors have altered the required mix of construction and reconditioning. During that period approximately 34 miles of new FTM road have been constructed, and an additional 28 miles will be constructed during the next two years in a new rural road program under the Ministry of Local Government (MLG). The size of the project area has also been expanded and now includes Sanoyea District. However, this increase has been more than off-set by a new wood-pulp concession that occupies approximately 25 percent of the project area. Under the terms of the concession agreement, new agricultural development will not be permitted more than one mile away from existing roads. This has the effect of reducing the need for new roads in this area.

As the result of these changes and alterations, it is now proposed that the following rural road program be undertaken under this project to assure adequate FTM roads for agricultural development.

1. Reconditioning and upgrading of the 102 miles of existing FTM road.

2. Reconditioning and/or upgrading of 28 miles of road which will be constructed by the MLG. This road will initially be built to minimal standards, but the increased traffic created by the project will require upgrading during the later years of the project.

3. Construction of approximately 40 miles of new roads of which 15 miles have been tentatively identified by country officials as of a "high priority". However, final selection of all new road construction will be subject to approval of the BPMU and based upon the agricultural development requirements of the project.

Construction and reconditioning of these roads will be based on one of four new design criteria recently adopted by the MPW for FTM roads, with which USAID/Liberia is in complete agreement. In summary, these new criteria are based on average daily traffic (ADT) and propose various widths, grades, etc., based on actual or expected usage. A complete description of these new criteria is contained in Table III-2. To implement the FTM road program in Bong County, a separate unit will be formed by the MPW, similar to the one currently constructing roads for the Lofa County IRD project. On completion of construction and reconditioning, the MPW will assume full responsibility for routine annual maintenance. Estimated costs for construction and reconditioning are \$2.3 million, of which 100 percent will be financed under this loan.

2.4 ANTICIPATED RESULTS/LINKAGES (Logical Framework)

In order to obtain the stated project goal of improving the welfare of the rural population of Upper Bong County, the following conditions must be met:

A. Economic

An average increase in small farm income of 40 percent (in constant terms) by the end of the project and with the necessary small farm investments in place to assure a 140 percent average income increase to 9,000 small farmers by 1990.

B. Nutrition

Increased caloric intake and reduced incidence of chronic malnutrition.

C. Health

A reduction in the incidence of schistosomiasis within the project area.

D. Transportation

Reduced farm-to-market transportation costs and time.

E. Employment

Generation of an estimated 800,000 days of incremental employment over the life of the project.

Given the stated project purpose of increasing and maintaining the productivity and cash income of small farmers in Upper Bong County, by the completion of the fifth year of the project 9,000 small farmers within the project area will have:

A. Utilized improved agricultural inputs provided through credit made available under this project.

B. Received training and on-farm extension advice on the proper use of the input package.

C. Increased upland rice yields from 1.0 ton/ha to 1.3 tons/ha and swamp rice yields from 1.4 tons/ha to 3.0 tons/ha.

D. Made the investments in tree crops and are practicing improved cultivation methods that will result in maximum yields of 1.0 tons/ha in year ten.

E. Become participating members in one of the six cooperative organizations being established within the project area and will have received inputs, credit, and marketing services from these organizations.

F. 1500 farm families will have improved the nutrition of their children ages 6 and under and their lactating women.

In addition to these specific farmer benefits, the following institutional/organizations systems will have developed to the point where they are capable of providing continuing assistance to the project target group and initiate similar services for the remaining 10,000 small farmers in Upper Bong County:

A. Six economically viable cooperative organizations within the project area.

B. A revolving credit fund whose capital structure will permit the provision of continued credit for the project target group and still have sufficient funds to allow for continued expansion of the credit program for new farmers.

C. An established input supply system through LPMC.

D. A trained government extension staff capable of continued support for the original program participants and to the remaining small farmers not initially included within the project target group.

E. An effective maintenance system for the 180 miles of farm-to-market roads constructed or reconditioned during the life of this project.

F. A functioning system to continue schistosomiasis surveillance and to apply necessary control measures when needed.

In order to achieve the project purpose, the following project outputs must be achieved during the life of the project:

A. Aggregate 5 year incremental production of:

(1) Upland rice	2,375 tons
(2) Swamp rice	5,150 tons
(3) Coffee	225 tons
(4) Cocoa	60 tons

B. Recruitment and training of 70 field extension aides and supervisory staff.

C. Staff training for the six cooperative organizations.

D. The annual level of credit provided from the revolving credit fund will have reached \$272,000 for seasonal loans and \$876,000 for development (intermediate) credit.

E. 180 miles of farm-to-market road will have been constructed or reconditioned and an annual maintenance program will have been initiated.

F. The incidence of schistosomiasis among project participants will have been reduced.

G. 300 village wells will have been constructed.

Major Project Inputs

A. Technical Assistance	35 person-years
B. Local Staffs	1500 person-years
(1) Administrative Services	(140 person-years)
(2) Finance	(75 person-years)
(3) Agricultural Services	(910 person-years)

(4) Training	(100 person-years)
(5) Cooperative and Credit	(150 person-years)
(6) Planning and Evaluation	(200 person-years)
(7) Schistosomiasis Control	(260 person-years)
C. Farm Inputs	
(1) Fertilizer	(4,150 tons)
(2) Seeds	(367 tons)
(3) Seedlings	(6.35 million)
(4) Equipment and Chemicals	(\$850,000)
(5) Hired Labor	(440,000 person-days)
D. Transportation Support	\$500,000
(1) Vehicles	(63 ea.)
(2) Motorcycles	(94 ea.)
(3) Bicycles	(114 ea.)
E. Infrastructure, except roads (Buildings, wells, etc.)	\$1.16 million
F. Roads construction and maintenance	2.3 million
G. Research and Consultant Services	94 person-months

3.1 Technical Analysis

3.1.1 General

The central focus of this project is the application of improved technology to increase the productivity of crops already being grown by small farmers in the project area, i.e., upland and swamp rice, coffee and cocoa. In each instance the basic technology has been proven; either in Liberia or the neighboring countries of the Ivory Coast or Sierra Leone. It has been shown that the locally developed LAC 23 upland rice variety will provide an average yield increase of 30 percent over traditional varieties when planted and cultivated under identical conditions. However, the economics of the use of fertilizers under shifting cultivation techniques has not been fully verified. Experimentation with fertilizer usage is currently being carried out at both CAES and the Lofa Project and these findings will be available prior to the first year of operation of the Bong Project. It is interesting to note that the Lofa Project is seriously considering adding another parameter to their upland rice program: the development of direct seed exchange program, under which the PMU would produce certified LAC 23 seed to be traded to farmers for an equal amount of paddy. This approach would be introduced on a limited basis in CY 1978, and expanded in subsequent years if demand so warranted.

In the case of swamp rice, coffee and cocoa, the use of improved varieties and cultivation techniques has not been fully tested with small farmers in Liberia. However, smallholder schemes in the adjacent countries of Sierra Leone and the Ivory Coast have significantly improved their yields and income through the adoption of the technological packages proposed for these crops under this project. The project area has basically the same ecological features as the neighboring countries where these crops are grown. The social analysis shows that there are no major social barriers to be overcome.

3.1.2 Feasibility of Technological Packages

A. Upland Rice Production

1. Varieties: For upland rainfed conditions, the well-proven Liberian LAC 23, a variety of medium duration yielding up to 1.8 tons/ha under good managerial conditions is available to farmers to substitute for the local low yielding varieties. Varieties TOS 2581 and 2583 which yield as well as LAC 23, should be useful for late plantings as they mature one to three weeks earlier.

Improved dressed seed will be introduced on cash or credit terms to as many farmers as possible. The seed will be replaced

every fifth year with the most promising variety at that time. Seed will be obtained from the National Seed Association, the same agency from which the Lofa project obtains its seed.

2. Fertilizer: As most of the upland rice is grown under shifting cultivation, intercropped with vegetables and corn, the effect of fertilizer on rice yields under these conditions are not fully known and may be uneconomical. Significant fertilizer response is only expected on farms with suitable soils, where the land will be more permanently cropped, and paddy is grown as a pure stand, within a planned rotation cycle. The provisional fertilizer recommendations, based on urea and triple super phosphate, are 23 Kg N and 46 Kg P₂O₅. However, this recommendation may be modified to conform to observed nutrient levels.

3. Pests and Diseases: Major problems for all types of rice farmers in Liberia are caused by groundhogs (thryonomys swinderianus) and the weaver birds (ploceus cuculeatus). Control measures such as fences around rice fields and bird scarers have only a limited effect. The most serious fungal disease in the project area is blast caused by pyricularia oryzae. Other less important fungal diseases, such as brown spot, leaf scald and sheath blight also occur with higher incidence in late planted rice (August). The present rice breeding program puts emphasis on taking large numbers of varietal intractions and screening them for resistance against these diseases. Serious losses caused by insects seem to occur only sporadically in Liberia. The most important rice pests found in Liberia include: stemborers; mainly maliarpha seperatella and chilio zocconius, diopsis, whorl maggot (hydrellia) and caseworm (nymphula depunctalis), the latter mainly in swamp and irrigated rice. Although insect damage is not regarded as serious, it may become so in swamp development. It is assumed that about 25 percent of the crop will require annual spraying. Foliar insecticide spraying has been included for the swamp development. Until the benefits of crop spraying are properly evaluated, the project will operate a spraying service.

4. Yields: Average upland rice yield is estimated to increase from 1000 to 1300 kg/ha for farmers using improved dressed seed under shifting cultivation. In contrast, rice yields in the more permanently cropped land, using improved seed and fertilizer should increase from 1000 to 1800 kg/ha.

B. Swamp Rice Production

1. Varieties: The recommended variety for general swamp land cultivation is IR 5 which matures in about 145 days and for iron toxic swamp, Gissi 27. Both varieties will be introduced by the project. Although they have yielded under farming conditions between 2 to 4 ton/ha, depending upon the managerial level, they have a number of drawbacks which

must be overcome: IR 5 is susceptible to all major diseases, and Gissi 27 is photo-sensitive, has a long duration, and is susceptible to a number of diseases. In 1974, under trials carried out in Suakoko, 2526 and IR 1416-131-5 proved superior to IR 5 in moderately iron toxic swamps. The latter was also found to be highly resistant to leaf and neck blast. Its superiority over IR 5 was confirmed in 1975. Before these varieties can be released for seed multiplication they must first be proven under farmers' conditions.

2. Fertilizer: Nutrient status of the soils in the bottomlands of the project area is low and plot observations and trials have shown good responses to nitrogen and phosphate.

The provisional recommendations, based on urea and triple superphosphate, are set at about 90 kg N and 40 to 50 kg P₂O₅ per hectare. These recommendations will be adjusted as more information is gained from the simple unreplicated (mini-kit) trials presently being carried out on farmers' fields under the IITA program.

3. Pests and Diseases: In addition to facing the same general pests and diseases as upland rice, swamp rice has the problem of iron toxicity due to the swamp's high iron content, low pH, high organic matter, and poor drainage conditions. High concentrations of ferrous iron reduces phosphorous availability and/or damages the root system limiting nutrient uptake capacity.

Although iron toxicity reduces yields, some varieties, such as Gissi 27 and 2526 are moderately tolerant and should therefore be used in new reclaimed swamps with toxic conditions. Also, burning the rice straw or incorporating it directly and adding lime will alleviate iron toxicity symptoms.

4. Water Control: In Liberia, experiences from the Ministry of Agriculture's "expanded rice projects" and the Agricultural Engineering Section in Suakoko show that effective water control is possible using a low-level, labor-intensive technology. The decisive factors for determining swamp development are catchment, topography and soils. Farmers accepting the proposed technology will cultivate their land in the first year under traditional methods, but will use improved seed. During the first crop season the project's land development unit will carry out simple topographical surveys of the area, make assessments of soils and water levels and its related discharge, and based on these findings, design the technical layout for the swamp's development.

Since most of the proposed swamp development is based on producing only one rainy season rice crop, the layout would emphasize

mainly flood control measures; i.e., a central floodway channel, plus an up-stream flood protection dike to prevent uncontrolled catchment in the fields. Peripheral distribution and secondary drainage channels to secure a more controlled supply and outlet of water would be developed and assistance in bunding and leveling of farm plots would be provided. The areas to be developed may vary in size, but would not exceed 10 ha. Digging, construction of canals, bund making and leveling would be carried out by farmers benefiting from development loans.

5. Yields: These technological improvements should increase average yields from 1400 kg/ha to 3000 kg/ha in the swamps' third development year. For the advanced swamp rice farmers a cropping intensity of 1.75 per annum has been assumed, increasing their yield from 1400 kg/ha to 5250 kg/ha in year four.

C. Coffee and Cocoa Production

1. Present Status:

Coffee: Both Liberica, an indigenous variety, and Robusta coffee are grown on about 14 percent of the agricultural holdings in the project area. The standard of cultivation may be classified as semi-abandoned. Most of the present coffee trees appear to have been planted in the early fifties and were established from mediocre, unselected seed. No attempt is being made to control pests and diseases, of which the most important one is the coffee berry borer (stephanoderes coffeae), which results in a high proportion of defective beans.

Cocoa: Cocoa is planned on about 19 percent of all holdings and is grown as a forest rather than an orchard crop. Most plantings seem to have been established some 20 to 25 years ago, mainly from unselected seed. No disease control has, so far, been attempted. The processing of the crop hardly recognizes the need for fermenting and this coupled with improper drying, results in a poor quality product.

2. Development Program:

No rehabilitation of the present crop is envisaged. Most Robusta coffee trees are past their economic life and are in a state of semi-abandonment. The small amount of better cultivated cocoa orchards are in the hands of a few relatively large farmers who would not participate in the project. Therefore, rehabilitation would be impractical. The development program of coffee and cocoa will therefore consist of new plantings based on the following technology:

- planting of high yielding varieties
- application of appropriate fertilizer
- good field sanitation
- control of pests and diseases
- improvement of processing facilities

The tree crop program will be carried out from six centers. Each center will be the headquarters of a tree crop development zone consisting of about 500 farmers. Participants in each zone would either group together and develop their coffee and cocoa in one block, which would facilitate and make the agricultural supporting services more effective, or would grow their crops on their already-established holdings.

Each center would have a number of production/extension agents who would be supervised by the project's tree crop specialist. Apart from being responsible for the farmers tree crop development program, the staff will operate at each center a demonstration farm for routine variety and fertilizer trials. They will also supervise the production of cocoa and coffee seedlings located at either central nurseries or farmer-owned nurseries. Each zone will have fermenting and drying facilities to help to institutionalize better produce quality measures.

3. Varieties:

Improved planting material currently comes from seed gardens in the Ivory Coast through SATMACI (Societe d'Assistance Technique pour la Modernisation Agricole de la Cote d'Ivoire). The cocoa seed stems either from selected clones including Upper Amazon or is G 1 seed from biconal seed gardens using one Upper Amazon parent X Amelonado or other selections. Coffee seed is poly-cross seed derived from six clones expected to have hybrid properties.

4. Diseases and Pests:

Cocoa: Most damage is caused by mireds or capsids, probably Sahlbergella singularis, which attack both young stem and pods. Heavy shade may reduce the incidence and good control can be maintained by spraying. Another pest is the cocoa "bollworm" (earias biplaga) and is particularly active during the dry season. The most important disease is black pod caused by the fungus phytophthora palmivora; and as a result of this inflection, chemical spraying would be recommended with cuprous oxide.

Coffee: The most serious pest is the coffee berry borer (stephanoderes coffeae) which would be controlled with Bidrin.

5. Soil Selection:

A much neglected factor in the tree crop development in Liberia is the selection of suitable soils, in particular for cocoa which has demanding requirements. Only 9 percent of the total project area is estimated to be suitable for cocoa. Elementary soil checks would be done before allowing tree crop development on individual farm holdings. Farmers would be required to dig 2 or 3 soil pits per hectare, so that at least the soil depth can be assessed. For block development, a more exact identification of the proposed area would be required including a soil survey.

6. Planting and Maintenance:

Cocoa: In the year following the rice harvest and the planting of shade trees, cocoa will be planted with each planting hole receiving a dressing at a rate of 350 kg of rock phosphate per hectare. From year 4 onwards, about 300 kg/hectare NPK (15-15-15) will be applied annually. The main operations until year 5 will be weeding, cleaning, disease control and shade adjustment. The temporary shade crops will be removed in year 3 and 4. By year 5, the cocoa canopy should close and weeds should therefore become a minor problem. During August-December of year 5, the first crop (200 kg/hectare) is expected and a maximum yield of 1,000 kg/hectare would be reached by year 10.

Coffee: Basically, the same practices will be applied to coffee, except for greater emphasis on the pruning of trees. The first harvest is expected in year 4 (300 kg/hectare), with a maximum yield of 1,000 kg/hectare in year 6.

The present recommendations for fertilizer application and disease control are not more than composite averages and may well have to be changed during project implementation as results are drawn from the tree crop research program planned in Suakoko, and from the Lofa Project.

7. Processing:

Cocoa: Proper fermentation is very important to allow the proper chocolate flavor to be produced. Very little fermentation is done in Liberia, resulting in generally lower export prices compared to most other West African cocoas. In order to improve the quality of cocoa, the project introduces fermenting baskets, trays, and boxes to farmers through the various development centers. More emphasis will be placed upon the drying of the fermenting beans. Apart from sun drying on wooden trays, artificial drying will be introduced on a pilot basis at the centers using the Samoan-type dryer, with wood as fuel.

Coffee: Farmers will process coffee mainly by sun drying the cherries. Artificial drying facilities (Samoan dryers) will also be available at the centers. LPMC will hull the dried cherries in Monrovia and later on when project production increases, through new hulling facilities in Gbarnga.

3.1.3 Technical Feasibility of Rural Farm-to-Market Roads

A. General

This element of the project proposes the reconditioning/upgrading of 130 miles of existing or planned roads and the construction of approximately 40 miles of new roads. This work will be carried out over a three and on-half year period starting in early 1979. During a recent study by the MPW, eighty miles of existing road were identified as requiring upgrading and/or reconditioning. In addition, there were also approximately 22 miles of road which though not surveyed due to washouts, etc. probably will require some degree of reconditioning. The Ministry of Local Government also plans the construction of 28 miles of new roads within the project area during the next two years. These are low cost roads being built to minimum standards. Although they will be adequate for the first few years of the project, they will need to be upgraded during the later years of the project to handle increased traffic. A listing of those roads identified for reconditioning, plus those to be built by the MLG is shown on Table III-1.

B. Standards

The MPW has only recently developed a graduated design standard for FTM roads based on existing or expected levels of use. Prior to this time the minimum recognized standard for which the MPW would accept maintenance responsibility was essentially the same as the low secondary road standard, i.e., 20 foot width, 750 foot minimum radius, maximum grade of 10 percent, etc. The new standards in which USAID fully concurs, are shown on Table III-2 and are graduated downward from the old standard on the basis of existing or expected usage. They define four design standards which range from a 15 foot wide road bed designed to handle an ADT of ten vehicles, up to a 20 foot wide road bed designed to handle ADT's in excess of fifty vehicles. The highest of these four new standards is slightly below that of the previously approved standard. Typical cross sections of these four new standards are shown in Table III-3.

C. Costs

Cost data for the types of roads to be constructed or reconditioned are shown in Table III-4. In the past roads of this type were often built on an ad hoc, self-help basis and no cost records were

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maintained. The only good comparison is in eastern Sierra Leone where CARE is constructing roads (largely with low-cost voluntary labor/supervision) which are somewhat comparable to the Class C standard proposed under this project. The cost of these roads has been in the range of \$13,000 per mile.

In order to develop reliable cost data for the roads under this project, the MPW with engineering assistance from REDSO/WA has developed cost estimates using accepted unit cost factors applied to (1) average quantities of earthwork required for each design standard and (2) certain assumptions (based on a field reconnaissance in the project area) regarding the average number and size of drainage structures required per mile. The basic unit costs which were applied were:

1. Clearing and Grubbing \$280 per acre
2. Earthmoving (cut and fill) \$1.60 Yd/cu.
3. Selected Laterite in Place \$1.80 Yd/cu.
4. Corrugated Culverts, 36" dia. \$33.00 per lineal foot

These cost units were applied to each of the four design criteria under the following assumptions:

1. Although the actual size of culverts would range from 24 inches to 60 inches in diameter, the average would be 36 inches.
2. An average of three culverts would be required per mile.
3. The average depth of earthwork for new construction is 18 inches.
4. The average depth of earthwork for upgrading/reconditioning is nine inches.

The application of the accepted unit cost factors to the above assumptions and design criteria result in the following per mile cost estimate for each standard of road:

<u>FTM Road Class</u>	<u>New</u>	<u>Upgrading/Reconditioning</u>
Class A	\$ 20,000	\$12,800
Class B	\$ 17,400	\$10,900
Class C	\$ 16,000	\$ 9,900
Class D	\$ 14,900	\$ 8,800

See Table III-4 for detailed cost calculations.

A determination as to which design standards to be used for any road section will be made prior to any new construction or reconditioning of the road segment. The selected standards will be based on the average daily traffic (ADT) count. Preliminary surveys and traffic studies will be conducted over the next year to arrive at the project ADT. However, after viewing the condition of existing roads in the project area, AID and the MPW agreed that an average of the Class B design would be used as the basis for estimating total project costs. Based on this assumption, total costs are estimated as follows:

- Reconditioning/Upgrading (130 x \$10,900)	= \$1,417,000
- New Construction (40 x \$17,400)	= 696,000
- Four Major Bridges/Drainage Structures	= <u>195,500</u>
Total	\$2,308,500

D. Choice of Construction Technologies

Recent studies of labor versus capital intensive methodology in Liberia by Checchi and Lyon Associates have clearly indicated that the preferred technology for the construction of roads in areas similar to Lofa County is the capital intensive method. USAID experience and knowledge of the Bong County area definitely places this project in that same category, i.e., maximum use of mechanized equipment. The use of this method results in a lower cost per mile.

Equally important, apart from the cost savings from capital intensive methods, is the question of labor supply. Liberia is not an over-populated country. The average population density is 40/square mile in some areas considerably less than the average. In addition to the availability of labor in sufficient quantities, there is the very limited supply of labor when required. The available labor force is intensively occupied from January to May in clearing, planting and other agricultural activities. Seasonal unemployment of men is most prevalent during the rainy season from June to October when construction is minimal or virtually stopped.

E. Method of Construction

The MPW has recommended implementing this program through the force account method of construction. This would be accomplished by the formation of a special unit within the MPW, similar to the one that is constructing roads for the Lofa County IRD Project. The Mission endorses this approach and feels that this method, as opposed to contracting, would be most desirable both in terms of cost and finished project. Mission arguments for this approach are as follows:

1. Liberia's limited contracting capacity is already fully employed on major road projects and will continue to be for the foreseeable future.

2. The wide dispersion of a large number of small roads over the project area does not lend itself to contract type operations and would demand an inordinate amount of overhead.

3. The survey and design requirements required for competitive bidding would greatly increase total project costs.

4. By building the roads itself, the MPW would have no argument later on regarding the acceptance of these roads for routine maintenance.

5. The equipment acquired for construction and reconditioning will be available for post-project maintenance.

These factors, and the favorable performance of the MPW's construction unit in Lofa, present a strong argument for the use of the force account method of construction by the MPW.

The Construction Bureau within the Ministry of Public Works will be responsible for the reconditioning and construction of the farm-to-market roads. The Bureau of Operations will be responsible for reconditioning and upgrading roads and the maintenance operations once the roads are built.

The Construction Bureau, headed by the Assistant Minister, is charged with overall administration of the Bureau. The Assistant Minister, assisted by the Office Coordinator, supervises construction projects headed by the Project engineers. The Bureau, on a force account basis, utilizes the central staff of the Bureau in addition to the Project's field manpower requirements employed on an ad hoc basis only for the duration of the project. The organization chart for the construction units is attached.

The Bureau of Operations is headed by an Assistant Minister who administers several departmental divisions whose functions are related to maintenance. They are the Highway Maintenance Division, Consultant Advisory Services for Road Maintenance, Materials and Control, Mobile Equipment, and eleven Maintenance Districts among which is the Bong County Maintenance District. The farm-to-market road network will be under the jurisdiction of this district.

The Bong County District is headed by a Resident Engineer who is supported by an administrative staff and field personnel numbering 142 in total. The District is subdivided into six (6) sections - Routine

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Maintenance, Drainage, Traffic Signs, Laterite Roads Betterment, Bridge Repair, and Supplies/Equipment Control. The organization chart for the district maintenance unit is attached.

When the farm-to-market roads have been constructed or reconditioned, maintenance operations will commence immediately. The type of maintenance and the frequency of each will include the following:

<u>Maintenance Operation</u>	<u>Frequency of Repetition</u>
a) Repair of local failures	Once per year
b) Grading of Road	Twice per year
c) Clearing of minor structures	Once per year
<u>ROW and Erosion Control</u>	
d) Posting of traffic signs and indicators	Once every two years
e) Repair of structures	Once every four years
f) Reconditioning of entire road to restore to constructed shape and form	Once every five years

At present, Bong County has an annual road maintenance schedule for the existing primary and secondary roads that fall within the district where the new farm-to-market roads are to be built. The present equipment fleet will continue to maintain these roads as programmed in the maintenance schedule. Additional equipment, financed under this loan, will be added to the maintenance operations for the new farm-to-market network. The list of equipment is shown in Table III-5.

F. Equipment Requirements

In order to carry out the construction and reconditioning for this project the MPW will require certain imported equipment and materials which will be financed under this loan:

Construction Equipment (See Table III-5 for Detail Listing)	\$ 816,300
Culverts (See Table III-6 for Specifics)	258,700
Bridging Materials	<u>75,000</u>
Total	\$1,150,000

G. Assignment of Priorities and Budget Preparation/Approval

The roads to be constructed or reconditioned are in direct support of the agricultural activities to be carried out under this project. The assignment of reconditioning priorities and the selection of new roads will be carried out jointly between the BPMU, the County administration, and the MPW. However, final approval will rest with the Project Steering Committee (PSC). The process through which this will occur is briefly described as follows:

1. Prior to the arrival of the construction equipment, the three responsible agencies will develop an annual plan for construction and reconditioning. The three responsible organizations will develop a priority listing of roads to be reconditioned and select those roads which will be constructed during the coming year.

2. This annual plan will be forwarded to the PSC for approval prior to December 31, 1977.

3. On approval of the annual plan, the MPW and the BPMU's evaluation unit will undertake detailed traffic counts to determine the ADT's for these roads. At the same time the MPW will undertake preliminary road location surveys for new roads to be constructed. Based on this data, the PSC will assign the design designations and approve an annual budget for the MPW by applying the above unit costs.

4. Upon approval by the PSC, the annual plan and budget will be submitted to AID for review and approval.

5. The GOL will then be reimbursed quarterly under the FAR technique on the basis of the agreed unit cost factors for the number of miles completed. This process will be repeated annually until all 170 miles of road have been constructed or reconditioned.

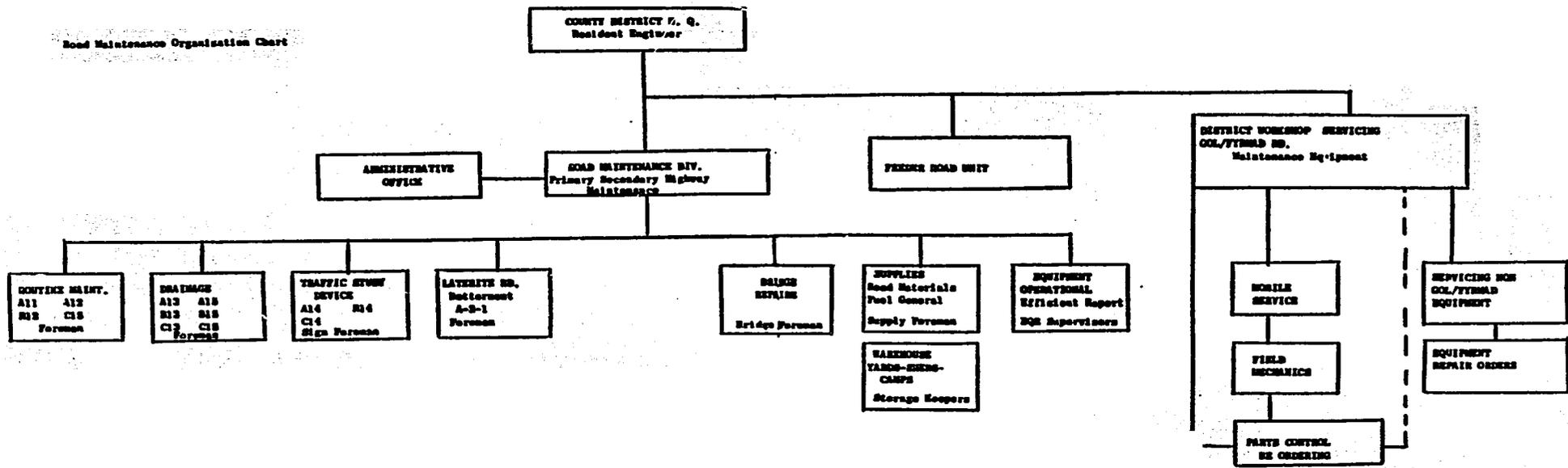
All plans, specifications, cost estimates, budgets, and construction schedules are subject to AID approval, and a CP to this effect is recommended in Section 4.5 of this paper.

The Mission Director has issued the 611 certification based upon conditions precedent that included all items stated in paragraph 3 above.

3.1.4 Buildings

Under the IDA loan, \$542,000 (\$434,000 - IBRD and \$108,000 - GOL) will be provided for the following facilities:

Road Maintenance Organization Chart



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BUREAU OF CONSTRUCTION

ASSISTANT MINISTER
FOR
CONSTRUCTION

GOL/FYRMAD
PROGRAM
COORDINATOR

PLANNING
COORDINATING
ENGINEER

PROCUREMENT

PROJECT ENGINEER

FEEDER
ROAD UNIT

EQUIPMENT, REPAIR
AND MACHINIST

SURVEY CREW

CONSTRUCTION
SUPERINTENDENT

OFFICE MANAGER

OPERATOR

MECHANICS

EARTHWORK

LABORATORY

BRIDGES
AND
DRAINAGE

LABORATORY

ACCOUNTING

TIMEKEEPER

STORE
WAREHOUSE

5A

TABLE III-1

TENTATIVE LISTING OF RURAL ROAD RECONDITIONING AND CONSTRUCTION

I. Reconditioning

A. Existing (Identified)^{1/}

<u>Location</u>	<u>Miles</u>	<u>Condition</u>
1. Belimu - Gamu	4.7	Fair
2. Gamu - Gbanga - Siaguelleh	5.3	Fair
3. Gbanga - Siaguelleh - Jorwal	10.4	Fair
4. Jorwah - Peneta	2.2	Fair
5. Foequelleh - Belskoya	3.7	Fair
6. Belekoya - Yow	4.6	Fair
7. Yow - Farby Town	3.8	Fair
8. Farby Town - Nama	5.4	Fair
9. Gbanshue - Shankpalla	6.4	Poor
10. Bellemu - Howe	7.2	Poor
11. Phebe - Gokai	9.5	Poor
12. Kpopai - Waterfall	5.5	Poor
13. Barolle - Dugulah	3.6	Poor
14. Sanoyea - Gboghotot	<u>7.7</u>	Good
Total	80.0	

B. Existing (Not Identified)^{2/} 22 miles

C. To be constructed by Ministry of Local Government and will require reconditioning and upgrading in 1981 - 1982.

1. Wainsue - Gbarmue	4.0
2. Gbanequelle - Killingkormah	14.0
3. Sanoyea - Gbarnga Nglinta	<u>10.0</u>
	28.0

II. New Construction

A. Recommended by Bong County Administration and subject to BPMU approval (15 miles total length):

1. Bellefanai - Payeta - Tenyea
2. Gbarlatuah - Gbarhmsue - Sulonmah
3. Rock Crusher - Doe Ta - Naputa - Gbecon

B. To be selected by BPMU based on agricultural potential and population density (25 miles)

^{1/} From MPW Feeder Road Study - May 1977

^{2/} Not specifically identified due to inaccessibility caused by poor road conditions.

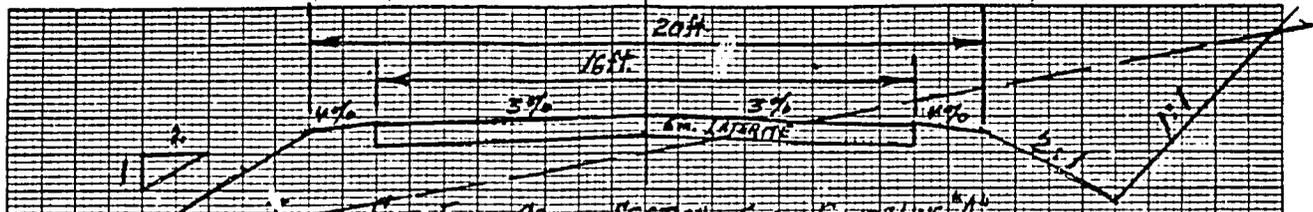
Table III-2

MINISTRY OF PUBLIC WORKS
SUGGESTED FEEDER ROAD DESIGN GUIDELINES

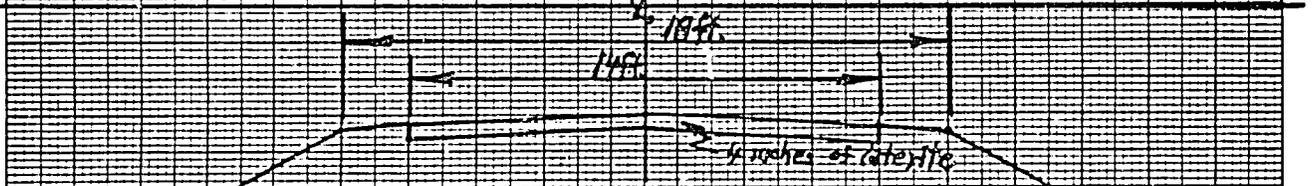
FEEDER ROAD CLASS	A	B	C	D
	Present ADT > 50 Link in Future Secondary Road Network	Present ADT 25 - 50	ADT 10 - 25	ADT < 10
Design Speed	30 mph	25 mph	20 mph	20 mph
Laterite Surface Material	4" - 6" where necessary	4"	Minimum when necessary	If necessary
Road Width	20 ft.	18 ft.	16 ft.	15 ft.
Running Surface	16 ft.	14 ft.	12 ft.	10 ft.
Gradient	10%	12%	14%	Dictated by terrain
R.O.W.	50 ft.	50 ft.	36 ft.	30 ft. or height of tallest tree
Minimum Radius	400 ft.	300 ft.	250 ft.	200 ft.
Drainage	CMP, Box Culverts	CMP, Timber Bridges	CMP, Timber Bridges	CMP, Minor Timber Bridges
Bridge Width	1-lane, 14 ft.	14 ft.	--	--
Bridge Loading	H 15	H 15	--	--

FEEDER ROAD CROSS-SECTIONS IN

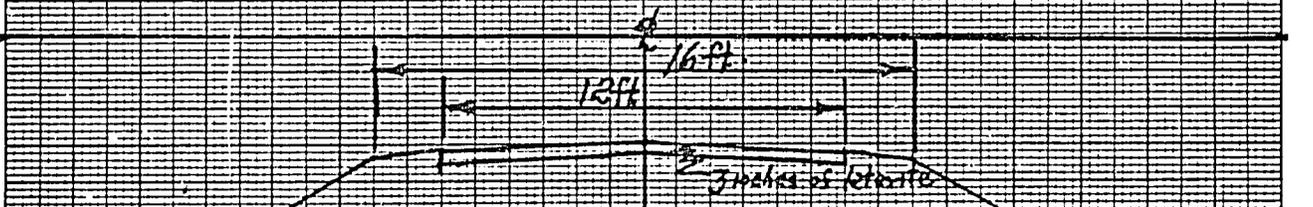
CONFORMANCE WITH DESIGN STANDARDS A-D



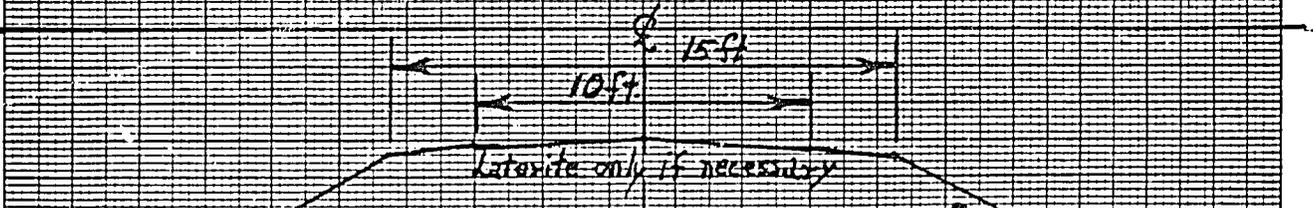
TYPICAL CUT-FILL CROSS-SECTION FOR GUIDELINE "A"
 LATERITE PER MILE = 15,64 c.y.
 Earthmoving " " = 4,900 " for 12" DEPTH Ave.
 " " " = 7,300 " " 18" " " "
 " " " = 10,200 " " 24" " " "
 Assume Ave. of 3 Culverts to install per mile



TYPICAL FILL X-SEC FOR GUIDELINE "B"
 Laterite per mile = 904 c.y.
 Earthmoving " " = 3,900 " for 12" DEPTH Ave.
 " " " = 6,450 " " 18" " " "
 " " " = 9,400 " " 24" " " "
 Assume Ave. of 3 Culverts to install per mile



TYPICAL FILL X-SEC FOR GUIDELINE "C"
 Laterite per mile = 587 c.y.
 Earthmoving " " = 3,500 " for 12" DEPTH Ave.
 " " " = 5,900 " " 18" " " "
 " " " = 8,600 " " 24" " " "
 Assume Ave. of 3 Culverts to install per mile



TYPICAL FILL X-SEC FOR GUIDELINE "D"
 Assume laterite per mile of 250 c.y.
 Earthmoving " " = 3,300 " for 12" DEPTH Ave.
 " " " = 5,600 " " 18" " " "
 " " " = 8,200 " " 24" " " "
 Assume Ave. of 3 Culverts to install per mile

ROAD CONSTRUCTION/RECONDITIONING COST CALCULATIONS (US\$)

1. Drainage structures

<u>Size of Culvert</u>	<u>No.</u>	<u>Length</u>	<u>Total Linear Feet</u>	<u>Price Linear Foot</u>	<u>Total Cost (US\$)</u>
24"	24	34'	816	20.	16,320
30"	8	36'	288	28.	8,064
36"	25	38'	950	33.	31,350
48"	15	40'	600	55.	33,000
60"	10	44'	440	70.	30,800
			<u>3,094</u>		<u>\$119,534</u>

- Average cost per linear foot = $119,534 \div 3,094 = \$38.63$
- Will use 36" CMP for average cost per mile
- $38' \times \$33 = \$1,254 \text{ ea} \times 3 \text{ culverts ea mile} = \$3,762/\text{mi average}$

2. Earthwork

a. Clearing and Grubbing

- (1) New Construction: Average six acres per mile (50' R.W.) @ \$280/acre = \$1,680/mile.
- (2) Reconditioning: Average \$800/mile.

b. Cost of selected laterite in place = \$1.80/CY.

c. Cost of earth moving (cut and fill) in place = \$1.60/CY.

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TABLE III-4 Cont'd

3. Unit Cost Per Mile

a. New Construction

<u>Standard</u>	<u>Drainage</u>	<u>Clearing</u>	<u>Surfacing</u>	<u>Earthwork</u>	<u>Total</u>
A	3,762	1,680	2,815	11,680	20,000
B	3,762	1,680	1,625	10,320	17,400
C	3,762	1,680	1,056	9,440	16,000
D	3,762	1,680	450	8,960	14,900

b. Reconditioning/Upgrading

A	3,762	800	2,815	5,397	12,800
B	3,762	800	1,625	4,693	10,900
C	3,762	800	1,056	4,224	9,900
D	3,762	800	450	3,775	8,800

4. Summary:

a. New construction (40 miles x \$17,400) =	696,000
b. Reconditioning (130 miles x \$10,900) =	1,417,000
c. Three bridges (150' x \$1,225/lf) =	183,750
d. One multi-plate arch (50' x \$235 lf) =	11,750
	<u>\$2,308,500</u>

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EQUIPMENT LIST FOR UPGRADING AND MAINTENANCE OF FEEDER ROAD NETWORK
AS PROPOSED IN THE UPPER BONG COUNTY INTEGRATED RURAL DEVELOPMENT
PROJECT

TABLE III - 5

<u>ITEM No.</u>	<u>DESCRIPTION</u>	<u>No. Req.</u>	<u>Unit (US\$) Cost 1/77</u>	<u>Extension</u>
1.	Bulldozer (CAT D-6 or equal w/ripper)	2	88,000	176,000
2.	Motor Grader (CAT 120G or equal)	2	67,000	134,000
3.	Wheel Loader (CAT 920 or equal)	2	45,000	90,000
4.	Dump trucks	8	25,000	200,000
5.	Backhoe/Loader (John Deere JD 500 or equal)	1	18,000	18,000
6.	Compactor, Pneumatic, self propelled (Hyster 530 or equal)	2	34,000	68,000
7.	Air compressor, 250 CFM	1	15,000	15,000
8.	Tools for air compressor: 2 pavement breakers, 2 rock drills, 2 clay spades, 2 tampers	Lot	6,000	6,000
9.	Water Pump, 4" ϕ Intake	2	3,000	6,000
10.	Water trucks (10 m ³ capacity) w/pump	2	30,800	161,600
11.	Water tanks, Skid-mounted (500 gal.)	2	1,100	2,200
12.	Pickup, Mech - 3/4T, 4x4, w/welder and air compressor	1	15,000	15,000
13.	Pickup truck, 1/2T, 2x4, short wheelbase, no spin diff.	3	6,500	19,500
14.	Tool trailer, locally made, 5-8 ton cap, 4 wheel	2	2,500	5,000
		TOTAL		\$ 816,000

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MATERIAL COST FOR DRAINAGE STRUCTURES
(Delivered to Monrovia)

1. For the 79 miles of Designated Upgrading - See Table

<u>Size of CMP</u>	<u>\$/Linear Foot</u>	<u>Total Required</u>	<u>Extension (US\$)</u>
24"	8.50	816	6,950
30"	12.	288	3,460
36"	16.	950	15,200
48"	26.	600	15,600
60"	31.	440	13,640
Multi Plate 9'x14'	135.	50	<u>6,750</u>
		Sub-Total	\$ 61,600

2. For the additional 51 miles of upgrade and the 40 miles of new construction using an average of 3 - 36" CMP culverts per mile = 91x3x38ft/culvert x\$16/LF = \$166,000 plus \$31,000 for miscellaneous concrete box structures rounds out to \$197,100.

3. Estimated cost of materials for the three bridges is \$75,000.

4. Summary:

(1) \$61,600

(2) 197,000

(3) 75,000

\$333,700

1.9/5

8 - Staff Houses	\$200,000
1 - Training Center	75,000
1 - Motor Pool Building	12,000
1 - Schisto. Laboratory	30,000
30 - Co-op Office/Warehouse	18,000
Office Buildings	172,000
Storage Buildings	30,000

The staff housing, training center and office buildings will be constructed by local contractors with co-op/warehouse being built by self-help.

Plans, specifications and contract bid documents will be prepared by a local A/E firm. Award of construction contracts will be based on competitive bidding procedures. Existing plans from the Lofa Project will be used for the construction of the co-op/warehouses. Since AID is not financing the construction of any of these buildings, we do not see the necessity for prior AID approval of plans or specifications.

There is a sufficient number of local contractors who are interested as well as being qualified to construct these facilities.

3.1.5 Technical Issues

During the preparation and approval of the PRP, several issues were surfaced and related to the technical feasibility of the project. Applying the Lofa project's approach to a largely identical set of issues results in the following responses:

A. Head-carrying problem

The head-carrying problem for input distribution cited in the PRP has also been identified as a potential constraint during the early phases of implementation of the Lofa project. While the problem can not be entirely eliminated, the Lofa PMU finds that the problem can be greatly minimized through a combination of the following actions:

1. The development of small block-type plantation units (ten to twenty farmers) for tree crop development to allow for centralized input delivery, extension service and marketing. One criterion in the establishment of these plantation units will be their proximity to existing or planned roads.

2. Timely delivery of seedlings. There is a period of approximately thirty days during the planting season during which seedlings can be left in shaded areas at point of delivery and gradually moved to the planting sites. This period occurs at a time during the agricultural cycle (July) when adequate labor is available.

3. **Eventual decentralization of tree crop nurseries.**

The Lofa PMU has already entered into discussions with LPMC on the decentralization of tree crop nurseries and LPMC has agreed in principle to the creation of thirty additional nurseries throughout the project area.

4. **Improved transportation of seedlings from the**

nurseries to local distribution points. During the initial project year, the Lofa PMU is renting tractors and farm trailers to assist in the transportation of seedlings. If this plan proves feasible, tractors and trailers will be purchased from funds reserved for this purpose under the IDA loan. A similar reserve is being included for the Bong Project.

B. Storage

During the ECPR review, the adequacy of project storage arrangements was questioned. The planned provisions have been reviewed with the Lofa PMU staff and found adequate, with one exception. The Lofa project has embarked upon a program for the construction of sub-district cooperative offices/warehouses. These are modest structures being constructed by self-help, with minimum assistance from the PMU of imported commodities (cement, roofing, nails, etc.) amounting to \$600 per structure. Local cooperative members are furnishing local materials and labor and the cooperative aids from the PMU have received training and instruction to supervise construction. A number of these buildings are currently under construction in Lofa.

The Lofa PMU staff feels that these small, localized facilities will play a major role in effective input distribution, produce marketings and loan repayment. On the completion of these facilities they will be open for produce buying on the established weekly market day, paying the official prices less onward transportation and handling costs. Produce will be held until a truckload has been accumulated and then moved to the nearest LPMC buying facility. Using this system, the PMU feels that farmers will receive a substantially higher price for their crops than they are currently receiving through the present marketing system. Funds for the construction of sub-district cooperative facilities are included under the IDA loan.

C. Farm Labor Availability

Throughout the development of this paper the question of availability of sufficient labor has been raised. In its analysis, the IBRD determined that there are 2.6 labor equivalents per average farm family, or 600 available person-days per year. Assuming that most farm families give priority to the cultivation of over one hectare of upland rice (250 person-days), a balance of 350 days would remain for cultivation of other crops. When the supply is matched against seasonal demand, there

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are periods from March to June, and to a lesser degree from August to November, when available family labor will be heavily employed. However, when work roles are carefully examined in relationship to the specific crops involved, the only clearly identifiable labor constraint is during the initial stages of swamp development. Likewise, a shortage would probably develop at certain times of the year if farmers were to abandon their upland rice cultivation completely for two of the new crop packages at the same time. However, this is not likely to happen. Both the Lofa and this project are cognizant of these constraints and provisions and/or policies have been developed to address potential labor problems. The first is in the overall approach to swamp development. In the case of Bong, the swamps will be developed in distinct stages over a two to three year period. Lofa is dealing with the problem somewhat differently by limiting farmers to smaller .5 hectare swamp development credit package initially. This was done for the dual purposes of addressing a high demand for program participation in the first year and to assess the true extent of the hypothetical labor constraint.

The Bong project also includes provision for such labor saving devices as power saws and hand winches to assist in swamp clearance activities and it plans to introduce roto-tillers on a trial basis where double cropping is involved. From the supply standpoint, the availability of daily hired labor appears adequate. Given the close proximity of both projects to Guinea, there are reasonable expectations that the existing supply of migrant labor coming across the border will continue, and even increase if demand so warrants. Likewise, the increased local demand for wage labor should slow down, if not stabilize present urban migration patterns.

D. Cooperative Viability

The PRP noted that the post-project success of cooperatives will be linked to the GOL's capacity to provide audit and other supervisory functions. The recently approved Agricultural Cooperative Development Project, No. 669-0127, will strengthen the GOL's capability in this area. It is designed to increase Liberia small farmers' productivity and income through the development of an effectively structured and functioning cooperative system. This national project will coordinate its activities with the Bong and Lofa IRD projects to insure compatibility of accounting audit systems and a smooth transition between project and post-project phases. The cooperative project will:

1. Develop training programs and materials for the Credit and Marketing Division (C&MD) of the MOA and for the cooperatives (employees, boards of directors, managers and members). The training programs will focus on cooperative concepts and programs, member responsibilities, management, administration, recordkeeping and accounting;

2. Initiate a managerial advisory service to assist cooperatives with financial, marketing and capital expenditure issues; and

3. Improve the C&MD audit capability and thus substantially improve the post-project capabilities of the Bong County cooperatives.

Other GOL actions such as the formation of the Agriculture Cooperative Development Band (ACDB), the establishment of a national cooperative federation and the appointment of a Deputy Minister to manage banking and agribusiness further highlight the Government's commitment to assist cooperative growth and development. These actions will contribute to the Bong County cooperatives' viability in the post-project era.

3.1.6 Project Costs

Project costs are estimated at US \$20.3 million including US \$0.2 million of identifiable indirect taxes but excluding all other taxes and duties. The foreign exchange component would be US \$9.8 million or 48 percent of total costs.

	Local	Foreign	Total	% of Total Costs
	-----US\$ 000-----			
<u>Investment Costs</u>				
Buildings, vehicles and equipment	325	1,076	1,401	7
Farm inputs and hired labor	2,034	1,402	3,436	17
Road construction and upgrading	643	1,666	2,309	11
Village wells	50	50	100	-
Research improvements	<u>130</u>	<u>520</u>	<u>650</u>	<u>3</u>
	3,182	4,714	7,896	38
<u>Support Services to Farmers</u>				
Development of banking institution	60	90	150	1
Local Staff	3,849	-	3,849	19
Internationally recruited staff	-	1,575	1,575	8
Vehicles operating costs	738	510	1,248	6
general services	<u>738</u>	<u>510</u>	<u>1,248</u>	<u>6</u>
	4,647	2,175	6,822	34
<u>Technical Assistance</u>				
Consultants for feasibility studies	-	370	370	2
Base line costs	7,829	7,259	15,088	-
<u>Contingencies</u>				
Physical	397	360	757	4
Price	<u>2,330</u>	<u>2,135</u>	<u>4,465</u>	<u>22</u>
Project Cost	10,556	9,754	20,310	100
Percentage	52	48	100	

Estimates are based on prices obtained during appraisal, updated where necessary to reflect baseline costs expected at the end of 1976, and exclude all identifiable import duties on goods imported directly for the project. The present Government policy will exempt these goods from taxes and duties. Physical contingencies comprise 5 percent of baseline costs, and price contingencies allow for compounded cost increases of: (a) vehicles, equipment and farm inputs of 9 percent in 1977, 8 percent per annum 1978 to 1979 and 7 percent 1980 to 1981; (b) buildings, construction materials for roads and village wells of 13 percent in 1977, 12 percent per annum in 1978 to 1979 and 10 percent per annum in 1980 to 1981; (c) salaries, consultants, technical assistance and local costs of 7 percent from 1977 onwards. Analysis of baseline costs show 42 percent for production related investments and 58 percent for Government support services and technical assistance. Total contingencies are equivalent to 25 percent of total costs.

3.1.7 AID and Other Relevant Experience

There are two projects that are particularly relevant to the project being proposed in this PP. They are the IDA sponsored Eastern Area Integrated Agricultural Development Project at Kenema, Sierra Leone, and the jointly funded AID/IDA Integrated Rural Development Project in Upper Lofa County. The Kenema project, now into its fourth year of operation, is immediately adjacent to the western border of Liberia and approximately 100 air miles from the proposed project boundaries. It has been providing improved inputs and technology to small farmers who resemble in many ways those who will be served by this project. Their tribal cultures are generally similar and their shifting cultivation practices are much the same. The agricultural focus of Kenema is somewhat more limited as only swamp rice, cocoa and oil palm are being promoted.

In August 1976, staff from USAID/Liberia and the Lofa County Project Management Unit visited Kenema for the express purpose of gaining information that could be used in projects in both Lofa and Bong Counties. They found the following aspects to be particularly relevant:

1. The simplified methods and techniques developed for use by small farmers in land development and water control for swamp rice cultivation.
2. The system and methods used in the propagation of improved cocoa varieties.
3. The relatively successful systems that have been developed for granting and recovering seasonal credit.
4. The administrative systems that have been developed for coordinating and controlling intermediate term credit for land development.

5. The design standards for rural roads.

The Kenema experience has been thoroughly reviewed by the Lofa PMU and as the result certain pitfalls have been avoided and the more successful elements included in the implementation procedures of the project.

At the time of the PRP there was very little useful information flowing out of the Lofa project that could be applied to the Bong Project. However, since that time the Lofa Project has become operational and is beginning to provide tentative data regarding ways in which the Bong project could benefit from the Lofa experience. Some of the more relevant information includes:

1. Approaches to obtain maximum interaction between farmers and project staff.
2. The importance placed on improved rural water supplies.
3. The positive advantages of providing the PMU with a road maintenance capability.
4. Importance of sub-district cooperative warehouses.
5. Alternative upland rice strategies.

This list is illustrative only and other areas of relevant experience will surface in time to be factored into the detailed operational plans of Bong. The project design of Bong provides various mechanisms for channeling relevant data from Lofa to Bong, such as:

1. The plan to incorporate the Evaluation and Monitoring Sections into a single unit;
2. The expansion of the Lofa County Schistosomiasis Unit to carry out similar surveillance activities in the Bong project area;
3. Making both projects responsible to the same Project Steering Committee;
4. Integration of training activities and facilities.

In addition to the obvious advantages of economics of scale and better utilization of resources, the development of closer linkages between the two projects should result in an information flow that will enhance the chance of success for both projects.

At the time of the Bong PRP Review the Mission was requested to review the past experience with the AID supported Rural Area Development (RAD) project and the Gbedin Rice Project. Both of these projects were initiated in the 1960's. An intensive search of both Mission and GOL records failed to reveal any record that the RAD project ever existed. This fact in itself is a reflection on the lack of success of the project and indicates the need for a better "AID Memory". The Mission had better luck in tracking down information on the Gbedin Project which is still in operation. The objectives of this program were:

1. Encourage swamp rice and discourage upland rice.
2. Develop a pilot development and settlement program for 500 acres of swamp rice and for the resettlement of 250 farmers. A second phase was planned to expand the project to 6,000 acres and 600 farmers.
3. To create a training ground for swamp rice for farmers and extension personnel.

Although this project is still operating, it has been plagued with problems and never expanded to the planned second stage. The following is an illustrative list of the problems encountered.

1. Extreme delays in reimbursing farmers for the sale of rice.
2. Unexpected cash assessments.
3. Machinery breakdowns and unavailability of spare parts.
4. Inadequate fuel supplies.
5. Inadequate facilities for milling and drying rice.
6. A heavy rate of illness among the workers and inadequate medical facilities and housing.
7. Lack of interaction between Chinese advisors and farmers.

Although this project is still being operated by the MA, its economic benefits to both the farmers and the GOL are questionable. There is no evidence to indicate that farmers income has been significantly increased and the project still requires outside support. The spread effect of the project has also been minimal and only 70 farmers are still involved with the project. In many ways this project highlights the problems of large mechanized schemes that attempt to introduce a new technology and resettle people simultaneously. We believe that the Bong Project avoids this pitfall by the development of small swamps located in close proximity to where the farmers are currently residing. The Bong Project also stresses minimal reliance on sophisticated equipment. We also believe that the Bong project has made specific provision to avoid or protect against the seven major problems noted above.

Annex II contains a comprehensive comparative analysis between the Bong Project and certain criteria developed by Development Alternatives Inc. and by Uma Lele of the IBRD for successful rural development. This analysis was prepared by AFR/DR and indicates that, on balance, the Bong Project design minimizes many problems experienced by other rural development projects in Africa. It also points out potential problem areas that will be carefully monitored during project implementation.

3.1.8 Technical Feasibility

The technical feasibility of this project was the subject of a detailed and lengthy feasibility report prepared in 1975 by the firm of Agrar-Und Hydrotechnik of Essen, Germany. Their findings were examined by a joint IBRD/USAID appraisal mission in 1976 and found to be technically feasible. Based on these studies and examinations, plus a subsequent engineering review by REDSO/WA, the Mission finds the technical aspects of this program to be technically sound and in conformance with FAA Section 611, Sub-sections (A) and (B).

3.2 Environmental Assessment

A lengthy (341 page) environmental assessment has been prepared for this project by the firm of Environmental Consultants, Inc. (ECI). This assessment was based on field research conducted by six consultants from ECI and four consultants from the American Public Health Assn. (APHA) during a three month period from February to April, 1977. These consultants conducted an extensive investigation of the project area and collected numerous samples and specimens for laboratory examination upon their return to the U.S. Although there was no overall summary included in the report, it was their general conclusion that the proposed project would not significantly adversely affect the environment of the project area or the surrounding areas. A short illustrative list of statements from the EA supporting this conclusion is as follows:

A. Impact on Rivers and Streams (Page 253)

"The project calls for fertilization and the use of pesticides in upland rice fields and tree crop areas. Application of fertilizer would have the most severe impact by increasing the levels of nitrogen and phosphorus in the area waters due to runoff. By using projected application rates and assuming that 50 percent of the nitrogen and 1 percent of the phosphorus (both figures are well above the expected amounts) would enter the area waters, the impact to water quality can be calculated. Under these conditions, the annual increase at the end of 5 years would be 0.064 ppm for nitrogen and .0007 ppm for phosphorus. These figures indicate only a minor impact to the project area although localized impacts will be far greater.

Conclusions concerning pollution by pesticides are similar. Assuming that 10 percent of the total pesticides applied will enter the area waters, the annual increase in concentration at the end of 5 year is much less than 0.1 ppm. This assumption does not truly reflect the degradation by physical and biological factors but represents the "worst possible" case. In addition, the figure is composite for several pesticides, and since pesticides affect organisms differently, the actual impact will be much less severe."

B. Impact on Forest (Page 252)

"Less than 8 percent of the project area could be considered as true forest land. Although originally covering much of the project area, high forest has been largely replaced by secondary forest, abandoned fields and fallow land. No aspect of the project would have an impact on any of the remaining high forest."

C. Impact on Swamp and Marsh Areas (Page 249)

"Growing swamp rice calls for the use of herbicides and insecticides. These chemicals will cause additional damage to the swamp and its effluent. The pesticides to be used are primarily organophosphates and carbamates with some chlorinated hydrocarbons. The chlorinated hydrocarbons are the most stable of these and present the most severe, long-term impacts. However, careful consideration and use of pesticides can reduce the impact considerably. Their localized use in many small areas spread over the total project area further decreases the severity of total impact. Assuming that 10 percent of the total pesticides applied will enter the area waters, the annual increase in concentrations at the end of 5 years (project length) will be much less than 0.1 ppm (part per million). The assumption of 10 percent entering area waters is extremely generous since degradation mechanisms (both physical and biological) will reduce the amount of residual pesticides very rapidly. In addition, this figure is total pesticides which means that the concentration of any given pesticide will be much less. Since pesticides affect various organisms differently, the impact of pesticides used in the project will be undetectable but probably insignificant."

D. Air Quality - Construction Related Pollutants (Page 245)

"Most of the construction associated with the proposed projects would relate to the clearing and cultivation of land and to the construction of the farm to market roads. Dust produced during the clearing and road construction operations would be annoying and have some short-term effect on the surrounding area; however, no health hazards would be generally created."

E. Sediment Load (Page 242)

"It can be assumed that the maximum increase in suspended sediments in area waters will be of the same magnitude (10-15 percent). With proper mitigation procedures employed, this figure may well be reduced to 5 percent or less. Total suspended solids measured in the St. John River were only 2.0 ppm, thus, this impact on water quality is projected to be insignificant."

The environmental report itself is much too large to be included in this paper in its entirety. However, Annex I contains (1) the proposed mitigations to reduce any adverse affects caused by the project, (2) a discussion of unavoidable adverse impacts, and (3) the consultants recommendations. Mission reaction to these findings and recommendations is as follows:

A. Recommendations

1. Agriculture

a. Recommendation No. 1 (Formalization of Tree Crop Development): This recommendation is positively addressed in Section 3.1.2, Para C.

b. Recommendation No. 2 (Establishment of Job Criteria for Project Instructors): A job description for the Lofa Training Officer is contained in Annex V of the Lofa County IRD Project Paper and will be applied to the Training Officer position for this project. Similarly, job descriptions have also been prepared for other senior training officers in Lofa and will be used as a guide for this project.

c. Recommendation No. 3 (Monitoring of Farmer Education): This will be a part of the project's normal evaluation program, see Annex V.

d. Recommendation No. 4 (Monitoring of Extension Agent Ratio): This will be carried out as a part of routine monitoring and evaluation.

e. Recommendation No. 5 (Flexibility for Double Cropping of Rice): The project does have the flexibility recommended. However, the major constraint in double cropping is year-round availability of water and available family labor.

f. Recommendation No. 6 (Construction of More Permanent Water Impoundment Areas): Mission does not consider this recommendation economically feasible or required. To the best of our knowledge, the consultants did not observe the type of swamp development measures being planned for the project during their field research.

g. Recommendation No. 7 (Quality of Storage Facilities): Storage facilities constructed as a part of this project, sub-district cooperative warehouses, will be constructed of locally made blocks and will have zinc roofs.

h. Recommendation No. 8 (Cattle Production): Limited research on cattle production is currently being carried out at CAES by the FAO.

2. Environmental

a. Recommendation No. 1 (Monitoring of Water Quality): Mission concurs and this was suggested by the Mission in the PRP; will be incorporated within the Schistosomiasis Surveillance Unit.

b. Recommendation No. 2 (Correct Sizing of Road Culverts): This recommendation is nothing more than good engineering practice and will be carried out.

c. Recommendation No. 3 (Restrict Cutting and Clearing of Prime Forests): The only existing government regulations relating to cutting and clearing of forests relate to national forests and commercial logging operations. Regulations of the type suggested would require a lengthy legislative process through the National Assembly, be almost impossible to enforce, and in direct opposition to cultural practices that have existed for centuries. However, the overall strategy of this project seeks to mitigate this problem by the long term shift to permanent cultivation.

3. Health

a. Recommendation No. 1 (Training of Extension Agents in Well Construction): While we concur in substance with this recommendation, the Lofa Project is using a somewhat different approach which will be extended to Bong. It consists of extension agent involvement during the identification and planning, and then a specialized team from the PMU to supervise actual construction.

b. Recommendation No. 2 (Training In Application of Insecticides): The curriculum for both staff and farmer training includes a heavy emphasis on pesticide application. Initially, the PMU plans to operate its own spraying service for which farmers will pay a nominal fee. Actual spraying by farmers will occur only after farmers have been fully trained and have demonstrated their ability to handle pesticides in a safe manner.

c. Recommendation No. 3 (Coordinating Health Efforts): The Mission concurs in substance, but believes this function has already been

designated to the County Health Officer who serves as a member of the Project Consultative Committee which coordinates project activities with other government programs.

4. Social and Cultural

a. Recommendation No. 1 (Coordination of Project Training with Community Programs): Mission concurs in principal and this vehicle for coordination exists in the form of the Project Consultative Committee at the county level.

b. Recommendation No. 2 (Cooperative Training): This has been incorporated into the program, see Section 2.3.7.

c. Recommendation No. 3 (Use of Cooperatives as Non-formal Education Medium): Cooperatives are being considered as one medium of non-formal education under the proposed Rural Learning Delivery Systems Project (669-0134).

5. Economic

a. Recommendation No. 1 (Supervision of Cooperatives): This problem is being addressed by two specific actions: First, this aspect of the project will be routinely monitored by the project evaluation unit. Secondly, the PMU cooperative officer is also designated as the Assistant Registrar for Cooperatives and will conduct routine audits of cooperative accounts.

b. Recommendation No. 2 (Establishment of Banking Facilities) Provision of banking services has been included in this project, see Annex III.

c. Recommendation No. 3 (Establishment of Price Stabilization System for Cash Crops): This is currently being done already by the LPMC, who is sole authorized purchaser of cash crops.

d. Recommendation No. 4 (Monitoring of Loan Recoveries): Covered under proposed loan covenants (see Section 4.5.2).

6. Project

a. Recommendation No. 1 (Training of Project Personnel): All provisions of this recommendation have been incorporated within the project already.

b. Recommendation No. 2 (Screening and Indoctrination of Farmers): The Mission cannot concur with this recommendation as it would

result in the automatic selection of the most progressive farmers, and not necessarily the farmers which this project seeks to assist.

B. Proposed Mitigations

1. Air Quality Control: Mission concurs with State 138293 (Annex XV) which stated that project related impacts were negligible.

2. Water Quality: As stated in Monrovia 4412, Director of Schistosomiasis Unit plans to monitor village water sources as part of on-going schistosomiasis surveillance activities to determine effect of improved water sources on reduction of water-borne diseases. He is also willing to undertake collection of water samples to check chemical residues, but prefers shipping samples to U.S. for analysis.

3. Chemical Exposure: GOL, and particularly the Lofa PMU staff are extremely sensitive to possible adverse effects of misuse of agricultural chemicals. In case of Lofa, the project is attempting to minimize use of chemicals and have taken steps to import cocoa stock from the United Kingdom that is resistant to "black pod". However, until this new variety is tested, the project must continue to use chemicals against this disease. As noted in Recommendation No. 2 (Health) above, training is being incorporated at staff and farmer level and PMU will operate spraying services until farmers demonstrate ability to handle agricultural chemicals. Funds have been provided for protective clothing and equipment.

4. Public Health: Monrovia 4493 stated Mission concerns regarding the incorporation of malaria control into this project as follows:

"1. Mission has strong reservations regarding recommendation in Para 2, reftel, suggesting that malaria surveillance and control be incorporated into subject project. In addition to fact that malaria problem in West Africa in context best addressed by multi-national regional program, other shortcomings of suggested approach as follows:

a. Studies indicate that over 80 percent of all rural Liberians infected with malaria. Given this high rate of incidence, question value of additional surveillance.

b. EA states that development of swamp rice will increase mosquito larvae. However, neither Mission or responsible GOL officials believe this to be the case. Development of swamp rice irrigation systems will have overall effect of improving drainage of existing swamps.

c. Mission questions advisability of attempting malaria control in the context of this limited up-country area project populated by both project participants and non-participants. We believe this would

make both surveillance and control highly unreliable. Also, given known control methods, believe nothing short of country-wide program would be effective or economically viable. Project area is defined by arbitrary administrative lines including international borders with Guinea.

d. Mission further questions advisability of attempting to address malaria problem within the context of a project that is primarily agricultural. Believe effective control program would need stronger organizational linkages to Ministry of Health, WHO, etc., than organization of subject project can provide. In summary, GOL and Mission agree completely with need for more effective control of malaria, but do not believe subject project is the proper mechanism for launching an effective program.

2. Have discussed malaria problem per instructions Para 2, ref tel. GOL would prefer multi-national regional approach to malaria control and suggests a possible AID/WHO joint effort. If this is not feasible, then an acceptable interim project would be a program to control malaria in the population centers of the country, notably the secondary cities in the rural areas. There is no repeat no interest in malaria surveillance or surveys of any sort unless coupled with treatment or prophylaxis.

3. The Schistosomiasis Unit report on Lofa County has determined that multiple parasitism is the most prevalent condition among agricultural populations. Lessons learned in Brazil and elsewhere indicate that treatment programs without public health education, safe water and human waste disposal facilities are not effective. Perennial problem is finding an authoritative national agency to implement a water and sanitation project. CARTER"

5. Soils: As noted in Monrovia 4412, Lofa Project already implementing project for ground cover on upland soils. Crops to be tested initially include purraria and wing beans. Likewise, overall development of upland and tree crops being directed by experienced officers who are extremely conscious of potential soil erosion problems on fragile tropical soils. It should also be noted that the proposed staffing for the Bong Project provides sizeable staff for land development activities (Table IV-2).

The Mission feels it was unfortunate that the environmental consultants were unable to visit Lofa Project while they were conducting their field research. Regrettably, it was impossible to make suitable arrangements for the consultants to visit the project. Had they been able to observe operation of the Lofa Project, we believe that many of the proposed mitigations and recommendations would have been eliminated since many of their concerns are addressed by the on-going Lofa Project and will be incorporated into the Bong Project.

3.3 Financial Analysis and Plan

3.3.1 Financial Rate of Return/Viability

Most of the 19,000 farm families in the project area are in the rural poor target group. It is estimated that approximately 9,000 of them will participate in the project and adopt the improved technological packages. Crop budgets showing net returns per ha and per person-day resulting from project-induced technology provide a more meaningful indication of benefits accruing from the proposed innovations and are summarized below.^{1/} Assuming that an average farm presently produces about 1 ha of upland rice, 0.25 ha of coffee and/or cocoa and 0.5 ha of other crops (mainly cassava), the average per farm income is about US \$360 (equivalent to US \$68 per capita). Net average family income at full development for a project farmer, assuming a participant on average will grow 1 ha of swamp rice together with some upland rice or improved upland rice together with 0.25 ha of coffee or cocoa, would be about US \$850 in constant 1976 terms (equivalent to US \$160 per capita). Depending on the crop combination individual farmers would adopt, it is therefore estimated that the average farm income for the participating families would be at least twice as high as their present income. Apart from the direct benefits, indirect benefits from infrastructural and institutional improvements would accrue to all project area farmers.

1/ Net return at full development after debt servicing

	<u>Traditional</u>		<u>Project</u>		<u>Increment</u>	
	\$/ha	\$/person-day	\$/ha	\$/person-day	\$/ha	\$/person-day
Cocoa	153	4.1	468	4.8	315	0.7
Coffee	191	3.8	855	4.2	664	0.4
Rainfed & Swamp	350	1.5	546	2.1	196	0.6
Irrigated Swamp	-	-	733	1.9	-	-
Improved Upland	235	1.7	298	2.1	63	0.4
Advanced Upland	235	1.7	386	1.9	151	0.2

Detailed crop budgets showing net returns per hectare and per person-day are included in Tables III-7 through III-11. In order to highlight the various requirements for labor and the resulting returns, cash flow farm budgets have been prepared for the following five models:

Model #1: 1 hectare of improved upland rice
.75 hectares of coffee

Model #2: 1 hectare of improved upland rice
.75 hectares of cocoa

Model #3: 1 hectare of improved upland rice
1 hectare of improved swamp rice

Model #4: 1 hectare of semi-improved upland rice
1 hectare of advanced swamp rice

Model #5: 1 hectare of semi-improved upland rice
.5 hectares of coffee
.5 hectares of improved swamp rice

The results of this analysis are shown in Table III-12 and indicates that:

A. Average net returns per day for the first ten years exceed the going agricultural wage rate by 43 percent.

B. After all repayment of development loans, the latest being in the twelfth year, average net returns per day increased by 76 percent of the daily agricultural wage.

C. An average of the same five models indicates that during the first ten years the net family income increases 99 percent, from \$360 to \$717 (constant dollars).

D. After repayment of development loans, the average net family income increases to \$908. This is an increase of 152 percent.

The returns should be considered as conservative as they do not include non-rice food production for family use, on farm (non-crop) capital formation, or remittances from other sectors.

3.3.2 Financial Issues

A. Free Seedlings and Labor Payments

At the time of the development of the PRP it was discovered that the GOL was providing free seedlings for coffee and cocoa, plus monthly labor payments, to farmers participating in a "Special Development Project" within the project area. During the GOL/IBRD loan negotiations in December 1976, this was raised as an issue by the IBRD and the GOL subsequently agreed to suspend this practice effective September 30, 1977. From that date on, all inputs and credit provided in the project area will be provided on the same terms as those provided under this project (See Annex III, "Agreements Reached During GOL/IBRD Loan Negotiations").

B. Revolving Credit Fund

During the preparation of the PRP, USAID/Liberia questioned the ability of the revolving credit fund to meet project requirements at two specific points in time (at the end of Year 1 and between Years 5 and 7). An analysis of the revolving fund had been prepared by the IBRD and is included as Table III-13. However, at the time of our analysis USAID lacked the detailed back-up data from which the IBRD analysis was developed. Subsequent to the PRP, discussions were held with the IBRD Financial Analyst who prepared Table III-13 which revealed that our preliminary findings were incorrect, i.e., based upon insufficient information and/or incorrect assumptions regarding loan reflows and the timing of specific outlays for required inputs. USAID is now satisfied that the IBRD analysis is correct and that the fund will be adequate if the loan repayment loss factor does not exceed five percent. To insure that the fund does not decapitalize, the AID loan agreement will provide for annual audits of the revolving fund and adjustments in the loan interest rates based on the loss experience rate.

C. Economic Effect of Using Bananas as Shading Material for Tree Crops.

The PRP raised an issue regarding the economic effect of using bananas as shading material for coffee and cocoa. Since that time, we have discussed this issue with the senior staff of the Lofa County IRD Project to learn their plans for shading material. They felt that the use of bananas would not create major problems because:

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1. A large amount of new coffee and cocoa plantings in Lofa will be done on land that had already been cleared for rice farming four to six years ago and which has secondary growth between 10' to 12' high. When planting new seedlings, sufficient growth would be retained to provide the required shading and gradually cleared away as required.

2. There are insufficient supplies of banana suckers to rely on bananas as a primary source of shading. The Lofa Project plans to rely more heavily on tree cassava and gliricida as their primary shading material and expects to establish a system of small nurseries.

Therefore, based on the Lofa pattern, bananas would not represent more than 25 percent of the shading material used in tree crop production and the volume of production resulting from the project would not cause a major depression in the price of bananas.

D. Technical Package and Farm Budgets

The ECPR review questioned some elements of the technical package and whether farm budgets would demonstrate its feasibility. The appropriateness of the technical package has been addressed in the Technical Analysis (Section 3.1.2). Farm budgets for five possible models were developed and included in Section 3.3.1 and clearly demonstrate the economic feasibility of the packages being proposed.

E. Banking Facilities

At the time of the GOL/IBRD loan negotiations it was agreed that the LBDI would construct and operate a banking facility in Gbarnga, similar to the one that opened in Voinjama in April 1977 (See Annex III). This facility will provide a full range of banking services and manage the revolving credit fund. Funding of \$150,000 is being provided under the IDA loan to assist in the development of this bank.

F. Institutionalization of Credit

At the time of the GOL/IBRD loan negotiations (see Annex III), it was agreed that the GOL would develop a proposal for the establishment of an agricultural credit system by June 30, 1977 for review by the bank and that an implementation plan would be presented to the Bank for approval by December 30, 1977. The AID loan agreement will contain wording to give AID consultative rights equal to the IBRD's.

3.3.3 Recurrent Budget Analysis

Table III-14 indicates an average recurrent post-project

budget of approximately \$2.0 million a year. Of this total, approximately \$850,000 is the estimated value of farm-family labor and an average of \$700,000 is for farm inputs which will be financed from the project's revolving credit fund. This leaves a balance of approximately \$450,000 for continued agricultural support services which would be recurrent costs to the Ministry of Agriculture.

Section 4.1.3 contains a discussion of the effect of this recurrent cost on the Ministry of Agriculture's total budget. It was concluded that the recurrent costs for this project would approximate 3 percent of the Ministry's budget in 1981. This appears reasonable, since the project will be serving approximately 6 percent of the total farm families in Liberia.

Table III-14 neglected to include the recurrent cost for the annual maintenance of roads to be constructed or upgraded under this project. We estimate that this cost would approximate \$150,000 per annum or 3 percent of the GOL contribution to MPW's annual maintenance budget in 1976 (see Table III-15). However, the GOL's contribution for annual maintenance increased 267 percent over a two year period from 1974 to 1976. Were this trend to continue even at 50 percent of that rate, the recurrent maintenance costs of this project would be less than 1 percent of the GOL's portion of the maintenance budget in 1981.

3.3.4 Financial Plan

A. General

Total cost of the project is estimated at US \$20.3 million, net of all identifiable taxes and duties, and including US \$5.2 million for physical and price contingencies. Foreign exchange costs are estimated at US \$9.7 million, i.e., 48 percent of total costs. IDA would contribute US \$7.0 million, AID US \$6.6 million and GOL US \$6.7 million which are 34.5 percent, 32.5 percent and 33 percent, respectively, of the total project costs. The proposed IDA credit would finance 55 percent of total foreign exchange costs and 15 percent of local costs. The IDA credit would be on standard terms and the AID loan would be for 40 years, including a 10 year grace period, repayable in 30 equal annual installments, with interest at 2 percent during the grace period and at 3 percent thereafter.

IDA credit of US \$7.0 million would be disbursed over a five year period and would cover (a) 90 percent of expenditures for the purchase of vehicles and equipment (US \$1.4 million), (b) 80 percent of the cost of civil works (US \$0.4 million), (c) 100 percent of foreign expenditures for internationally recruited staff (US \$1.6 million), (d) 20 percent of expenditures for local staff excluding those financed by AID (US \$0.6 million), (e) 70 percent of expenditures for vehicles'

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operating costs, general services costs, construction of village wells and development of banking facilities (US \$1.0 million), (f) 100 percent of expenditures for consultants and studies (US \$0.4 million), and an unallocated amount of US \$1.6 million to physical and price contingencies.

The AID loan of US \$6.6 million would be disbursed during the same period to cover (a) 75 percent of local salaries of the Cooperative/Credit Services Division (\$0.4 million), (b) 75 percent of expenditures for farm inputs (\$2.1 million) and feeder road development (US \$2.3 million), and (c) an unallocated amount of US \$1.8 million to cover physical and price contingencies.

The GOL's contribution of \$6.7 million covers (a) 73 percent of local salaries (\$2.8 million), (b) 100 percent of hired farm labor (\$.7 million), (c) 25 percent of farm input costs (\$.7 million), (d) \$.7 million for miscellaneous operating costs, and an unallocated amount of \$1.8 million for price and physical contingencies.

B. Donor Attribution

As the result of AID/W recommendations at the time of the draft PRP review, subsequent negotiations with the IBRD on this subject focused on:

1. Separate financing of discrete project components, where possible, so as to minimize confusion/conflict resulting from differences in the administrative regulations of the donors;
2. Donor financing of those specific components where a donor has comparative advantage and/or expertise.

The application of these criteria has resulted in preliminary agreement between the two donors to apportion their contribution as follows:

1. AID

a. Rural Roads: It has been agreed that AID should finance the rural road component in view of (1) the existing in-house engineering capability in USAID/Liberia and (2) its present involvement in Road Maintenance Loans (020/023) and the proposed Rural Road Loan III. It was felt that by placing this responsibility with AID, it would (1) insure a higher degree of overall coordination of all rural road operations within the country, (2) lessen the equipment maintenance problems of MPW by preventing a proliferation of makes and models of construction equipment, and (3) insure better on-site engineering supervision by the responsible donor.

b. Agricultural inputs: AID was selected for the provision of agricultural inputs due to its established record of providing quality inputs at competitive prices. Furthermore, by being the sole funding source, AID can insure that only chemicals approved by EPA will be utilized.

c. Local Cooperative Salaries: Approximately 75 percent of project local salary costs will be covered from GOL contributions, primarily for those activities that will require continued GOL financial support after the loan funding period. AID and IBRD will contribute to activities which will not require funding after the loan period, i.e., road construction, or activities where the continued funding requirements will be covered by operating revenues, i.e., cooperatives. Since USAID/Liberia is currently developing a program to work with cooperative development at the national level, it was felt that AID would be the most logical source to finance the donor contribution.

2. IBRD

The agreed distribution of the IBRD loan would cover 55 percent of total foreign exchange costs and 15 percent of the total local costs. This includes:

- a. The acquisition of all project vehicles except those provided for the road construction and maintenance units.
- b. All internationally recruited technical assistance staff.
- c. Construction of buildings and facilities.
- d. Costs for consultants and an additional feasibility study.

C. Contingencies and Cost Estimates

1. Project costs are based on prices as of June 1, 1976 and exclude all identifiable taxes and duties. Physical contingencies amounting to \$0.8 million comprise 5 percent of baseline costs and price contingencies allow for compounded increases in costs of: (a) vehicles, equipment and farm inputs of 13 percent in 1977, 8 percent per annum 1978 to 1979 and 7 percent 1980 to 1981; (b) buildings, construction materials, roads and village wells of 20 percent in 1977, 12 percent per annum in 1978 to 1979 and 10 percent 1980 to 1981; (c) salaries, consultants, technical assistance and local costs of 11 percent in 1977 and 7 percent per annum in 1978 to 1981. Analysis of baseline costs show 42 percent for production related investments and 5 percent for Government support services and technical assistance. Contingencies are equivalent to 26 percent of total costs.

2. The contingencies being proposed under this loan were computed by the Financial Analysis Section of the IBRD and are based on a world-wide experience factor that is constantly being reviewed and updated to reflect current economic conditions. Although an overall contingency factor of 26 percent seems high, recent experience with other AID projects in Liberia would indicate that the IBRD contingency estimate is reasonable.

D. Retroactive Financing

In order to reduce the project's start-up time, the IBRD has provided \$500,000 of their contribution for expenses incurred prior to the time the project is declared effective. These funds would be used to cover the construction of eight residential houses, recruitment of key staff, office space, vehicles and initial operating expenses. No AID funds will be utilized in this manner.

E. Relationship of Financial Plan to Post-Project Self-Reliance

An attempt has been made to structure the design and input of the donor contributions to insure that the GOL and other indigenous supporting organizations will be able to maintain and support Project operations after the termination of outside support. The key factors and assumptions regarding post-project self-reliance are:

1. Cooperatives will become financially self-supporting by the end of the loan period and that their revenues from commissions on inputs, credit, and marketing will support continued growth.
2. The revolving credit fund will have sufficient capital to provide for the continuing credit needs of the 9,000 participating farmers and still allow for continued growth, albeit, at a slower rate than during the loan period.
3. Commissions from input procurement and distribution will be sufficient to cover LPMC's services costs.
4. The two major remaining areas requiring continued GOL financial support are the extension/land development service and road maintenance. They will require a continuing annual expenditure of \$750,000 and \$172,800 respectively in order to maintain existing levels of service. The building of these items of expenditure into the GOL budget from the inception of the project should insure that they will be continued after the life of the project. This factor and a growing Ministry of Agriculture budget provide a reasonable degree of assurance of adequate future funding by the GOL. Commitments will be obtained from the GOL during loan negotiations permitting the monitoring of these important assumptions and providing for corrective action when required. The following financial tables convey details of total project cost and project financing.

LIBERIA
BONG COUNTY RURAL DEVELOPMENT PROJECT
One Hectare Farm Budget
Upland Rice

(PHYSICAL)	<u>Unit</u>	<u>Traditional</u> Year 0	<u>Semi-Improved</u> Year 1	<u>Improved</u> Year 1 Year 2-5		
<u>OUTPUT</u>						
Yield of paddy	kg	1,000	1,300	1,600	1,800	
<u>INPUT Labor:</u>						
Land clearing/preparation	mandays	45	45	70		
Planting/fertilizing	"	15	15	20		
Weeding/fencing	"	30	30	50		
Bird Scaring	"	15	15	20		
Harvesting/Thrashing	"	15	40	45	50	
<u>Total Labor</u>		<u>140</u>	<u>145</u>	<u>105</u>	<u>210</u>	
<u>Crop Inputs:</u>						
Seed	kg	35	50	50	50	
Fertilizer:urea	kg	---	---	100	100	
Triple Super phosphata	kg	---	---	50	50	
Tools	N/A	---	---	---	---	
<u>(FINANCIAL)</u>						
	Price	Year 1	US \$ Year 1	Year 1	Yr.2-4	Yr.5
<u>INCOME</u>						
Sale of paddy	25¢/kg	250	325	400	450	450
<u>EXPENDITURE</u>						
Seed	25¢/kg	9			13	
	38¢/kg		19	19		19
Fertilizer	27¢/kg			27	27	27
	24¢/kg			12	12	11
Tools		6	6	14	---	---
Interest 10%			2	7	5	6
Net return per ha		235	298	321	393	386
Net return per manday		1.68	2.06	1.57	1.87	1.84

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TABLE III-8

LIBERIA
BONG COUNTY RURAL DEVELOPMENT PROJECT
 One ha Farm Budget and Cash Flow
 Improved Swamp Rice (Cropping Intensity = 100%)

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>	<u>Year 7</u>	<u>Year 8</u>	<u>Year 9</u>
	1600	2500	3000	3000	3000	3000	3000	3000	3000
	-----US\$-----								
Yield of paddy Rice									
Source of Funds									
Value of Paddy at 25¢/kg	400	625	750	750	750	750	750	750	750
Development loan (infrastructure)	20	400	-	-	-	-	-	-	-
(cultivation)	-	165	-	-	165	-	-	165	-
Seasonal Loan	19	92	107	107	111	107	107	111	107
Total	<u>439</u>	<u>1282</u>	<u>857</u>	<u>857</u>	<u>1026</u>	<u>857</u>	<u>857</u>	<u>1026</u>	<u>857</u>
Application of Funds									
Development Cost (infrastructure)	20	398	-	-	-	-	-	-	-
Development Cost (cultivation) ^{1/}	-	165	-	-	165	-	-	165	-
Seasonal Inputs	16	107	120	120	111	120	120	111	120
Debt Service									
Development infrastructure ^{2/}	-	-	102	102	102	102	102	102	-
Development cultivation ^{3/}	-	-	73	73	73	73	73	73	73
Seasonal ^{4/}	21	101	118	118	122	118	118	122	118
Total	<u>60</u>	<u>771</u>	<u>413</u>	<u>413</u>	<u>573</u>	<u>413</u>	<u>413</u>	<u>573</u>	<u>311</u>
Net Return	379	511	444	444	453	444	444	453	546
Family Labor (mandays)	241	321	264	264	264	264	264	264	264
Net return per manday	1.57	1.59	1.68	1.68	1.71	1.68	1.68	1.71	2.07

1/ Funds have been provided for threshing equipment, but may not be required as demand is uncertain.

2/ Loan for 8 years including a two-year grace at 10% interest.

3/ Loan for 4 years at 10% interest.

4/ Repayment at 10% interest.

LIBERIA
BONG COUNTY RURAL DEVELOPMENT PROJECT
One Hectare Farm Budget & Cash Flow
Cocoa

Table III-10

SOURCE OF FUNDS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14
	US DOLLARS													
Cocoa	-	-	-	-	173	245	368	490	552	613	613	613	613	613
Rice	325	-	-	-	-	-	-	-	-	613	613	613	613	613
Other Crops	-	300	300	-	-	-	-	-	-	-	-	-	-	-
Development Loan	106	264	28	66	195	126	-	-	-	-	-	-	-	-
Seasonal Loan	19	-	-	-	-	-	96	131	96	96	131	96	96	131
Total	450	564	328	66	318	371	464	621	648	709	744	709	709	744
APPLICATION OF FUNDS														
Development Cost	106.00	263.88	27.04	65.80	195.10	126.22	-	-	-	-	-	-	-	-
Seasonal Cost	19.00	-	-	-	-	-	96.22	131.22	96.22	96.22	131.22	96.22	96.22	131.22
Debt Service	-	-	-	-	48.96	170.90	183.83	214.31	255.42	191.68	178.75	148.27	58.20	-
Development Loan ^{1/}	-	-	-	-	-	-	105.60	144.10	105.60	105.60	144.10	105.60	105.60	144.10
Seasonal Loan ^{2/}	20.90	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	145.90	263.88	27.04	65.80	244.06	297.12	385.15	489.63	457.24	393.50	454.07	350.09	260.02	275.32
Net Return	304.10	300.12	300.96	0.20	73.94	73.88	78.85	131.37	190.76	315.50	289.93	358.91	448.98	468.68
Family Labor (mandays)	220	164	82	71	59	58	68	78	86	97	97	97	97	97
Net Return per Manday	1.36	1.83	3.67	-	1.25	1.27	1.16	1.68	3.22	3.25	2.99	3.70	4.63	4.83

^{1/} Loan for 8 years with 4 years of grace at 10% interest.
(at negotiations it was agreed for both cocoa and coffee that loans would be repaid over 12 years)
^{2/} Repayment at 10% interest.

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Table III-11

LIBERIA
BONG COUNTY RURAL DEVELOPMENT PROJECT
One Hectare Farm Budget and Cash Flow
Coffee

	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10	YR 11	YR 12
-----US DOLLARS-----												
SOURCE OF FUNDS												
Coffee (clean)				287	785	956	956	956	956	956	956	956
Paddy Rice	325											
Other Crops		300	300									
Development Loan	108	320	70	102								
Seasonal Loans	19				108	91	91	108	91	91	108	91
Total	450	620	370	389	873	1047	1047	1064	1047	1047	1064	1047
APPLICATION OF FUNDS												
Development Cost	106.00	319.08	67.72	101.90	-	-	-	-	-	-	-	-
Seasonal Inputs	19.00	-	-	-	108.20	91.20	91.20	108.20	91.20	91.20	108.20	91.20
Debt Service:												
Development loan ^{1/}	-	-	-	-	48.96	196.76	229.09	276.30	227.24	79.44	47.11	-
Seasonal Development ^{2/}	20.90	-	-	-	118.80	100.10	100.10	118.80	110.10	100.10	118.80	100.10
Total	145.90	319.08	67.72	101.90	275.96	388.06	420.39	503.20	418.54	270.74	274.11	191.30
Net Return	304.10	300.92	302.28	278.10	597.04	658.94	626.61	560.80	628.46	776.26	789.89	855.70
Family Labor (mandays)	220	164	89	115	150	204	204	204	204	204	204	204
Net Return per Manday	1.38	1.83	3.40	2.50	3.98	3.23	3.07	2.75	3.08	3.81	3.87	4.19

^{1/} Loan for 8 years, with 4 years of grace at 10% interest. (At negotiations it was agreed for both coffee and cacao that loans would be repaid over 12 years)
^{2/} Repayment at 10% interest.

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TABLE III-12

CASH FLOW FARM BUDGET & LABOR ANALYSIS

Years	(A) <u>FAMILY LABOR REQUIRED</u> (MAN DAY)							(B) <u>NET RETURN PER PERSON DAY</u> (DOLLARS)						
	1	2	3	4	5	10	12/30	1	2	3	4	5	10	12/30
Model 1	306	333	277	296	323	363	312	1.79	1.86	2.23	2.05	2.58	2.68	2.85
Model 2	306	333	272	265	254	283	307	1.79	1.86	2.28	1.48	1.74	2.47	2.45
Model 3	375	436	474	474	474	474	484	1.86	1.84	1.72	1.77	1.77	1.75	1.98
Model 4	320	371	463	527	527	527	431	2.11	2.15	1.85	1.74	1.55	1.79	1.95
Model 5	300	340	322	333	352	379	398	1.62	1.62	1.60	1.53	2.10	2.12	2.23

Model	(C) <u>NET RECEIPTS</u> (DOLLARS)						
	1	2	3	4	5	10	12/30
Model 1	549	618	619	608	834	975	1034
Model 2	549	618	619	393	442	629	693
Model 3	700	804	817	837	839	832	939
Model 4	677	799	861	920	820	943	1031
Model 5	487	551	518	511	710	806	846

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Illustrative Revolving Credit Fund

(US\$'000)

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>	<u>Year 7</u>	<u>Year 8</u>	<u>Year 9</u>	<u>Year 10</u>
<u>Cash Inflow</u>										
<u>Repayments</u>										
Development Loans	-	-	64.3	179.9	314.1	515.5	686.0	893.0	1,042.0	1,011.4
Seasonal Loans	28.4	102.7	189.9	255.5	291.9	480.6	552.3	672.0	761.5	847.1
Subtotal	28.4	102.7	254.2	435.4	606.0	996.1	1,238.3	1,565.0	1,803.5	1,858.5
Less: Bad Debts (5%)	1.4	5.1	12.7	21.8	30.3	49.8	61.9	78.2	90.2	92.9
Net Repayments	27.0	97.6	241.5	413.6	575.7	946.3	1,176.4	1,486.8	1,813.3	1,765.6
<u>Project Disbursement</u>										
Development Loans	47.8	236.6	518.7	822.9	876.9	-	-	-	-	-
Seasonal Loans - Incremental	26.5	69.5	81.5	61.3	34.0	-	-	-	-	-
Subtotal	74.3	306.1	600.2	884.2	910.9	-	-	-	-	-
Total Cash Inflow	101.3	403.7	841.7	1,297.8	1,486.6	946.3	1,176.4	1,486.8	1,813.3	1,765.6
<u>Cash Outflow</u>										
Development Loans	47.8	236.6	518.7	822.9	876.9	453.3	499.2	461.2	225.0	99.0
Seasonal Loans	26.5	96.0	177.5	238.8	272.8	449.2	516.2	628.0	711.7	791.7
Subtotal	74.3	332.6	696.2	1,061.7	1,149.7	902.5	1,015.4	1,089.2	936.7	890.7
IBDI Fees (2%)	1.5	6.6	13.9	21.2	23.0	18.0	20.3	21.8	18.7	17.8
Total Cash Outflow	75.8	339.2	710.1	1,082.9	1,172.7	920.5	1,035.7	1,111.0	955.4	908.5
Surplus (Deficit)	25.5	64.5	131.6	214.9	313.9	25.8	140.7	375.8	857.9	857.1
Cumulative Surplus (Deficit)	25.5	90.0	221.6	436.5	750.4	776.2	916.9	1,292.7	2,150.6	3,007.7

TABLE III-13

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TABLE III-14

INCREMENTAL ECONOMIC COSTS AND BENEFITS

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12-30
<u>Incremental Cost</u>												
Civil Works	372	169	-	-	-	-	-	-	-	-	-	-
Vehicles	212	47	5	23	201	25	25	25	25	25	25	25
Equipment	274	69	22	6	-	-	-	-	-	-	-	-
Salaries & Wages	923	1,040	1,140	1,177	1,144	350	350	350	350	350	350	350
Vehicle Operating	111	141	141	141	142	60	60	60	60	60	60	60
General Services	161	100	100	100	100	20	20	20	20	20	20	20
Feeder Roads	431	222	271	225	238	-	-	-	-	-	-	-
Farm Inputs	74	306	600	884	911	684	761	743	666	734	727	692
Hired Labor	-	38	156	252	214	96	-	-	-	-	-	-
Families' Labor	61	231	629	858	522	798	823	854	889	913	935	946
Sub Total	2,619	2,363	3,064	3,666	3,472	2,033	2,039	2,052	2,010	2,112	2,127	2,103
<u>Less</u>												
Investment on Training	200	100	100	100	100	-	-	-	-	-	-	-
Present Extension Services	42	46	51	56	61	68	74	82	90	99	108	120
TOTAL	2,377	2,217	2,913	3,510	3,311	1,965	1,965	1,970	1,920	2,013	2,013	1,983
With 5% Contingencies	2,496	2,328	3,060	3,686	3,477	2,063	2,063	2,069	2,016	2,114	2,120	2,082
<u>Incremental Benefits</u>												
Value of Rice	88	314	736	1,228	1,798	2,029	2,089	2,089	2,089	2,089	2,089	2,089
Value of Cocoa	-	-	-	-	49	212	537	1,026	1,246	1,897	2,198	2,442
Value of Coffee	-	-	-	57	284	731	1,326	1,764	1,890	1,890	1,890	1,890
Value of Other Crops	-	-	135	450	765	900	450	-	-	-	-	-
TOTAL	88	314	817	1,735	2,896	3,872	4,402	4,879	5,225	5,376	6,177	6,421
Net Benefits	(2,408)	(2,014)	(2,189)	(1,951)	(501)	1,809	2,339	2,810	3,209	3,762	4,057	4,339

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TABLE III-15

EXPENDITURES FOR HIGHWAYS IN LIBERIA
(US\$. million)

	1974			1975			1976		
	GOL	Foreign	Total	GOL	Foreign	Total	GOL	Foreign	Total
Administration and Technical Services	0.309	0.646	0.955	0.358	0.599	0.957	0.428	1.530	4.958
Maintenance	1.822	0.487	2.229	2.246	4.816	7.062	4.882	4.134	9.016
Construction	<u>1.946</u>	<u>0.826</u>	<u>2.772</u>	<u>1.616</u>	<u>1.724</u>	<u>3.340</u>	<u>3.846</u>	<u>10.842</u>	<u>14.688</u>
Total	<u>4.977</u>	<u>1.879</u>	<u>5.956</u>	<u>4.220</u>	<u>7.139</u>	<u>11.359</u>	<u>9.156</u>	<u>16.506</u>	<u>25.662</u>

SOURCES:

1. Accounting Ledgers of the Finance Division - MPW
2. Annual Reports - Ministry of Public Works, 1974 and 1975
3. Budget of the Government of the Republic of Liberia - 1974, 1975 & 1976
4. Monthly Reports, Budget and Accounting; Finance Division, MPW for 1974 & 1976
5. Second and Third Highway Project Development Agreement 395 LBR and Loan Agreement 907 LBR; Audited Financial Statements for periods ended December 31, 1974/1975.

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Table III-16

Summary Cost Estimate and Financial Plan
(\$ 000)

Source	AID		Host Country		Other Donors		Total
	FX	LC	FX	LC	FX	LC	
Buildings				108	380	54	542
Vehicles				49	390	49	488
Furniture & Equipment				37	306	28	371
Salary and Wages		378		2,802	1,575	669	5,424
Vehicle O&M Costs				203	474		677
General Services				168	36	357	561
Farm Inputs	1,402	680		694			2,776
Hired Labor				660			660
Road Construction	1,666	643					2,309
Research & Consultants	30			65	670	65	830
Feasibility Study					200		200
Village Wells				30	50	20	100
Development of Bank				45	90	15	150
Sub-total	3,098	1,701		4,861	4,171	1,257	15,088
Contingencies							
Physical	160	85		243	200	69	757
Price	1,162	398		1,596	973	335	4,464
Sub-total	1,322	483		1,839	1,173	404	5,221
Total	<u>4,420</u>	<u>2,184</u>		<u>6,700</u>	<u>5,344</u>	<u>1,661</u>	<u>20,309</u>

Table III-17

LIBERIA
BONG COUNTY INTEGRATED RURAL DEVELOPMENT PROJECT
Summary AID Financed Project Costs
 (US \$000)

<u>Category</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Total</u>
1. Rural Roads	1,000.0	400.0	303.0	303.0	302.5	2,308.5
2. Coop. Salaries (local)	60.8	79.2	79.2	79.2	79.2	377.6
3. Fertilizer	15.0	46.6	105.7	203.7	317.2	676.7
4. Seed and Seedlings	16.2	73.8	145.0	190.8	165.0	590.8
5. Tools and Equipment	24.8	92.8	162.2	222.2	138.7	652.2
6. Chemicals, Sprayers, and Processing Equipment	-	12.7	33.6	58.1	94.0	198.4
7. Evaluation Consultants	30.0	-	-	-	-	30.0
Total w/o contingencies	1,146.8	705.1	828.7	1,057.0	1,096.6	4,834.2
Contingencies	150.0	270.0	360.0	450.0	540.0	1,770.0
Grand Total	<u>1,296.8</u>	<u>975.1</u>	<u>1,188.7</u>	<u>1,507.0</u>	<u>1,636.6</u>	<u>6,604.2</u>

TABLE III-18

Costing of Project Outputs/Inputs
(\$000)

Loan No. 669-H-025

Title: Upper Bong County Integrated Rural
Development Project

Project Inputs	Project Outputs ^{1/}								Total	%
	1	2	3	4	5	6	7	8		
AID Appropriated	-	-	500	3000	3100	-			6.600	32.5
Other U.S.	-	-	-	-	-	-				
Host Country	1725	650	650	3300	-	50	250	75	6.700	33
Other Donors (I.B.R.D.)	2550	900	700	1350	-	75	325	1100	7000	34.5
Total	4275	1550	1850	7650	3100	125	575	1175	20300	
%	21%	8%	9%	38%	15%	-	3%	6%		100

1/ See Output Section of Logical Framework.

1. Extension System
2. Training
3. Cooperative Services
 - a. Input supply
 - b. Credit
 - c. Marketing

4. Crop Development
5. Road Construction
6. Village Wells
7. Schistosomiasis
8. Research

Economic Rate of Return and Sensitivity Analysis

% of Original Estimates

<u>Costs</u>	<u>Benefits</u>	<u>Rate of Return*</u>	
		A	B
100	100	21%	16%
100	90	19%	13%
100	80	16%	10%
110	100	19%	13%
120	100	16%	11%
120	120	11%	4%
100	100 ^{1/}	21%	16%
100	2 ^{2/}	14%	10%

- * A - Family labor shadow wages at 50%
- * B - Family labor costed at full market rate.

1/ Project life reduced by 5 years.

2/ 2-year delay in benefit stream.

102%

3.3.5 Budgets, Funding Procedures, and Accounting Records

A. Budgets

The BPMU will prepare its own annual budget and in consultation with the Feeder Road, Schistosomiasis and Monitoring Units prepare the annual budgets of these units. LBDI will prepare the annual budget of the LBDI branch at Gbarnga. All budgets, after approval by the Project Steering Committee, will be incorporated in the annual estimates of the Ministries of Agriculture, Public Health, Public Works and LBDI. Budgets will be based on the cost estimates in this report but will be amended as required to reflect current costs and policy changes. The BPMU will submit quarterly cash flow statements to the Project Steering Committee for approval in accordance with these budgets.

B. Funding Procedures

GOL has established a project bank account with a commercial bank with an initial deposit of US \$150,000. The account is to be replenished by the Ministry of Finance quarterly in advance to finance forecast local expenditures. Overdraft facilities or other interim measures will be arranged by GOL to cover any shortfall in GOL contribution to local costs for that quarter. Within the approved budgetary allocations, the BPMU will have full authority to operate the project bank account. Both IDA and USAID reimbursement of local expenditures will be made directly to the Ministry of Finance. Reimbursement applications by the Ministries of Public Works and Health and LBDI will be channelled through the BPMU. Assurances to these effects were obtained during the GOL/IBRD negotiations.

C. Accounts and Audits

The BPMU will maintain appropriate accounts in accordance with acceptable accounting practices to reflect the operations and financial position of the project and to provide evaluation data. The accounts of BPMU will be audited annually by an independent auditor acceptable to the Association. Audited accounts, balance sheets and operating statements will be submitted to the IBRD within four months of the end of the financial year. USAID will arrange for the annual audit of the revolving credit fund, Feeder Road Unit and the Schistosomiasis Unit. A copy of the audit reports would be furnished to the IBRD.

D. Cooperatives Records

GOL will ensure that farmer cooperatives will maintain adequate credit and accounting records for each farmer. These would be available for review by the Association/USAID supervision missions and audited annually by the Registrar of Cooperatives. As trustee of the revolving credit fund, LBDI will maintain separate accounts and records of

the fund, in accordance with an agreement to be drawn up between LBDI and the GOL.

3.3.6 Repayment Prospects

The Liberian economy remains susceptible to the vagaries of weather and changes in the world market, especially as they affect agricultural production, timber and iron ore. Yet, Liberia enjoyed a relatively high rate of economic growth over the last decade. The average annual growth of GDP was 5.7 percent in real terms and 8.7 percent in current prices from 1964 to 1974.

Net disbursements of official public loans and grants averaged about \$12 million in recent years, compared to around \$21 million in 1964-66. This reflects both a fairly sharp increase in repayments of public debt since 1969 and a pronounced drop of disbursements resulting, in part, from a lower level of public investment.^{1/}

Since the end of World War II, Liberia has been the recipient of more than \$390 million in public foreign assistance. More than \$250 million of this has come from the United States, with the remainder having come from international organizations and other bilateral donors. The GOL has rarely been delinquent on loan repayments, (those few occasions were at least partly due to administrative inefficiencies). Generally, it has a record of having met its obligations. Even with an expanded public borrowing program and assuming adverse external conditions, Liberia's debt service ratio is estimated to stay below 5 percent of export earnings through the remainder of the 1970's.^{2/} There is no reason to doubt the GOL's ability to repay a new AID loan of \$6.6 million.

3.3.7 Summary Conclusions

Based on the analyses set forth in this section, it is concluded that the financial plan is adequate, and that the overall project is financially sound.

3.4 Social Analysis

3.4.1 Introduction

The Project purpose is to increase the agricultural productivity and income of small farmers in Upper Bong County. In the first instance these increases are designed to benefit one half the small producers in each of the six Kpelle Chiefdoms of the district.

^{1/} GOL, National Socio-Economic Development Plan, July 1976-June 1980.

^{2/} IBRD Report No. 873-LBR, 15 September 1975.

These beneficiaries will be those with easier geographic and political access to Project information and inputs. Secondary benefits will accrue to (a) socially and geographically more peripheral farmers within the area of demonstration effects; and (b) urban elites and the governmental structure, both directly through the strengthening of agriculturally-related bureaucracies and indirectly through the provision of food surpluses to Monrovia and political support for on-going policies.

This social soundness analysis ^{1/} discusses the rural social context within which the project will function. It raises possible issues related to individual project components that can be resolved by a sensitive Project Management Unit. It recommends means of assuring maximum responsiveness to the needs of the beneficiaries. In the professional judgment of the author (Dr. Daniel Aronson, Regional Anthropologist, REDSO/WA) none of the issues raised here with respect to the relations between the project and the farmers of Upper Bong County is serious enough to delay implementation.

3.4.2 Socio-Cultural Feasibility

A. The Social Landscape

Upper Bong County is the heartland of the Kpelle people, one of the major ethnic groups of upcountry Liberia. Until 1964 administered like the rest of the hinterland as neglected tribal dependencies of the coastal-centered government, Kpelle technological and social traditions have only recently been subjected to direct challenges to change. This project represents the first broad-gauge attempt to plan change in the area for the direct benefit of the local population, although other aspects of economic growth and political policy in Liberia have had indirect effects on the area. As such, this author has been told frequently that Liberians are looking carefully at this project (and the similar one underway in Lofa County) for confirmation of the GOL's commitment to genuine development for the Liberian small farmer.

Because of the recency of significant change in the area, Upper Bong County society can be described in terms of the continuing patterns of "traditional" Kpelle culture. With important modifications as noted, Kpelle social, economic and political life are still dominated by institutions successfully adapted to cultural ecological conditions that have persisted since long before this century.

^{1/} The analysis presented here is based on (a) long familiarity with the published ethnography of the project area and others like it; (b) a two-week visit to the area and to the Eastern Sierra Leone Integrated Agricultural Development Project in Kenema, which is the prototype in the area; and (c) consultations with experts and officials in Bong County, Kenema and Monrovia.

The Kpelle of Liberia number about a quarter of a million people, with at least as many again (called Guerze) across the border in Guinea. Their language is one of the closely-related group of Southern Mande (Mande-Fu) languages spoken in northern and western Liberia, eastern Sierra Leone and Guinea. Although Kpelle maintain a distinct cultural unity, they are in fact very similar in economy, social organization, and culture to the peoples around them: indeed, some of the confidence that the project will succeed is based on the success of the IBRD-funded Eastern Province Integrated Agricultural Development Project in Kenema, Sierra Leone, in a quite similar social setting.

Upper Bong County is organized into six chiefdoms, each with a Paramount Chief independent of the others. Paramount chiefs, salaried and increasingly government functionaries, rule over a total of 28 clan chiefs, Liberian "clans" are now territorial rather than tribal entities. That is, their chiefs arbitrate disputes, control political influence, and oversee the allocation of land among all the people resident in the territory, whether blood-related members of the indigenous descent unit ("clan" in a more familiar sense) or migrants into the area. There is thus a distinction between the chief as a Kpelle in the traditional hierarchy and the modern administrative chief-increasingly as a secular administrator.

Below the clan chiefs are "town" chiefs - in fact, the chiefs of settlements which may consist of as few as four houses. It is the town which is the major unit of reference for individual farmers. Within it most of their friendships are formed, their relationships to outside agencies are organized, and their economic life pursued. Land around the town that is not yet assigned to individual descent groups (or large "families") for productive purposes is allocated by a decision-making process involving the senior men of the town.

Effectively, however, land-holding and production units are at a lower level. Larger towns may be divided into quarters, the core members of each of which are related by blood or history. Towns and quarters are in turn composed of shallow descent groups, each with its farmlands generally controlled by a lineage head. But, in turn, the land is assigned to individuals, who for all practical purposes own it. Individual household leaders make decisions on all aspects of production, and their children inherit the land. Only in special circumstances - the extinction of a family, war or major migration - do higher levels of authority exercise residual rights to deal with family land.

The individual farm family is the production and consumption unit. Occasionally, a set of brothers or a father and adult sons may cooperatively work a field, but in general the nuclear household does so. Individual tasks may be carried out by a voluntarily-joined

reciprocal work group that moves from farm to farm, but this cooperative labor does not alter the basic definition of the one family, one farm economic structure. The one substantial exception to the family farm is the additional, personally-owned, field that various individuals - usually wives of the family on land acquired from their father's family - may work for additional personal profit.

The farm is most centrally an upland rice farm, ^{1/} which averages four to five acres. Using a system of rotational bush-fallowing and a technology of the machete and hoe, Kpelle clear new fields each year. Clearing (in fact, re-clearing - there is little virgin forest), felling, and burning take place at the end of the dry season, from February to April. Planting may begin by May or early June, weeding chores are at their peak in June/July, and the harvest, depending on seed varieties, lasts from October to December. Men fell trees, women weed, and men and women clear brush, plant and harvest. Men also devote a good deal of time to fencing the gardens against groundhogs, while children stand vigil, especially during early growth and near harvest, against Queles and other bird pests.

Around this dominant rice-growing schedule, secondary activities fall into place. Cassava may be interplanted with rice or, more often, grown on the same plot the next year. Women grow garden vegetables close to home, and there may be a few fruit trees as well. Peanuts, grown in small quantities by women for sale, are planted before upland rice and harvested during the slack between rice weeding and harvesting. Sugar cane can be planted over the whole rainy season. Coffee, cocoa, and improved palms are all grown by scattered farmers, and again the labor demands fall into place around the rice calendar.

Special note must be taken of swamp rice at this point, given its importance in the present project. Throughout western West Africa, traditional swamp rice is primarily a "women's crop". Among Kpelle, female producers choose swamplands where little felling or stump-pulling is necessary, broadcast-sow some of the same varieties of seed as are used on upland, and plant and harvest the swamp before and after the upland crop is in. The extra labor in the swamp does not reduce a woman's participation on the combined family farm, but it does reward her with an income (in rice) over which she has complete individual control. It allows her two basic options - to contribute all the more to family welfare, or to sell for building up her own means of financing herself out of an unhappy family situation. By providing her with options, swamp rice gives her at least a modicum of "liberation".

^{1/} James Gibbs, the primary American anthropologist of the Kpelle, writes that "meaningful work to the Kpelle is rice farming". Gibbs, "The Kpelle of Liberia", in James L. Gibbs, ed., Peoples of Africa, Holt, Rinehart and Winston, Inc. (New York, 1965), p. 200.

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Nonetheless, not much swamp has been cultivated up to now in Upper Bong County. David Blanchard claims to have witnessed the first swamp plots cultivated in Kpai Chiefdom in 1966. Enough swampy land exists for all to farm, it is said, but a variety of factors including the unreliability of swamp waters, the arduous and dirty swamp labor, the greater vulnerability to pests and the greater need for joint management of a fully-worked swamp have all inhibited swamp rice development.

The full agricultural calendar is summarized in Table 1 (which is for Lofa County, where the cycle is similar, but the planting season begins earlier than in Bong). Agricultural labor demands provide the rhythm of the year. The slack season after weeding (which is also the "lean" season with food reserves nearly depleted) and especially the post-harvest months provide the leisure for heightened social, religious, political, and craft activity. The Kpelle have few markets and little inclination for commerce, according to Gibbs, who notes that "Mandingo" traders from Guinea, and Lebanese, provide most of the trade goods and purchase rice and kola for export from the area.

Kpelle society is not entirely homogenous, of course. Formerly, slaves formed a politically disinherited underclass, though in economic terms they were not much worse off than freemen. Now as before, among all farmers there are distinctions of luck, enterprise, and intelligence that produce greater incomes for some people. Indeed, to become a to nuu, a rich and socially prominent man, is an active aspiration of all. Such a "big man" will have many wives whose labor ensures his wealth, has a somewhat more sophisticated house and wardrobe, may have a few Ndama cattle both as stored wealth and for important ceremonial slaughter, and may have a few clients as partly-paid laborers on his farms.

Most importantly, however, his wealth qualifies him for political leadership - in the first instance because people bring their quarrels to him, and then because decisions affecting his quarter or his town cannot be made without consulting him. This highly personalized leadership/following pattern is repeated up through the hierarchy of chiefs and into the national life of Liberia. For example, a local chief may not hold much influence over a rural man who works on an important Monrovia's farm and who is thus "protected" by his absentee patron.

It is this pyramid of political leadership which cuts across towns and clans to form the wider network of Kpelle society. The traditional institution which embodied this political power was the Poro. A "secret society" which extended across cultural and linguistic boundaries. Poro both controlled ambition and political initiative and provided an arena for political achievement. Individuals could strive for higher

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and higher titles in the association, and received religious sanction for their leadership activities. Poro is still active in Kpelle, indeed in all of Liberian society, but the relations between secular and Poro leadership are not revealed to non-initiates. For the Upper Bong Project (as for the Kenema Project before it), one can simply assume that project activities will be closely scrutinized by a county- and indeed country-wide organization of highly influential men, who will seek to insure that their interests are advanced within the project framework.

B. Recent Change in Bong County: The Context for Project Innovations

The impact of Westernization has been slowly building in Bong County since the turn of the century. Christian mission influence and money have recast the framework of ideas and relationships throughout most of Liberia. Wage labor possibilities by the 1920's on the coast and much more recently in the iron mines inland have enabled youth to become more independent and have encouraged the individuation of family farm enterprises discussed above. New crops - sugar cane, coffee, cocoa, rubber, peanuts and others - have filtered into the area in a more or less unplanned way, although Mandingo traders have sponsored some swamp rice and coffee experimentation for the commerce that might ensue.

The completion of a road through Bong by 1950 intensified all these changes, and also brought coastal people into the area investing in land for rubber plantations as an additional, fairly easily worked source of income. With the opening in Upper Bong County of the Suakoko research station of a few large food farms of Monrovia along the roadsides, and the growth of the Gbarnga urban area, more and more people have been exposed to the rural aspects of the modern economy.

On the other hand, change is still steady and slow rather than disorganizing or massive. John Gay's book Red Dust on the Green Leaves,^{1/} a semi-fictional account of growing up among the Kpelle in the 1930's and 1940's, narrates a time when kwii (Western, including Americo-Liberian) ways were just beginning to impinge on Kpelle culture. Writing of the early 1960's, Gibbs says that the Kpelle "are still... oriented to their traditional culture - as the Kpelle say 'our rice is what we know.'"^{2/} The same statement would still be true today.

Most emphatically, however, slow change does not mean change-resistant farmers. In Upper Bong County and elsewhere in hinterland Liberia the constraints to change have been the lack of viable options for cash crops in terms of proven seed varieties, marketing

^{1/} Interculture Associates, Inc. (Thompson, Connecticut, 1973).

^{2/} Gibbs, op. cit., p. 232.

structures, transport facilities, and/or profitable returns; the lack of governmental infrastructure and commitment to small-farmer development; and the tiny margins for risk assumption that farmers can afford an economy that provides them about \$40 per family in cash ^{1/} plus barely enough food to survive physically until the next harvest after a "lean season" of actual low caloric intake. In spite of these constraints, rural Liberians have added small quantities of a variety of export and food crops to their farms and have adjusted work schedules, cultivation techniques, and market relationships accordingly. As Currens shows for the neighboring Lomni people, motives for such changes have been "largely acquisitive and economic...have adopted innovations that they perceive to be economically advantageous...at first quite independently of any programs by development agencies."^{2/}

The available evidence, for Bong County as for most of the peasant farming communities of West Africa, is that farmers (a) are aware of, and have experimented with, a large number of agricultural innovations, albeit on a small scale, (b) will adopt more extensive innovations if risks can be minimized and if gains to be made are demonstrable, and (c) if economic gains, however demonstrable, are not accompanied by equally demonstrable and immediate political or cultural threats that are perceived to offset any purely financial gains (although in the long run culture and political organization may be allowed to change dramatically).

C. Project Innovations

In this context the proposed project innovations can be analyzed for the probable ways in which they will be perceived by beneficiaries and in which they will impact on them:

1. Increasing land values: the land tenure issue.

The PRP EC/PR recognized that there was a potential for "increased small farmer vulnerability to loss of land tenure security as land is developed," and that "to merely facilitate land registration may be an inadequate response which could even exacerbate the problem". Liberians with whom this issue has been discussed agree that the major problem is to insure that tree crop and swamp land, as and after they take on the added value of being permanently cropped, remain in small farmers' possession. This issue is a crucial one, because both in Bong and elsewhere in Liberia land that has been bought and legally registered by Monrovians, sometimes with only token regard for the needs and/or claims of the local population on the land.

^{1/} Average disposable income per farm family, as computed from 1967 data by W. D. McCourtie, Traditional Farming in Liberia, University of Liberia (Monrovia, 1973).

^{2/} Gerald E. Currens, "Women, Men, and Rice: Agricultural Innovation in Northwestern Liberia," Human Organization 35:4 (Winter, 1976), pp. 355-365.

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2. The pace of intended interventions:

More than in Kenema, project area farmers are attuned to the income benefits of "new" crops. The primary example before them is, of course, rubber, stands of which have been planted on land purchased mainly by outsiders along every road in the area. The example, is far more general, though, as farmers are willing to trust that money can be made in cocoa, coffee, rice and other crops. Thus, even in remote areas farmers know that "new seeds" are potentially beneficial, and that advice, fertilizers and other external aid can be of use.

Contrary to expectations, even farmers who have had recent and disastrous experiences with outside intervention (specifically the MOA/Agrimeco scheme at Kpatawee) are willing to try again provided that their contracts are guaranteed more firmly than before.

Nonetheless, the detailed implementation of cooperative building, swamp clearance and cultivation, extension advice absorption, and village wage work will be new to nearly all Upper Bong farmers. Reluctance on the part of farmers to move forward quickly on all of these fronts should, therefore, be anticipated by the PMU, and special efforts at pre-enlistment communication and animation should take place. Calendars of the scale of effort and expenditure and probable return should be constructed at the level of the individual farmer to show him exactly what to expect, and the consequences of choices (to use fertilizer, to grow cocoa rather than coffee, to reclaim swamp) carefully outlined. In fact, there are farmers in Bong now (some of those associated with the CAES/UNDP program for example), who might be recruited to animation/demonstration teams, and their farms would make more convincing displays than the experimental, highly-supported farms such as CAES.

Still, there will be areas where farmers are either reluctant or preoccupied with other activities. UNDP expert R. Bos had difficulty recruiting enlistments for his swamp improvement program in the area around Gbarnga "City", and along the road north through Belefuanai. On the other hand, in the Balama/Kpatawee area, in Kpai, Sanoyie and Panta chiefdoms, there are many potential recruits despite the relative remoteness of these areas. The towns of Zowienta, Sanoyie, Bellemu and Fokole may be especially receptive, among others.

3. The Feasibility of Particular Crops

(a) Swamp rice: At the time the PRP was written, an assumption was made that the technology for swamp rice would be taught to men as the heads of family production units, by male extension agents. Later this assumption was challenged: given that women have been the traditional swamp rice cultivators in West Africa - even if not

much swamp was cultivated by Kpelle - why not teach the new swamp rice technology through female extension agents to women producers? The situation in Bong County allows the possibility that a major production component of the project could be in the hands of women, with consequent increases in their economic independence and social power.

At the time of writing, USAID/Liberia is exploring this issue with the GOL. It has been suggested that existing female "home economics" workers could be retrained as extension agents for swamp rice.

Whoever does the swamp rice, it remains true that Kpelle see swamp work as dirty and toilsome. Nonetheless, people are prepared to do it if the outcome will be worth it. Lack of experience, on the other hand, will require the maintenance of high extension aide; farmer ratios; even in Kenema, where swamp work itself is much older and the water supply is better than in Bong, fluctuation in water levels, variations of sun, rain; fertilizer combinations and their consequences on each of a number of rice varieties, mean that the level of extension available cannot serve present needs adequately. In the desire to achieve this year's targets, earlier years' participants in Kenema have been neglected.

(b) Coffee and Cocoa: Upper Bong farmers here have a clear choice - they say that cocoa requires much less work and would opt for it every time. The project technical analysis would seem to support their perceptions. If the project wishes coffee to play as prominent a role as is presently projected, it will have to convince both itself and the farmers of the value of the extra effort for coffee production.

(c) Upland rice: Experts at WARDA, in Kenema, and in the Lofa Project now disagree on the economics of "advanced" upland rice. During early phases of Bong Project implementation, if these differences have not been resolved, the necessary controlled testing should be carried out to determine the feasibility of various approaches to upland rice development. In any case, farmers may be expected to keep their upland rice crops going as their trustworthy staple no matter what the PMU management recommends as to possible alternative allocations of their time.

4. Cooperatives

(a) Leadership: The project envisages two development models for the cooperative. The first assumes that entire villages will enter en bloc into project activities. While this may happen in the smallest communities, larger villages are not likely to move this way (or if village leaders do, others may not be enthusiastic).

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Under either model it is probably not wise to assume that clan and town chiefs should or will be the obvious choices for leadership positions. In Kenema a system of "master farmers" has emerged (though there are no co-ops in that project), which recognizes the achievement of leadership by skillful men of variable origins. To start, then, cooperatives should probably include leadership from among chiefs, men and women, with a shift to fully elected leadership after an initial three years or so.

(b) Cooperatives and Kuu: Cooperatives to be created by the project do not have traditional antecedents. The traditional Kuu work-bee was and remains task-specific. There might be one Kuu for weeding, another for stump-pulling, etc. The close "accounting" of equal work possible in such a system is not directly transferable to the new co-ops. Even "village-level primary societies" will thus not be "Ku-like". Rather, patient work in building the cooperative spirit will be necessary; books should be open all the time and discussed frequently.

5. Credit and Costs

(a) Crucial aspects of project success, their details must be communicated early and simply to farmers. At the Agrimeco site, credit and "costs" escalated to the point at which 80% of the crop was "owed" to the LPMC, and the farmers were thus badly burned. Post-project costs must also be estimated now if farmers are to understand who will pay for extension, transport, storage, surveying, and other costs once the PMU has wound up. It is on this problem of institutionalization that the Kenema project is now foundering.

(b) Kenema project farmers do not receive any part of their seasonal loan until a substantial portion (40 percent) of the work has been completed. A major bottleneck has thus arisen in which farmers must borrow to cover initial costs at high rates of interest that diminish their actual returns from the project. The Bong Project should advance adequate sums at the start of the season.

(c) A major problem for Bong farmers is the need for personal credit before the harvest. Now this service is performed mainly by Lebanese and Mandingo traders, who profit both from markups on the goods credited and from low valuations given to the rice pledged in return. Forward rice pledging could put co-op repayment into serious jeopardy. An alternative form of personal credit must be found: the co-ops should be enabled to make personal loans up to a small maximum once they show financial viability, and should themselves receive lines of credit to do so.

6. Milling and Marketing.

One of the Bong farmers' major complaints is that they are forced to pay taxes and loans immediately upon harvesting their

crops, when their rice is then assigned its lowest value. The PMU should review the possibility of enabling the chiefdom level co-ops to store and to mill rice, once leadership and finance have attained a certain minimum level, for sale late in the year. If co-ops remain in the control of the farmers, this would become a major means of transferring added value to the small farmers.

7. Ancilliary Services

The project speaks of schools, health facilities and roads, specifically providing for the latter. Farmers in Upper Bong are, of course, eager to have these amenities provided. By far the best means of providing these scarce resources would be to tie them as incentives to project participation, good cooperative management, and attainment of agricultural goals. (a) The best example of such an approach is in Kenema, where CARE (with AID Funds) is building farm-to-market roads in Phase 2 of the project. Instead of laying out such roads arbitrarily - or worse, according to political favors imposed externally - the project has successfully argued that the roads must be built where project participation is keen. Not only more useful roads result; farmers are given a demonstration that hard work has many benefits. Such an approach in Bong would suggest that roads be built late in the project, not immediately. (b) While such an approach on roads has its own merits, other services could be added the same way: water systems and public clothes-washing stands, for example, would both save Kpelle women much back-breaking labor and probably yield health improvements. Either as co-op/community "profit-sharing", or as project awards, these inexpensive facilities could be built in to public recognition of civic economic effort. Functional literacy/accounting campaigns, health unit and school construction could be done the same way.

8. Project Evaluation/Monitoring Unit.

Upper Bong farmers are probably willing to risk the costs of this project. They are at the same time appropriately demanding that they be consulted; that they be given valid copies of legal documents which affect them (copies which have the same force as the government's copies - their experience with Agrimeco was that the government claimed to have lost its copies of contracts and that the farmers' copies were not binding!); and that there be open and constant communication at all times. Some of these brokerage functions will be assumed by the project monitoring/evaluation unit, which will thus have a delicate role to play: it must be able to maintain partial detachment from the PMU itself. One of its primary tasks as well should be to focus on the post-project situation in Bong, i.e., to encourage the deep rooting in the area of project institutions so that the benefits will continue after the PMU has gone.

9. Miscellaneous Issues

(a) Other farmer concerns: Birds, groundhogs (grass-cutters), and rats also pose obvious problems in the project area that farmers mention repeatedly. A UNDP expert is trying some bird control with hawk-call whistles. A great deal of child (bird-scaring) and adult (fence-building) labor would be saved if solutions to these pests were found.

(b) Protein: Children even of eight to ten years of age show signs of kwashiorkor. In the one rural weekly market observed, the only animal protein for sale was a few pounds of dried fish. While AID fish ponds in Liberia failed some years ago, it would be wise to monitor increases in meat intake, if any, as incomes go up, and to attend to supply problems in one way or another as the project continues.

D. Summary: Socio-cultural Feasibility

Kpelle farmers are adequately motivated by available cash-cropping models, and by their own desires for schooling for their children and other cash needs, to participate in the Integrated Development Project. In general, they lack personal experience in swamp cultivation, cooperative participation above the mutual work-group level, or extension service interaction. No strong values or strong political interests militate against their experimentation with new ideas, (although current middlemen - Mandingo and Lebanese - who stand to be displaced do bear watching). What is therefore suggested is that the PMU, by building its work carefully and sustaining its inputs confidently, can make the project work. Relations "upward" to GOL machinery are likely to present more problems than relations "downward" to the farmers of Bong County.

3.4.3 Replicability

On the macro scale, this project is itself a replication, with improvements, of two other projects to the west of this county, and confidence in its feasibility comes in large part from the level of success that the IBRD project in Kenema has had. On the micro scale, Upper Bong is a culturally, politically, and economically homogeneous enough to encourage maximum spread within the area of project successes (and failures). In all, if the improved "IRD" model is successful here, Upper Bong could replace Kenema as a western West African demonstration site.

3.4.4 Conclusion

In the Liberian context, in which urban elites have been quick to take advantage of plantation-building opportunities up-country, the PMU will have to act carefully to safeguard the interests of the small farmer. Executed as designed, the project will benefit thousands

of farm families previously beyond the reach of government development planning. Bong County agriculture is still very much a household economy, and women as well as men share the farm labor, the right to manage farm plots, and decisions about household consumption; by ensuring that women have access to project credit and extension services, the project can ensure a strong role for women in local development.

Kpelle farmers of Upper Bong like Moses or George of Balama; Mr. Raymond of Kpatawee; Pastor Magill Jesse, or Pa Kupa of Zowienta; the villages of Fokole and Bellemu - all give testimony to the hard work and resourcefulness of peasant farmers everywhere. They are searching for the means to live a fuller life, and are clear about their goals and their problems. The Upper Bong Project will remove some of the obstacles to their development.

3.4.5 Issues

A. Farmer Participation

The EC/PR review requested additional information regarding the management aspects of farmer participation in the planning process and raised the question if one particular unit of the PMU has specific responsibility to stimulate and guide village development. The best response to this question is to examine how farmer participation is actually being addressed in the Lofa Project. In the case of Lofa there is no one specific unit responsible for village development. During the first stages of the project, the primary contact with the farmers is the extension and cooperative aides who live in their assigned area of responsibility and are instrumental in the formation of village credit committees. Membership in this committee consists of the town chief, two village elders, a representative of the cooperative, and the extension and cooperative aide. Since the extension and cooperative aide are usually natives of the area, they soon become the spokesmen for their respective villages and provide required feed-back to the higher echelons of the PMU.

At the second stage of development the Land Planning Unit and the Schistosomiasis Unit become heavily involved, but the extension and cooperative aides are still the focal points of continuing dialogue between the PMU and the village. At the land planning stage soil surveys are carried out, swamps are laid out, and surveys undertaken for areas to be developed into tree crops. At the same time this unit undertakes a survey of the local water supply and the rural road structure in the development area. At the completion of this survey, discussions are held between the PMU staff and the village leadership to determine steps that can be taken to improve the village water supply and the roads affecting the development area. As soon as the land planning unit has completed

its work, the Schistosomiasis Unit moves into the area to carry out their baseline surveys and diagnostic work. Infected villagers are then referred to the appropriate official for treatment.

The other major point of interaction between the project and the farmers takes place at training. Training programs have been designed to provide frequent and specific periods for farmer feed-back. At the end of each major element of instruction, time has been allotted in the training schedule for farmers to comment on the subject of instruction and/or program content.

B. Role of Women

The EC/PR requested specific information with regard to the impact of the Kenema Project on the role of women in swamp rice production and on any resultant benefits for participating women. Our research indicates that there is no empirical data on this specific question. However, from observations and as the result of discussions with the Kenema staff, we determined that:

1. Improved swamp rice technology requires a greater number of person-days per unit of land farmed than do the traditional methods. This has resulted in more men being involved in the initial development phase, but women have retained their traditional role in planting, weeding and in harvesting.

2. Although her total role may have become narrower in scope, the resulting increases in yield have allowed women to retain and possibly to increase their proportional earnings.

During the drafting of the PP, the GOL appointed its first woman as the Minister of Agriculture. Shortly before her appointment, USAID/staff met with her to obtain her views on how this project might include specific measures to improve the participation of women. At that time she strongly endorsed the principle of structuring government programs in ways to bring about greater involvement of women. Subsequent to her appointment, she has reaffirmed her intention to bring about greater involvement of women in the whole area of agriculture; she has expressed the view that significant increases in productivity can be obtained by the fuller involvement of women in the agricultural sector.

During the development of the PRP, the GOL not only appointed a woman as Minister of Agriculture, but also appointed women to the posts of Deputy Minister of Finance, Deputy Director of the GSA, and as an Associate Justice of the Supreme Court.

3.5 ECONOMIC ANALYSIS

3.5.1 Market Prospects and Prices ^{1/}

The Bong County Integrated Rural Development Project is primarily designed to stimulate the production of three crops - rice, cocoa and coffee. Prices for the "export" crops, coffee and cocoa, are subject to the vagaries of the international market place while the local price of rice is fixed by the Government of Liberia. In the final analysis, realistic determination of the economic and financial feasibilities of this project will be largely determined by the accuracy of commodity price forecasts.

A. Prices

Heavy frost in Brazil has destroyed most of its 1976/77 crop and consequently world coffee prices are at a record high of US \$5,475 per metric ton (spot London). According to Bank forecasts, prices in current terms would decrease and reach about US \$3,150 per metric ton by 1985. In constant 1976 dollars prices will continue to decline, and projected 1985 prices in 1976 dollars would be about 15 percent lower than the 1969-72 average. The world market prices for cocoa (currently about US \$2,100 per metric ton, spot New York) will continue to decline (until 1980) in current as well as in constant 1976 prices. The projected 1985 prices (constant 1976 dollars) would be about 15 per cent lower than the 1969-72 average. The current world market price for clean rice (FOB Bangkok) is about US \$260 per metric ton. In current as well as constant 1976 dollars, world market price is expected to increase to US \$680 and US \$360 respectively per metric ton. Economic and financial farmgate prices for project crops have been estimated on the basis of Bank forecast prices. In constant 1976 terms the prices are as follows:

	<u>Economic</u>		<u>Financial</u>	
	<u>1980</u>	<u>1985</u>	<u>1980</u>	<u>1985</u>
	<u>US\$/Metric ton</u>			
Cocoa (beans)	991	814	744	613
Coffee (clean)	1,548	1,260	1,179	956
Paddy	237	239	248	253

B. Market Prospects

1. Rice.

Total Liberian consumption of rice is estimated at between 150,000 and 160,000 metric tons. Between 1967 and 1975, annual imports averaged about 40,000 tons (with considerable year-to-year variations); however, since 1973, annual imports have tended to decrease and in 1975/76 season were at 30,000 metric tons. Future growth in rice production in Liberia is likely to be higher than it has been in the past due to the current GOL priorities on attaining national self sufficiency.

^{1/} Portions of this Section have been summarized from the IBRD Bong County Appraisal Report.

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However, consumption is expected to increase at a faster rate (assuming population growth at about 3 percent and substantial income growth) resulting in a demand of about 229,000 - 250,000 tons by 1985. The domestic market will have no difficulty in absorbing the project-induced rice production.

2. Coffee

Liberia is not yet considered to be a major producer of coffee and its total exports of about 5,000 tons (1968-75 average) is less than 0.2 percent of world production. However, its export tonnages are higher than domestic production because of smuggling from neighboring Sierra Leone and Guinea (estimated to be about 20-25 percent of total exports).

Liberia's present production and exports are well below the quota of 100,000 bags (approximately 6,000 tons) established under the 1976 International Coffee Agreement. The incremental output from the project, although substantial in terms of existing Liberian production, would be insignificant in terms of total world production, supply and demand and therefore would have no impact on the world price situation. Besides, the total Liberian production including the full development output from the project would still be within the quota restrictions and no marketing difficulties are anticipated.

3. Cocoa.

Since all cocoa is produced in the developing world and most of it is consumed in developed countries, the bulk of the annual cocoa crop enters international trade. Developing countries' export of cocoa is mostly in the form of beans; however, there is an increasing tendency for cocoa to be converted into intermediate products in the producing countries before being exported. Over one-fifth of the total output of raw cocoa is now processed into intermediate products in the producing countries, compared with about one-eighth in the early 1960s.

World production is expected to grow at a rate of 2.8 percent between 1972/74 and 1980, reaching around 1.8 million tons in 1980; and at 3.4 percent in the period 1980-85 reaching around 2.1 million tons by 1985. Demand projections for 1980 and 1985 are expected to be about 1.8 million and 2.0 million tons respectively.

4. Marketing

This project proposes to integrate into the marketing system several thousand farmers who have so far had little or no experience with cash crop production. The present marketing system has constraints which require rectification. The existing facilities for transport and

storage would have to be extended in order to cope with the increased volume of production. No major changes in the institutional structure are required and farmer incentives would be maintained by appropriate marketing and pricing policies. Policy measures at the national level (e.g., review of LPMC pricing policies for export crops, operation of a price support scheme for paddy and/or clean rice, appropriate price differentials between cherry and clean coffee, quality improvements and price structures to reflect quality differences) have been initiated under the Lofa County IRD Project and should remove these marketing constraints on project output. Marketing practices and infrastructure in the project area will be improved: creation of collection points where the farmers will be paid the full LPMC prices; more efficient means of farm-to-market transport; better market information for the farmers; promotion of cooperatives as new marketing institutions; and greater involvement of LPMC through establishing a fullfledged out-station at Gbarnga.

3.5.2 Benefits and Justifications

Direct benefits from the project would at full maturity be incremental production of 8,740 tons of paddy rice, 3,000 tons of cocoa and 1,500 tons of clean coffee annually. Project rice production would be consumed internally while coffee and cocoa would be exported. The net foreign exchange earnings/savings arising from increased exports and rice import substitution is estimated at US \$6.7 million from Year 13 onwards. The project would enhance the role of women in the economic sector and cause substantial mobilization of labor in the project area, particularly the seasonally unemployed. Apart from this, employment opportunities would also be generated in the transportation, construction, rural industries, commerce and services sectors.

The overall Economic Rate of Return (ERR) based on the quantifiable part of incremental costs and incremental benefits is estimated at 21 percent. The principal assumptions used are in Section 3.5.4. The project would have a number of important secondary benefits, largely unquantifiable. The county population, consisting mostly of rural poor, would benefit from the general improvement in the infrastructure promoted by the project, e.g., road improvements, banking facilities, health services, improvement in drinking water supply, better marketing infrastructure, etc. Development of the cooperatives would lead to the creation of rural capabilities for providing farm support services. The project would strengthen the technical managerial capabilities of the MOA, and to some extent of the MPW and MOHSW resulting in improved planning and implementation of future rural development projects.

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3.5.3 Cost Recovery

Financial implications of the project to GOL are summarized in Table III-14. The net annual average cost to GOL during Years 1 to 5 (before debt servicing) would be US \$1.3 million; year 6-10 US \$0.6 million; years 11-40 US \$0.4 million. However, all input costs would be recovered from the farmers and the revolving credit fund's capital would be available for further credit operation. As in other rural development projects, the project's direct contribution to Government revenue is minimal because there are no Government taxes that can be applied; the present system of land taxation is completely inelastic to farm incomes; the project beneficiaries cannot be charged for technical services. However, there are likely to be substantial but unquantifiable increases in indirect revenues to GOL from indirect taxes (sales tax, excise duties) resulting from increased expenditure on imported and locally produced goods. LPMC, through increased market turnover, should increase its revenues for coffee and cocoa by about 8 percent of FOB value annually; and additionally LPMC would receive a 7 percent levy on project generated export crops for its agricultural development fund.

3.5.4 Assumptions

A. Project Life

Project life is assumed to be 30 years from project year 1 and no residual value is attributed after that period. All development activities will be initiated and substantially completed by the end of the project development period.

B. Project Cost.

(i) all taxes and duties on goods and services are excluded; (ii) price contingencies are excluded but physical contingencies (at 5 percent of base costs) have been included during the economic life of the project; (iii) all material farm inputs (seeds, seedlings, fertilizers, agricultural chemicals, tools, equipment) have been costed at full landed price in the project area; (iv) all hired labor has been costed at full market wage rate but family labor has been costed at 50 percent of the market wage rate to reflect average opportunity cost and productivity in the area; (v) 60 percent of the investments in feeder road development has been included in the economic costs because the improved road network will also be used for non-project activities; (vi) all costs associated with the implementation of research facilities, development of banking services, feasibility studies for further projects, village well and consultants and an amount of US \$.6 million out of the investment on staff training have been excluded from economic costs as these are investments and technical assistance for development of socio-economic infrastructure; (vii) the extension coverage of agriculture and

co-op credit officers would gradually revert to a normal staffing level during the post-project period (from 1982 onwards) because by then improved technology would be adequately diffused and local service institutions would be able to take over a number of farm support services.

C. Benefits

(i) yield and production assumptions are given in Section 3.1.2. It has been assumed that full development yields would be maintained through the economic life of the project; (ii) the value of project milled rice output is treated as foreign exchange savings (import substitution) and the value of coffee and cocoa as foreign exchange earnings; (iii) economic farmgate prices are based on IBRD projections for 1985 in 1976 dollars and have been adjusted for quality differentials; (iv) no additional benefits due to road improvement/development are taken into consideration. Given these assumptions, the economic rate of return is 21 percent.

3.5.5 Risks and Sensitivity

The various permutations of projected project costs and benefits presented in Table III-19 highlight the sensitivity of the rate of return to variable manipulation. The economic rate of return is not sensitive to a reduction of the project economic life by five years. However, it is sensitive to delays in the realization of project benefits and increased costs and lowered benefits.

Family labor has been shadow priced at 50 percent of the current "market" wage rate. There is a certain judgmental or arbitrariness to this decision and therefore the legitimacy of the assumption can be questioned. Costing family labor at the full market rate results in an economic rate of return of 16 percent which is in line with AID guidelines (Handbook #3, Part 1, p. 6-10). It does seem reasonable, given the imperfections of the Liberian market, to shadow price labor at something less than 100 percent of the market rate.

Using the 50 percent shadow wage for labor, all other permutations of costs and benefits result in respectable rates of return. The one exception (120 percent of costs and 120 percent of benefits) results in a return of 11 percent. The possibility of such an occurrence must be considered together with the expected returns of alternative investments.

Retaining projected costs at 100 percent of the original estimate and decreasing benefits to 80 percent of the original estimate results in a 16 percent rate of return. This situation can be used as a proxy for farmer participation at 80 percent of the original estimate

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coinciding with an increase in variable costs (fixed costs remaining constant). Obviously, farmer participation substantially lower than 80 percent, without a subsequent reduction in overhead, could result in an unsatisfactory rate of return.

4.0 Implementation Arrangements

4.1 The Implementing Agency

4.1.1 Project Organization

The complexity and intensity of the project requires an organization which includes some degree of complexity and innovation. Its basic concept:

- Entrusts the implementation to a special project administration within the Ministry of Agriculture to be called the Bong Project Management Unit (BPMU), with headquarters at Suakoko;
- Makes this Project Management Unit (PMU) solely responsible for a number of farm support measures;
- Places the PMU under a Project Steering Committee, the chairman of which will be the Minister of Agriculture; and
- Gives the PMU a largely independent status within the government sector.

Three main reasons favor this organizational set-up. First, the integrated nature of the project and the necessary tight coordination for at least the core of project measures requires a single agency in charge rather than a diffusion of the responsibility among various agencies. Secondly, a separate project administration outside of the ministerial structure will be less hampered by bureaucratic procedures and delays and thus will be more effective in handling a complex project. And thirdly, in view of the intensity of the development measures and the necessary adaptation of these measures to the requirements of the region, a specially created regional project administration will be more suitable than a national body.

The Project Management Unit, following the prototype organization established for Lofa, will be a government agency; however, it will be vested with semi-autonomous authority. It will be free from regular government Civil Service and budgetary regulations.

The independence of the project will be achieved primarily through its own management, financial control and recruitment and procurement procedures. The project management will be on the project site and will be in charge of the daily operations. The evidence of its independence will be the project's own budget. All project personnel will be responsible to the project manager.

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The necessary integration of the project into the overall institutional system will be achieved by means of the Project Steering Committee at the national level, the Project Advisory Committee at the county level and the development councils at the local level. (The latter will be informal rather than formal bodies.)

The project management unit will be responsible to the Project Steering Committee. The terms of reference of the Lofa County Project Steering Committee will be amended to include the implementation of the Bong project. Supervision will entail general policy guidelines and of budgetary control. The Steering Committee will approve the annual quarterly project budgets. Furthermore, the Committee will coordinate the project activities with overall government policy and assure the cooperation of other government agencies. The Committee will meet quarterly.

The Project Advisory Committee will act as an advisory body to the project management and will coordinate the activities of the PMU with those of other institutions in the project area. It will meet at least quarterly and will include as its members:

- Superintendent, Bong County (Chairman)
- Project Manager
- Assistant Superintendent for Development
- Paramount chiefs
- Head of the local branches of the Ministries of
 - Agriculture (county agent)
 - Education (county supervisor)
 - Health (medical director of county hospital)
 - Public Works (resident engineer)
 - Land and Mines (land commissioner)
- Cooperative chairman; and
- Deputy Project Manager (the executive secretary)

The Bong County PMU will have three functions: (1) organization and coordination of farm-support measures; (2) planning and evaluation of project activities and (3) guidance and strengthening of rural institutions (cooperatives).

The PMU itself will take over the organization of all those support measures for which there are no efficient institutions available and where tight coordination and competent management is vital. Activities belonging to this category are (1) organization and management of an agricultural extension service, (2) assistance to farmers in swamp reclamation and land registration and (3) administration of a revolving credit fund for credit to the farmers via the cooperatives. The PMU will merely coordinate the activities of the existing, capable institutions as well as support services and integrate them into the project. This would involve:

- Road Construction and maintenance (responsible agency: Ministry of Public Works);
- Input supply (responsible agencies: cooperatives, LPMC);
- Produce marketing (responsible agencies: cooperatives and LPMC);
- Credit distribution (responsible agencies: cooperatives); and
- Experimentation (responsible agency: CAES).

The PMU will also service its own needs through staff training (with LIPA and CAES assistance), fiscal management and vehicle maintenance.

4.1.2 Internal Organization of the Bong County PMU

A. Agriculture

The project manager will be the head of the unit, and would be assisted by a deputy project manager. They will have five divisions; administration and personnel, agricultural services, cooperative and credit services, training and finance. The Agricultural Services Division, in turn, will have three sections: extension and experimentation (Responsible for technical advice on tree and field crop production, seed multiplication, seedling production, field experimentation), land development (land clearing, farm equipment, hire service, swamp development, irrigation and water control), and survey and registration (topographic and soil surveys, land use planning, demarcation and measurement of farms, and assistance in land registration). The Cooperative and Credit Services Division will be responsible for organizing the delivery system for farm inputs and credit. It will have three sections: cooperatives (development, guidance and strengthening of cooperatives), credit (distribution and recovery of smallholder credit) and commercial services (procurement and distribution of inputs and assistance in crop marketing). There will be seven expatriate officers financed by the IBRD to provide top-level management supervision to the PMU. The positions that they will occupy are project manager, financial manager, training manager, agricultural manager, cooperative/commercial manager, a land use planning officer and a swamp (land) development officer.

B. Roads

The Ministry of Public Works will be responsible for constructing, reconditioning and maintaining farm-to-market roads in the project area. The program will be implemented through a Feeder Road Unit to be formed by September 30, 1977. The unit will be independently financed (equipment and personnel) and managed, and would

operate only within the project area in support of project activities. Administratively, the unit will be responsible to the MPW resident engineer for Bong County; but annual budgets and operating plans will be developed jointly with BPMU.

C. Health

The Schistosomiasis Surveillance Unit, established under the Lofa County Project will be strengthened with additional staff, vehicles, and laboratory facilities to service the Bong Project. The unit will be under the administrative control of the Liberian Institute for Biomedical Research but the work program, budgeting and recruitment will be in consultation with the Bong PMU.

D. Monitoring and Evaluation Unit

Under the Lofa County Project a small project evaluation and planning unit will be established within the Project Management Unit. Monitoring and evaluation of large rural development projects can be costly in scarce resources, particularly in the human talent to collect and analyze large amounts of data. Thus, the monitoring and evaluation of both Lofa and Bong (and any future) projects will be handled as one operation, directly responsible to the Minister of Agriculture (through the PSC), working in close liaison with its Economic Planning and Evaluation Division. The monitoring/evaluation operation will identify and measure project results, and point the way to specific recommendations in project approach, priorities or implementation which will improve both subsequent project design and current performance.

E. Staffing

The complexities, inherent in a smallholder development project, requires a project staff with high levels of managerial efficiency, technical competence, innovativeness and above all high commitment to project clientele - the small farmers. Liberia's trained manpower problem is a qualitative as well as a quantitative one. Despite this, whenever possible, PMU positions will be filled by qualified Liberians, to ensure staffing continuity and institutionalization of the program. However, it seems likely that a number of the senior key positions will have to be filled through international recruitment. The project, therefore, would provide for international recruitment of a Project Manager, managers of the Finance, Agricultural Services, Training and Cooperative/Credit Services Divisions, a Swamp Development Officer and a Land Use Planning Officer. In addition, funds for international recruitment of the Director of Monitoring and Evaluation Unit and the Schistosomiasis Surveillance unit have been provided under the Lofa County Integrated Rural Development loan. Assurances would be obtained at negotiations that these positions their deputies and other senior technical posts would be filled by persons

having experience, qualifications and terms and conditions of service satisfactory to the GOL, IBRD and AID. To avoid delays in the start of the project, GOL has agreed to appoint the Project Manager and Managers of the Finance and Agricultural Services Divisions of the PMU prior to the IDA loan becoming effective. Retroactive financing for this purpose will be provided under the IDA loan. See Tables IV-1 and IV-2 for project organization and staffing.

F. Training

Liberia does not have a pool of trained manpower, particularly of intermediate and lower level technical staff, nor does it have an institutional set up capable of turning out trained personnel for the immediate needs of the project.

The Lofa Project provides substantial staff training; however, it is too early for the Bong Project to draw on those trained personnel as they will not be released until about 1980. Therefore, the project will provide training facilities for all extension, cooperative and credit field staff recruited for Bong PMU. In view of the general lack of knowledge and expertise in Liberia on coffee and cocoa development, selected Liberian staff will be sent to the Ivory Coast and Ghana for short specialized training. Additionally, senior Liberian technical and managerial staff will be trained in project management and rural development administration.

The Manager of the Training Division will be responsible for developing and implementing the training program. The program will consist of short formal courses interspersed with practical field training. The curricula will focus both on improving the technical knowledge of the staff, and on the development of its motivation and its dedication of these staff. Technical training for the field staff will be provided primarily at the CAES where a training center, financed under a previous IBRD loan, is under construction. Close cooperation will be obtained from the LIPA and WARDA. After initial training field staff would undergo short refresher training at suitable intervals. Management training will be provided by the staff of the Liberian Institute for Public Administration. Furthermore, all expatriate staff would have the explicit responsibility of training their Liberian counterparts and other senior staff working with them.

In order to generate farmer response, participation in project activities and diffusion of the new technology, the project will organize training for farm families on village demonstration farms, at farmer training centers to be built in suitable locations, and through farm visits and village/group discussions.

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G. Farm Inputs - Procurement and Distribution

The input supply and marketing section of Bong's PMU Cooperative and credit Services Division will have primary responsibility for organizing the farm input delivery system. This involves village group/co-ops who will be responsible for estimating requirements and distribution to individual farmers; the chiefdom cooperatives will collage village groups/co-ops, requirements, arrange delivery from LPMC, and provide temporary storage prior to distribution. LPMC will be responsible for importation, warehousing at Port (and, if necessary, at Suakoko or Gbarnga) and transportation to the chiefdom cooperatives storage facilities. However, until the chiefdom and village cooperatives are formed, the PMU will arrange at cost to the farmers for all input handling and delivery, with LPMC providing transportation to BPMU storage facilities.

Farm equipment, e.g., pedal threshers, power tillers, chain saws, knapsack sprayers, tools, etc., will be procured locally or imported directly from overseas manufacturers by the PMU. Threshers will be sold at full cost to individuals and groups, while a hiring service for tillers, sprayers, chain saws, hand winches, etc., will be operated by the PMU's land development section.

Improved varieties of rice seeds and coffee and cocoa seedlings, fertilizers, pesticides, etc., will be distributed to farmers by BPMU. Breeder seed for rice will be obtained from CAES, Suakoko and multiplied by selected farmers and on project seed multiplication farms. Hybrid varieties of coffee and cocoa seeds will be raised in nurseries in the project area by LPMC.

4.1.3 Administrative Issues/Analysis

A. GOL Management/Manpower Capability

One of the primary issues discussed at the PRP EC/PR was the question whether the GOL would have adequate manpower available to staff a second large rural development so soon after the implementation of Lofa. At the time the PRP was prepared, the Lofa project was only several months into implementation. It was agreed at the time of the PRP review that the Mission undertake an evaluation of the Lofa Project after more experience had been gained regarding project staffing problems, and prior to the preparation of the PP. This evaluation was carried out in April 1977 and showed the following:

1. Highly qualified Liberians were recruited as the Deputy Project Manager, Administrative Officer, and as deputies to the expatriate division managers. Seven of the eight key Liberian staff have received training overseas, five at the post-graduate level.

2. A staff of 138 people had been recruited at the time of the evaluation. This compares to a PP target of 185 by June 30, 1977.

3. There is an ample supply of high school graduates to staff such positions as extension and cooperative aides.

4. Previous development projects in the area apparently have left a small reservoir of skilled manpower which the project could tap. One equipment operator and several drivers had been trained by Raymond Construction Company when the main highway was built through the project area, but they had returned to farming after the completion of the road project.

5. There has been some difficulty in recruiting Liberians with strong management skills or in some of the sub-professional skill areas where knowledge of the local language is a requirement. For example, the project has had difficulty in recruiting a graphic artist to produce training aides in the local languages. The management skills problem is being partially addressed through training assistance from the Liberian Institute for Public Administration.

Overall, the staffing of the Lofa Project has progressed reasonably well on schedule and trained or trainable staff is being recruited. One unanticipated factor that has contributed favorably to recruitment is an apparent propensity for trained Liberians to return to their home areas if there are adequate employment opportunities. A large number of the key Liberian staff are originally from Lofa County. They had been trained, held responsible positions in government or private business in the Monrovia area, and are now returning to their home area. The possible effect of depleting certain skills in the urban areas is the price of "equal and balanced growth". (To date two key Liberians have been recruited for the Bong Project. Both have Master's Degrees from the U.S.)

Another factor which had been overlooked in some of our previous analysis was the degree to which language proficiency would effect manpower requirements. Earlier there had been concern that Lofa and Bong might compete for limited manpower. As it turns out, the vast majority of the positions require a local language capability which only a native of that particular area will have.

B. Effect of Timing on Manpower Requirements

It now appears that problems related to the recruitment of expatriate project staff for Bong will not allow it to get underway with the same speed as Lofa. In June 1976, almost all of the Lofa expatriate staff had been recruited and approved, and the project manager had arrived in country. At the same point in time in 1977, only two of the expatriate staff for Bong have been approved and neither has arrived in Liberia.

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C. Post Project Administration

The successful implementation of a project of this nature requires a high-degree of coordination and the element of timing is particularly crucial. Therefore, the use of the PMU type management approach seems particularly appropriate, if not essential, to obtain the project objectives within the specified time frame. Its greatest strength is its semi-autonomous nature in matters of implementation, being able to make on-the-spot decisions without constant referral to the capital city for approval. Given the history of past development projects in Liberia, it is highly questionable whether any other approach would work. Experience in Lofa indicates that a responsible staff can effectively manage a project of this nature and still be responsible to overall government policy. Several of the key Liberians on the project have indicated a high degree of job satisfaction and stated that for the first time in their career they have both the resources and authority to really bring about change. However, the creation of short-duration organizations such as the PMU raises a legitimate question of continuity when external finance and management cease.

In the case of this project, there are several strategies that must be pursued or actions taken to make sure that the GOL will continue to provide adequate support after the termination of donor funding. These include the development of self supporting cooperative organizations, adequate central government support in the form of manpower and funding, and improved interagency coordination of rural development. There are five major functions that must be continued after the end of project funding, i.e., input supply, credit, marketing, road maintenance and agricultural extension services. The Ministry of Public Works has agreed to assume responsibility for the maintenance of roads, but of the remaining four items only one (agricultural extension) can be fully addressed by central government resources. Inputs, credit, and marketing services can only continue if viable and self-supporting local cooperative organizations are functioning effectively.

Although the LPMC will play a major role in input supply and marketing and LBDI with respect to the revolving credit fund, there will still be a need for local organizations that can deal with a large number of farmers on a day-to-day basis and only cooperatives can do this effectively. Careful attention must and will be given to cooperative development during the early phases of project development and certain intermediate targets will be established to assure that sufficient cooperatives are developing to assume full responsibility for these three activities at the end of the project. The PMU evaluation unit will carefully monitor the program and recommend corrective action if this aspect starts to lag. However, three district cooperatives in Lofa were in the process of being self-supporting even before the Lofa IRD Project. There is good reason to believe that this will also happen in Bong through the assistance provided under this project. Also, AID's new Cooperative Development Project will strengthen the Government's capability to provide support and assistance if and when needed.

To clarify arrangements and responsibilities for the phase over of BPMU functions to other institutions by the end of the five-year development period, the BPMU manager is to develop, in Y4, an operational plan and schedule, including related budgetary planning, for the final phase out in Year 5.

It is estimated that it will cost \$450,000 annually to provide post-project agricultural support services. At the present time (FY 1976), the total budget for the Ministry of Agriculture is \$7.3 million. However, this represents a substantial increase over the FY 1970 budget of \$1.2 million. Over this six year period, the national budget grew at an average rate of 14 percent and the Ministry of Agriculture's share increased from less than 2 percent of the budget in 1970 to 5.5 percent in 1976. If this trend were to continue over the next five years, the budget of the Ministry could conceivably be as high as \$21 million. Even a mere doubling of the budget increase for the Ministry by 1981 would hold the continuing recurring cost for extension support to this project at less than 4 percent of the Ministry budget.

Lastly, the question of central government coordination of rural development programs needs to be formalized. An earlier study on the reorganization of the Ministry of Agriculture recommended the creation of a Rural Development Authority to coordinate rural development activities. However, little progress has been made over the past year in bringing this concept into a reality. Much of the problem lies in the fact that the consultant failed to make specific recommendations regarding the organization of the proposed authority. Additional funding is now being provided under the IBRD funded portion of this loan for a follow-on study to come up with the specific recommendations lacking in the earlier report.

4.2 AID Administrative Arrangements

There is no additional requirement for AID staff for the successful implementation of this project. The USAID Rural Development Officer will monitor this project concurrently with the Lofa County project. Monitoring and inspection of the rural road element of the project will be the responsibility of the Engineering Section of the Mission's Office of Capital Projects. The main primary highway which provides access to the interior of the country runs directly through the project area. Thus, the USAID's engineers will traverse the project area routinely as they monitor other AID road projects.

4.3 Implementation Plan

4.3.1 Proposed Method of Financing

A. Agricultural Inputs

The procurement of imported agricultural inputs will be from U.S. or Code 941 sources in accordance with country contracting regulations as set forth in Handbooks 11 and 15. Financing will be carried out under AID Letters of Commitment. The Liberian Produce Marketing Corporation (LEMC) has been designated as the host country procurement agent for both the Lofa and Bong projects and the Ministry

of Agriculture is now in the final stages of negotiating a procurement services agreement (PSA) with the LPMC. The finalization of this agreement will be made a condition precedent for issuance of Letters of Commitment for agricultural inputs.

Financing of local procurement for cocoa and seedlings, rice seed, and locally manufactured small farm equipment (foot-powered rice threshers, coffee and cocoa drying trays, etc.) will be through direct reimbursement. Coffee and cocoa seedlings will be procured directly from LPMC nurseries operating in the project area. Initially, rice seed will be procured locally from the Central Agricultural Research Station or the National Seed Association (NSA). Subsequently, the PMU will contract with local farmers for production of certified seed and/or produce seed in project operated seed multiplication plots. Reimbursement will be at the rate of 55 percent of the cost of seeds and seedlings provided to farmers under credit; based on present costs of 38¢ per lb. for rice seed, 16¢ per coffee seedling and 12¢ per cocoa seedling. Subject to AID approval, these prices may be adjusted.

B. Local Salaries

AID will reimburse the GOL for 75 percent of the local salaries, excluding taxes, paid to Liberian employees of the Cooperative and Credit Division of the Project Management Unit. The GOL can request an advance under the loan equal to four months estimated salaries.

C. Road Construction Equipment

Engineering estimates, including contingencies, project the cost of the rural road element of the project at \$2,308,500, 100 percent of which will be financed by AID. The Mission will utilize the Fixed Amount Reimbursement (FAR) technique for financing AID's portion of the road costs, and a schedule of projected reimbursement for each level of work is contained in Table III-4. Use of the FAR method would require the MPW to purchase \$816,000 of construction equipment and \$334,000 of construction material (culverts and bridging). It is proposed that once conditions precedent have been met, AID would make an advance under the loan equal to the estimated cost of such off-shore procurement. Thus, AID would:

(1) advance payment of \$1,150,000 for off-shore procurement;

(2) make quarterly reimbursement for all upgrading and construction work completed in accordance with the fixed amounts shown in Table III-4. Reimbursement will not be made for units of less than one mile. 50 percent of all reimbursements would be credited to the above advance.

Both the FAR technique and the equipment/materials procurement procedures will be the same or similar to those outlined in the Rural Access Road III PP.

A USAID engineer would periodically inspect the progress of construction to alert the MPW in advance to any difficulties which might prevent timely reimbursement. Reimbursement would only be made upon inspection and certification by MPW's supervising engineer and the USAID engineer.

The MPW has requested that it be allowed to procure these items through the local dealers of U.S. manufacturers to insure interchangeability of spare parts with existing equipment and to insure that equipment procured will be familiar to the MPW equipment operators. AID has reviewed this list and agrees in principle with the MPW request. It has also agreed that the equipment proposed is, in fact, required for this project.

Because the FAR technique will be utilized, it is believed that no specific waiver of many of the normal AID procurement policies contained in Handbooks 11 and 15 will be required. AID will be financing, in this case, a physical output (e.g., completion of the road) rather than specific inputs of goods or services to be procured. The GOL will be required, by the terms of the loan agreement, to comply with all applicable statutory requirements, such as procurement from U.S. or Code 941 sources, AID marking requirements, etc. But it is believed that there is no further requirement that MEW advertise or otherwise comply with normal AID competitive procurement procedures if the AID Mission Director is satisfied with the soundness of the GOL's own existing procurement policies and procedures (see paragraph 5 of AIDTO Circular A-78 dated 3-1-77). To assist MPW in off-shore procurement, however, it will be required that the MPW enter into a procurement arrangement with a qualified procurement services agent, such as GOL/GSA, to handle that part of the procurement. This requirement will be made a condition precedent to the loan agreement.

4.3.2 Required Waivers

Waiver authority is requested for a limited amount of farm inputs required for the first year of the project. Due to the extremely short period of time between the anticipated satisfaction of the CP's (January 30, 1978) and the first planting season (May 1978) authority is requested for up to \$30,000 for the local negotiated procurement of Code 935 commodities needed during the first year of the project. Some of these items will be eligible for off-shelf procurement due to recent changes in the regulations. However, other items such as fertilizer are generally not available as shelf items. Since it is impossible to know in advance as to which items will be available as shelf items, waiver authority is requested for the full amount of the first year's requirements with the understanding it will be utilized only for those items not available for off-shelf procurement. A similar type waiver was granted for the first year's procurement of farm inputs for the Lofa Project.

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USAID/Liberia is presently in the process of obtaining waivers and/or an Administrative Determination for the use of certain pesticides in the Lofa County IRD Project. Since the Bong County Project will be growing the identical crops, it is requested that any AID/W approvals for pesticide usage in Lofa also be made applicable to Bong. A listing of pesticides to be used and their approval status is as follows:

<u>Pesticide</u>	<u>Rate of Application</u>	<u>Crop</u>	<u>Status</u>
1. Cuprous Oxide 50%	3 Kg/HA	Cocoa	Pending approval AID/W
2. Propoxox (Methyl Carbamate)	210 grams A.I./HA	Cocoa/ Coffee	Pending approval AID/W
3. Dioxacarb (Methyl Carbamate)	280 grams A.I./HA	Cocoa/ Coffee	Pending approval AID/W
4. MCPA	31 t./HA	Rice	Approved, State 078363

Waiver request is attached as Annex XVII.

4.3.3 Implementation Schedule

A. Administrative and Legal Actions

1. 7/30/77: Appointment of Project Manager, Financial Manager and Agricultural Officer.
2. 7/30/77: PMU bank account established with \$150,000 deposit by GOL.
3. 8/30/77: LBDI statutes amended to permit establishment of banking facilities in Gbarnga and to manager trust fund responsibilities.
4. 9/30/77: Loan Agreement signed between AID and GOL.
5. 9/30/77: Interim budget for FY 1978 approved and funds released for 2nd quarter of FY 1978.
6. 9/30/77: Project Steering Committee (PSC) established.
7. 10/30/77: Revolving Credit Fund Agreement signed between the GOL and LBDI.
8. 10/30/77: Appointment of Planning and Evaluation Officer (Lofa/Bong), Coop. Commercial Officer, Land Development Officer, Land Use Planning Officer and Training Officer.

9. 11/15/77: Project Advisory Committee (PAC) established.
10. 11/30/77: Recruitment of PMU field staff begins, especially extension and cooperative staff.
11. 12/15/77: Work plan for remainder FY 78 approved.
12. 12/15/77: PMU cash flow estimates for third quarter of 1978 approved by PSC.
13. 12/30/77: MOA and LPMC extension staff in Bong Count; transferred to PMU.
14. 12/30/77: LBDI banking facility established in Gbarnga.
15. 1/15/78: Training PMU field extension personnel commences.
16. 1/15/78: Agreement reached on final plan for road construction and upgrading and year #1 priorities established.
17. 1/30/78: All conditions precedent satisfied.
18. 3/15/78: Fourth Quarter PMU cash flow estimates approved by PSC.
19. 6/15/78: FY 1978 budget, work plan and first quarter estimates approved by PSC.
20. 9/15/78: Second quarter cash flow estimate approved by PSC.

Budgeting, recruitment and training cycles repeat annually, Annual evaluations commence in January 1979.

B. Procurement Actions

1. 2/1/78: Local procurement action initiated for procurement of first years agricultural inputs (See waiver request under Section 4.3.2).
2. 2/30/78: Plans and specifications approved by AID for road construction and equipment and material.
3. 4/30/78: Contracts awarded for construction equipment/materials.
4. 4/30/78: AID approves CY 1979 agricultural input request and LPMC issues IFB's.

5. 4/30/78: CY 1978 farm inputs arrive in project area.
6. 5/30/78: Farm inputs distributed to farmers.
7. 6/30/78: Contracts awarded for CY 1979 Agricultural inputs.
8. 12/30/78: CY 1979 Agricultural inputs arrive in Liberia.
9. 2/30/79: Road Construction equipment/materials arrive in Liberia.
10. 3/30/79: CY 1979 farm inputs in place in project area.
11. 5/30/79: CY 1979 farm inputs distributed to farmers.

The CY 1978 procurement cycle for farm inputs is repeated annually.

C. Crop Development

1. 1/15/78: Training commences for extension and cooperative personnel.
2. 2/30/78: Training completed, field personnel assigned to field.
3. 3/30/78: Farmer selection completed.
4. 4/30/78: Farmer training completed.
5. 4/30/78: Credit applications completed and approved.
6. 5/30/78: Input distribution completed.
7. 8/30/78: Follow-up extension visits completed.
8. 9/30/78: Pre-harvest extension visits begin; yield estimates taken.
9. 10/15/78: Harvesting commences/credit repayments begin.
10. 12/15/78: Harvest collections complete. Cycle repeats annually.

Infrastructure

1. 7/30/77: Construction initiated for staff housing and permanent office facilities.

2. 9/30/77: Plans, specifications and construction schedule for training facility approved by AID.
3. 11/30/77: Construction contract for training facility approved by AID.
4. 4/30/78: Construction of staff housing and office facilities completed.
5. 4/30/78: Construction of ten sub-district cooperative office/warehouses completed.
6. 9/30/78: Training facility complete.
7. 3/30/79: Road construction/reconditioning initiated.
8. 4/30/79: Construction of ten additional sub-district cooperative offices/warehouses complete.
9. 3/30/80: Thirteen miles of new roads completed and 43 miles reconditioned.
10. 4/30/80: Construction of ten additional sub-district cooperative office/warehouses completed.
11. 3/30/81: Twenty-six miles of new roads complete and 86 miles reconditioned.
12. 3/30/82: Forty miles of new roads complete and 130 miles reconditioned.

4.4 Evaluation Plan

A Project Monitoring and Evaluation Unit (PMEU) will be an integral part of the Bong PMU. It will identify and measure project results, and make specific recommendations regarding project approach, priorities or implementation procedures which would improve both project design and performance. This unit will be responsible directly to the Minister of Agriculture (through the PSC) and would work closely with the Economic Planning and Evaluation Division of the Ministry.

To insure consistency in methodology, the unit will be headed by the expatriate Evaluation Officer of the Lofa County PMU, who will share his time equally between the two projects. He will be assisted by the following professional staff:

- 1 Deputy Evaluation Officer
- 6 Economic Aides (enumerators)
- 1 Statistician

The second level of evaluation activities will be conducted by USAID as a part of its annual project analysis and review (PAR) process in January or February, after the end of the seasonal loan repayment period. Whenever possible, these evaluations will be made in conjunction with the IBRD's semi-annual Supervisory Missions. A suggested evaluation system is included as Annex V.

4.5 Conditions, Covenants and Negotiating Status

In addition to the standard Conditions Precedent (CP's), it is recommended that the following CP's or covenants be incorporated within the proposed loan agreement:

A. Appointment of Evaluation Officer:

The IBRD is responsible for the recruitment and funding of an evaluation officer to supervise evaluation in both Lofa and Bong. Although the IBRD has been able to recruit personnel for all other positions, they have not been forthcoming with a candidate to fill this critical position. USAID/Liberia recommends that the appointment of an evaluation officer be made a CP for initial disbursement under this loan.

B. Appointment of Procurement Services Agent:

The designation of a PSA to handle the procurement of agricultural inputs under the Lofa loan has still not been finalized. During meetings held in June 1977, agreement was reached in principle for the LPMC to perform this function. A contract agreement is currently

under preparation, but not yet finalized or approved by AID. USAID/Liberia recommends that the satisfactory consumation of this agreement be made a CP for initial disbursement.

C. Road Construction:

The Rural Road element of this project requires two basic sets of CP's. The first, prior to issuance of L/Comms for procurement of equipment and materials would require:

- arrangements for a Procurement Service Agent to act as the designated GOL procurement agent for road construction equipment/material being financed under this loan;

- written assurances from the GOL that it will assume responsibility for routine maintenance of all roads constructed or reconditioned with funds made available under this loan;

- a statement from the GOL agreeing to the terms of the FAR method of financing.

The second CP will require satisfaction prior to reimbursement for construction, and reconditioning. It will require the borrower to furnish engineering and operational plans and specifications, cost estimates and time schedules carrying out construction and reconditioning. This information will be in form and substance satisfactory to AID.

D. Prior to the first disbursement, the borrower shall furnish AID with an opinion from the Ministry of Justice indicating that the proposed land registration program is in conformance with the laws of the Republic of Liberia.

E. Prior to disbursement for the procurement of pesticides, the GOL will furnish evidence that adequate provision has been made for training project staff and farmers in the proper and safe use of pesticides.

4.5.1 Covenants

In addition to the general loan covenants and warranties, it is proposed that the borrower shall be required to agree:

A. To meet with AID not later than two years following satisfaction of all conditions precedent in order to assess the adequacy of the farmer credit interest rates in covering overhead and administrative expense, bad debts and inflation, and in achieving the scheduled capitalization of the Revolving Credit Funds, with a view toward adjusting the interest rates, if necessary, to cover credit costs and the planned capitalization of the fund.

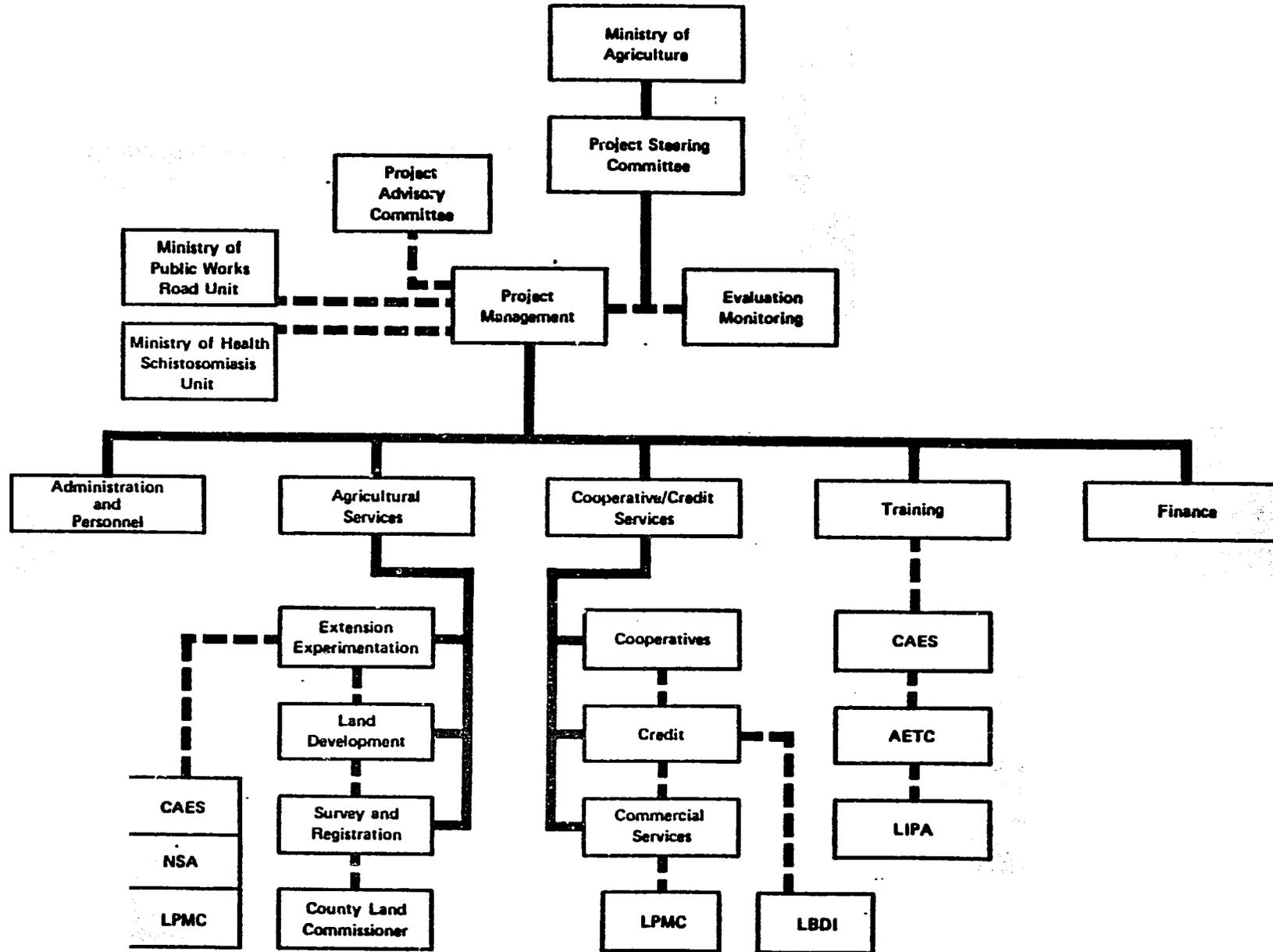
B. To assign responsibility to the Ministry of Health for the application of control and curative measures developed by the project's Schistosomiasis Unit.

C. To include qualified women in the Project Management Unit and as project participants and beneficiaries.

D. That all obligations and covenants of the Borrower contained in Articles III, IV, and V in Schedule 4 of the draft IDA Development Credit dated December 14, 1976 are hereby incorporated by reference and made a part of this agreement. (See Annex IV for applicable IDA loan provisions.)

E. To adhere to AID regulations regarding procurement and application of pesticides, and to insure that all project plans, specifications and operating procedures conform with sound environmental practices.

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BIB IV - I

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"EXCERPTS FROM ENVIRONMENTAL ASSESSMENT"**I. PROPOSED MITIGATION****A. AIR QUALITY****1. Burning Controls**

The slash and burn land clearing technique presently utilized in the project area creates low to moderate levels of air pollution as a result of smoke created during the burning process. The harmful effects to the population is minimized because of the relatively short period that burning is prevalent; the wide dispersal of the small farms on which it occurs; and the spatial relationship between the centers of population in the areas where the burning occurs. This project proposes to maintain the same type of land clearing and in the short run, the level of existing air pollution should not change. The mitigation of any increased pollution by virtue of larger areas of clearing can be accomplished by scheduling the burning to limit the amount occurring at one particular time.

2. Treatment of Roads

Most of the roads in the area are surfaced with lateritic soils. During the dry season, vegetation, buildings, etc. are covered with the reddish dust. While the best mitigation would be to pave the roads, this is not feasible because of existing economic conditions. It is more important at this point to provide access to the areas than to pave the roads which are constructed. Additionally, there are long expanses of the roads which do not pass near residences or villages. It was noted, however, that the Ministry of Public Works has an ongoing paving plan for primary highways. One form of mitigation would be to pave high roads in the vicinity of inhabited areas first, paving between such areas as funds become available. Another means of mitigation would be to wet the road in the vicinity of villages and towns, but in view of the lack of equipment and water in the area, this is not a valid alternative and could be only accomplished in a few areas. The use of chemical dust retardants (e.g., calcium chloride) at least in proximity to heavily populated areas should be explored, and used crankcase oil should be used to treat surfaces near maintenance areas and wherever else possible during the dry season.

3. Agricultural Applications Training

Air pollution also will result from applications of pesticides, herbicides, and fertilizers. While there is no way to eliminate air pollution during these applications, any pollution can be minimized by applying these materials during periods when there are no high winds, and when the

other climatological and meteorological conditions are such that the dispersion into the air is limited. The farmers will need education and training in the application of these materials, as discussed in Section C, Chemical Exposure. The training to reduce the air pollution should be discussed during the same training session.

4. Construction Controls

During construction, heavy equipment will generate smoke, fumes, and dust along the rights-of-way. The amount of smoke and exhaust fumes can be minimized by ensuring that all equipment is well maintained and properly operated. The contractors should be required to use dust abatement procedures during work periods, such as water sprinkling. Proper work scheduling to minimize the amount of construction occurring at any one time also will reduce pollution from construction equipment.

B. WATER QUALITY AND SUPPLY

The principal problem of water quality and supply in the project area is the cross contamination that frequently occurs between human wastes and the drinking water supplies. At the present time the local population is unaware of the problems thus created. The development of reasonable water quality in the study area requires the development of good potable water supplies that are readily accessible to the general population, and the development of controlled waste disposal site, and educational/monitoring teams. The continuation of the Government of Liberia well-drilling programs and project-related well-digging stimulation are necessary. Education in this field will be dispensed through the various project educational programs and expanding community schools. The Schistosomiasis Control Teams could be utilized to monitor water quality and to note and correct obvious pollution problems. Project management must ensure that proper sanitation measures are taken during the construction and operational phases in order to both educate the personnel involved and to avoid new pollution problems.

C. CHEMICAL EXPOSURE

A considerable likelihood exists that the rural population will be exposed to several potentially toxic chemical elements. These include pesticides and herbicides used in the agricultural activity as well as perhaps certain other chemical substances of more or less toxic nature. Mitigative measures would involve two basic activities: training of the rural farmer in the dangers and uses of these substances (e.g., results of misuse, proper quantities of usage and methods of application), and inspection and monitoring to ensure compliance. Water supplies should be monitored for toxic elements during normal monitoring processes and

immediate corrective action taken in the unlikely event of evidence of chemical pollution. All appropriate CEQ Guidelines will be followed.

D. PUBLIC HEALTH

In order to combat some of the potential adverse impacts associated with the disease organisms that might affect public health, as well as any other health problems, health education, and monitoring and control would be instituted. The former will probably be an extension of the second function, but it is very important. If the population does not understand some of the causes of the health problems, they will be unable to protect themselves against the dangers. With proper implementation of other governmental program, project educational programs and health teams (particularly the Schistosomiasis Control Team), education, monitoring and control programs could be accomplished. The improvement over current standards could be dramatic. With respect to most significant diseases found in the rural area, to control vector-borne disease it is necessary to break the vector cycle. This can be done through education of the population or controlling one of the vector elements at some point in the chain or through chemotherapy, treatment of the disease in the individual, or a combination of these factors. Project programs which are established should take into consideration the requirements of such rules. With respect to specific diseases the following mitigation measures would be utilized:

1. Malaria - it is already known that malaria has a very high prevalence in the project area. An attempt to specifically monitor existing malarial conditions would be made. Those people participating in or impacted by the project would be subject to a program of prophylaxis and a vector control program such as spraying and grading would be instituted to limit mosquito breeding areas. Education programs would include explanations of the specific causes of malaria and preventative measures.

2. Schistosomiasis - Basically the control of the transmission of this particular disease is the key to a successful program. Included are chemotherapy, control of snails, prevention of water contact, and prevention of water contamination. It is already well demonstrated that the area has a high prevalence of schistosomiasis and that a surveillance program is an integral part of the project. It is oriented toward the development of schistosomiasis health data and the control of snails to the extent possible. Participants in the project would be educated as to the vector cycle, field and laboratory techniques, prevention techniques, sanitation and chemotherapy applications. Project programs would be coordinated with higher level Liberian schistosomiasis surveillance activities. Every effort would be made to determine whether or not the project is, in fact, having some impact on the specific project area. If

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a negative impact is detected, more stringent control measures would be instituted.

3. Trypanosomiasis - There is some indication that there is a residual amount of trypanosomiasis endemic to the population of this area. At this time, it does not appear to be a significant problem, but a surveillance program would be established to monitor the situation.

4. Onchocerciasis - The prevalence of onchocerciasis in the project area is quite high. However, this problem is confined to those areas involving running water. Those very few areas wherein newly created or increased moving stream volumes result from project activity would be closely monitored. Should any negative impact be noted, appropriate control measures would be taken in coordination with the Ministry of Public Health.

5. Lhasa Fever - While there is no indication Lhasa fever is endemic to this specific area, there is reasonable presumptive evidence that it might be. Simple vector controls instituted in advance would probably eliminate any potential problem before it occurs. A rodent control program would be instituted and the storage graineries would be made as rodent-proof as is realistically possible.

E. SOILS

1. Cultivation Training Programs

The agricultural pattern traditional to the Upper Bong County farmers prevents soil erosion by allowing the soil to return to natural vegetation after approximately 2 years of cropping. Agricultural practices which are part of the proposed project will reduce the requirements for shifting from field to field, thus increasing the potential for erosion. As part of the training program for the farmers, the individuals who will take part in the project would be instructed on the need for proper conservation practices and techniques. Such techniques would include the necessity for cover crops to reduce erosion potential, site selection and use, rainy season protection, and other soil conservation techniques. Projects in other parts of tropical Africa have indicated that soil erosion can be minimized by proper training and practices.

2. Cultivation Techniques and Practices

In lieu of the natural vegetation which prevents soil erosion, this project proposes to introduce tree crops in the second crop year. Both coffee and cocoa will be planted with 10-foot spacing in each direction, and shading plants such as banana and cassava will be planted between the coffee and cocoa. This system of planting has been widely utilized through-

out tropical regions without causing adverse erosion and no increased damage is expected in the upland areas. A study was conducted of the hydrological effects of a change in land use from rain forest to tree plantations in Kenya (Blackie, 1972). That study showed that the critical stages in the development of land from protective forest to the cover of a tree crop is possible without permanent deterioration of water resources in either quantity or behavior. The study area was cleared and planted as a tea estate which proved to be a hydrologically effective substitute for the natural forest. However, to obtain these results, full implementation of conservation techniques must be utilized. Therefore, the cultivation techniques and practices which are used will determine, to a large extent, the impact on erosion. On slopes of any significant degree, all cultivation would be performed in a manner to slow run-off as much as possible, and plantings would occur at such time that sufficient ground cover will be available before the rainy season.

3. Soil-Enriching Cover Crops

The selection of areas for incorporation into this program would be carefully made to insure that farming does not occur in areas where excessive slopes or highly erodible soils are present. The purpose of this project is to improve the agricultural yields of the farmers in Upper Bong County, thus increasing their income and eventually improving their standard of living. There is no provision made in the proposal to plant crops specifically for the purpose of enriching the soils. If areas which are initially cleared for farming are abandoned for any reason, consideration should be given to planting legumes to provide ground cover and soil enrichment.

F. CULTURAL

1. Housing Program for Population Redistribution

It is expected that the rural development project will decrease population migration because of the improved yields and increased income to the farmers. Population within the project area will become more aware of the increased need for services associated with farming and may generate toward the natural community centers where the inputs and produce are processed. It is unlikely that there will be any major population shift, or any significant redistribution. While some farmers will move to new locations to participate in the program, there is no new housing program planned. The procedure for building houses in the project area is simple and inexpensive, and is commonly carried out by the individual families. Therefore, the impact of any population redistribution is minor, and the impact as far as housing the individual farmers is negligible. Excepting those programs indicated under public health, no mitigation measures are required.

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2. Education and Training Programs

Most of the training programs will be for the purpose of educating the inhabitants of the project area as to procedures required to participate in the redevelopment program. Among the items to be explained are improved cultivation and harvesting procedures, the purpose for cooperatives, etc. Some training programs will be established to train staff members, however, these programs will be very specific in subject matter and will be taken by a low percentage of the inhabitants of the area. Included in this category are extension aides, cooperative staff members, and others. The impact of these training programs will be to provide the individuals taking part in this program with information to upgrade their agricultural practices. From a cultural standpoint, the program will probably result in a desire of farmers not included in the project to receive similar training in order to improve the yields on their own farms. Therefore, it is likely that the rural redevelopment project will result in a demand for improved training, more inputs for agricultural areas, and better marketing procedures throughout the areas surrounding the Upper Bong County project.

As the training increases, the participants in the program are going to be made more aware of the necessity of educating themselves and their family in various other aspects. Seven community schools are planned for the project area, and the information and training received in these project schools will be more relevant to the conditions which exist than the former formal schooling. Therefore, it is likely that the result of the training and educational programs will be a population more aware of the possibilities and potentials for increased agricultural production, increased income, and improved standard of living. Health care and social programs will become more accessible, and the demand for such programs should increase. The educational and training programs should also assist in making the inhabitants in the area aware of the necessity of improved sanitation and improved water supplies.

II. UNAVOIDABLE ADVERSE IMPACTS

The implementation of a plan for agricultural development in an underdeveloped country will necessarily have certain unavoidable adverse impacts. These impacts are those which cannot be prevented by mitigatory action.

The most obvious impact of the development is the alteration of its natural or existing ecosystem because of the large amount of land to be cleared annually by the "slash and burn" agricultural technology. This natural habitat destruction will not be appreciably more than under existing traditional practices. The size of the project area is 2,507

square miles, of this 14,210 acres will be cleared for upland rice production by the fifth project year. The cleared land will be primarily secondary upland forest. About 3,190 acres of this land will be abandoned after one year of upland rice production and one year of cassava production and allowed to return to natural succession. The remaining acreage will be permanently converted to tree crop plantation, 7,410 acres of cocoa and 3,610 acres of coffee. The construction of 105 miles of farm to market road within an 80 foot right-of-way will permanently alter another 1,020 acres of land, mostly upland forest. Natural habitat loss is partially mitigated by virtue of lack of wildlife in the study area. Most larger species have disappeared through years of hunting and shifting cultivation practices.

In addition to the destruction of upland forest, 4,080 acres of swamp will be cleared, leveled and farmed for swamp rice production, while another 1,000 acres of swamp, which is currently in swamp rice production, would be improved to provide for the use of modern technologies. The loss of natural swamp land is somewhat mitigated by the natural tendency of swamps to become arid during the dry season.

Several components of this project will lead to some degradation in air quality, especially on a localized basis. The "slash and burn" technology currently utilized in the area will be continued after project implementation. Air quality degradation caused by smoke from these operations will continue, even though burn scheduling can reduce the acuteness of this situation. Road construction also will lead to some air pollution on a short term basis, but road watering can sharply reduce the amount of fugitive dust entering the atmosphere. Another source of air pollution is hydrocarbon emissions from machinery such as road and agricultural equipment used in project development.

The quality of water in the project area will be adversely impacted by project implementation, although the degree of this impact is largely dependent upon prior mitigation efforts. Runoff from road construction sites will lead to increased turbidity levels in associated waterways, however; careful planning and the use of silt traps can probably keep turbidity levels from becoming detrimental to aquatic life. The runoff from agricultural fields will be more deleterious to water quality due to its chemical composition and sustained usage.

Pesticides used in the project area will be incorporated into the waterways in some concentration. The level of concentration will depend on the persistence of the particular pesticide, the environmental conditions and the methods of application. If concentrations are sufficiently high, ecological or public health damage will occur either by exposure, direct human ingestion or ingestion of fish or other aquatic organisms in which pesticides have been accumulated. Runoff from agricultural land on which

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fertilizers have been used usually contains high levels of nutrients, especially phosphates and nitrates. These nutrients generally lead to eutrophic conditions in impounded water such as might be found in irrigation water supplies. Eutrophication caused by agricultural runoff will not be of sufficient magnitude to cause significant environmental damage, however, unless incorrect applications or unusual environmental conditions are encountered.

III. RECOMMENDATIONS

During the course of observations, research and analyses conducted as part of this study, a number of suggestions and recommendations were developed. Many of these are simply a matter of emphasis and prioritization of particular project facets. Others involve potential changes to particular project components.

A. AGRICULTURAL

1. A clear definition of the manner in which cash crops shall be developed and cared for should be formalized. In regard to both cash crop and swamp rice development, the relationship between project paid labor and the farmer/owner requires clarification.
2. A great emphasis should be placed upon the selection and training of the various type instructors intrinsic to the program. To this end, it is recommended that a clear set of job criteria be established and applied.
3. In order to derive the greatest possible benefit from project effort a system of monitoring progress and updating farmer education should be adopted and implemented by extension agents.
4. It is recommended that the ratio of extension agents to farmers be re-examined particularly beyond the fifth project year. It is believed that too drastic a cut-back of the number of extension agents would be detrimental to overall project goals, particularly in relation to cash crop cultivation.
5. More flexibility should be considered relative to the double cropping of swamp rice. It is suggested that double cropping may be significantly increased as farmers reach an adequate level of sophistication through observation of double cropping areas and field experience in single crop areas.
6. It is recommended that consideration be given to the construction of more permanent type water impoundment structures than are currently

envisaged and that equal consideration be given to the construction of adequate spillways and bypasses to avoid excessive flooding. While initial costs may be somewhat higher, it is believed that more permanent structures would be more economically sound in the long run than the structures presently envisioned, because of intrinsic maintenance and rebuilding costs.

7. It is suggested that all storage areas be constructed of the best possible materials to permit adequate pest and rodent control and to avoid wastage. In the same context, programs for the fast marketing of collected rice and other produce should be established.

8. While not specifically a portion of this project, it is recommended that all encouragement possible be extended to research programs for the development of cattle and draft animals suitable to the Liberian environment and resistant to prevalent disease. Cattle to provide the meat currently missing from the Upper Bong County diet and draft animals for agricultural endeavors would further the health and productivity of the rural farmer.

B. ENVIRONMENTAL

1. It is believed essentially that a water quality monitoring program be established and implemented by the Schistosomiasis Surveillance Team and that the team be trained in the sampling and monitoring procedures for pesticides and fertilizer, as well as suspended sediments to identify potential erosion problems.

2. It is suggested that every possible care be given the sizing and construction of culverts and bridges on farm roads and that as far as possible they be designed and constructed to permit an unrestricted flow of water under normal conditions.

3. It is recommended that the program contain a restriction on the cutting and clearing of any natural prime forest remnants. It is suggested that older secondary forests be avoided to the maximum extent possible to encourage the regeneration of this valuable habitat.

C. HEALTH

1. All extension agents and Schistosomiasis Surveillance personnel should be trained in sanitation and well digging and be acquainted with the overall well development program of the government. They should be utilized to teach sanitation and emphasize and encourage well construction wherever possible during the conduct of their normal pursuits.

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2. It is suggested that programs for training in the application of insecticides and molluscicides in paddies and oil and insecticides in road ditches be established. Additionally, a test program of biological vector control utilizing gambusia should be established for natural swamp areas.

3. It is recommended that specific personnel be assigned the task of coordinating the results of project monitoring programs with other health teams and the Ministry of Health and communications be established to permit the input of other health organization efforts to be incorporated into the project consideration.

D. SOCIAL AND CULTURAL

1. It is recommended that a system of coordination be established between project educational programs and the community school educational efforts in order that each endeavors complement the other.

2. It is suggested that a program of ongoing explanations and instructions in cooperative operations; loans, input, marketing, etc. be implemented by the extension agents at the village level to permit a gradual infusion of knowledge relative to cooperative services. It is believed that particular emphasis should be placed upon loan structures and responsibilities.

3. As cooperative meetings become reality, it is suggested that they be utilized for ongoing instructions in such manners as sanitation and health, land ownership, and fiscal relationships.

E. ECONOMIC

1. It is recommended that a system of inspection and supervision of cooperative operations be established to ensure fairness to the farmers and to monitor fiscal liability.

2. It is suggested that coordination be established with the Ministry of Finance and that a program of evaluation for the eventual development of a rural banking system in the study area be instituted. With project success it is only a matter of time before such an institution will be essential. Included in any such program should be procedures for basic financial instructions at the village level.

3. It is recommended that a firm system of seasonal price stabilization for cash crops be implemented and that an explanation of this system be extended to the village level in order that farmers may fully understand the program.

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4. It is suggested that consideration be given to the possibility that a 95% return on loans may be somewhat over optimistic and that if upon re-evaluation such is deemed the case that the financial structure of the project be reorganized accordingly.

F. PROJECT

1. Since the key to the success of this project rests with the personnel engaged to implement it, it is suggested that every means available be utilized to ensure the quality of personnel required at each level of endeavor. It is suggested that it is imperative that personnel be dedicated, well trained, and willing to put forth the effort required to be effective at his job. It is recognized that trained personnel in every category may be difficult and/or impossible to obtain. Wherein this is evident, adequate training programs should be established to upgrade the knowledge and competence of obtainable personnel.

2. Apparently, the success of the project is tied to increasing the average number of productive man days per year per farm holding over its existing level. This increase may occur more gradually than presently projected unless the initial project participants are sufficiently motivated. Therefore, it is suggested that a screening and indoctrination program be established, particularly in the first years of the project.

AID and other Relevant Experiences:

1. Introduction

Certain salient findings and questions from previous experience with the design and implementation of integrated regional style agricultural development projects in Africa is discussed herein. Discussion is organized under headings which relates to principle features of the Bong County Rural Development (RD) project proposal, e.g., "Local Participation", "Small Farm Technology", "Agricultural Cooperatives", "Small Farm Credit", etc.

In part, this discussion provides partial explanation of the rationale behind many aspects of the present design of this project since the project design represents to a great degree, a response to the most recent theoretical and empirical knowledge of rural development.

For purpose of this Project Paper (PP), an important value of this discussion of previous experience is to remind project managers of possible development constraints which may require consideration, monitoring and/or response during project implementation. Emphasis of the discussion is on difficulties commonly encountered in other similar projects and methods devised to address those difficulties. Reference to such experience can minimize surprises over the project life from unplanned or unanticipated results and can assist project managers to form late administrative or resource allocation response as needed.

While a review of previous experience points at certain findings, knowledge of the rural development process in Africa is still quite rudimentary. The complexity and diversity of development efforts undertaken to date under differing political, technical and economic/social conditions makes it difficult to make definitive generalizations about what works and what doesn't work. Recent reviews and analysis of several dozen development projects in Africa has produced, however, an extensive catalog of insights regarding the constraints and potentials encountered, and about the project mechanism developed and their apparent degree of success.

In reviewing previous experience relevant to this project, principal sources of information have been: The Design of Rural Development, Lessons from Africa, 1975, a World Bank Research Publication by Uma Lele and Strategies for Small Farmer Development: An Empirical Study of Rural Development Projects, May 1975, a report prepared for AID by Development Alternatives, Inc. (DAI). The theory, data and empirical knowledge in the World Bank publication is drawn from analysis of 17 rural development

projects in Africa. The study provides practical guidelines for the design, implementation and evaluation of projects and RD policies. The DAI study, also developed to provide practical guidance to project designers and implementers is based on statistical correlation and analysis of apparent factors and conditions of project success identified from 38 project studies, 22 of which were African projects. Together, these two sources probably represent the most comprehensive distillment to date of lessons from recent RD practice in Africa.

2. Summary Findings:

A. Results to date and determinants of project success. — Several of the projects analysed have been successful in achieving certain major objectives including substantial increases in crop production/productivity and increases in small farm income and welfare, but more projects appear to have been unsuccessful in achieving major objectives. Most of the relatively successful projects have suffered from important deficiencies which appear to have impeded their success in generating desirable sustained post project development.

The effectiveness of agricultural development projects is related to a combination of factors including:

- (1) Limited objectives without reference to noncommittant essential conditions;
- (2) Limited knowledge of broad sector policies and their impact on project activities.
- (3) Inability to change national policies to accommodate project strategies.
- (4) Inadequate small farm technologies
- (5) Administrative weaknesses
- (6) Lack of consideration of socio-cultural impact
- (7) Inflexibility in modifying project during implementation
- (8) Shortage of trained manpower.

Some of these major limiting factors have been or are being addressed in successful or promising ways by on-going projects. Some of these ways are mentioned in relation to major Bong project features.

The Uma Lale and DAI reports illustrate that the major determinants of project success vary from project to project and demonstrate the need to consider carefully the specific constraints and the technical, economic, social, and administrative feasibility of removing those constraints in each individual case.

B. National Policy — More than previously recognized, project success relates to national policies and institutions. While the experience discussed herein is not directed at examining national policies and institutions, there are a few references to interactions and inter-dependencies between Bong project activities and national policies and institutions. Important interfaces of national policy and project activities generally occur in relation to:

(1) Project administration —

- Provision of goods and services by GOL agencies
- Interrelations of the PMU, the district administration, the district committee
- Phase over of PMU functions to GOL and private bodies

(2) Marketing & Pricing

- Adequate price incentives for food production by small farmers
- distribution of project generated benefits to small farmers
- provision for adequate infrastructure (roads, storage, markets) for marketing food

(3) Land tenure

- protection of small farmer land rights
- avoid increase in numbers of tenant farmers and landless laborers.

3. Local Participation

Within rural development theory and practice, evidence point to the concept of genuine local participation in project planning and implementation as an essential ingredient of equitable and self-sustaining small farm development.

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The advantage of small farmer participation includes:

(1) Incorporation of local knowledge of actual agricultural constraints into development plans. Reliance on local knowledge can considerably reduce the likelihood of introducing unfeasible technologies or methods, and can generally help offset the general lack of knowledge and data about small farm systems in particular areas.

(2) Increased local understanding and interest with a higher level of community commitment and effort.

(3) Increased efficiency in providing development inputs. Where local farmers are trained and motivated to carry out functions related to the provision of farm credit, other inputs, etc., project costs are reduced.

(4) Increase in numbers of farmers reached -- where farmers provide project related functions for themselves, a critical constraint on the number of farmers who can be served by the limited number of trained project technicians is lessened.

(5) Greater institutional development at the grass roots as a basis of sustained self development.

(6) Greater equity of benefits distribution -- simply reaching the bulk of the small farmers with farm inputs and project benefits has presented a major challenge for all projects. Where local farmers can be delegated genuine authority to allocate development resources within the village and where income and power in the village are relatively equitably shared then farmers may often be expected to allocate project resources equitably among the poor majority of farmers.

The Bong project calls for extensive farmer participation in project planning and implementation with respect to several project activities including (a) farmer credit; (b) overall village agricultural planning; (c) swamp rice development; (d) coffee and cocoa development; (e) farm input delivery; (f) produce marketing and (f) extension farm experimentation.

The organizational plans and procedures for effecting farmer participation remain largely to be developed and implemented by the Bong Project Management Unit (PMU). The formulation and application of these procedures are vital. Theoretical commitment to farmer participation is usually not effectively translated into genuine participation. Project technicians under pressure to meet predetermined input objectives and production targets have little tendency to permit modification of the project to innovate in providing farm commodities or services or to permit actual

delegation of authority.

Tests of actual farmer participation are whether or not farmers have formal input into the planning process and whether or not project activities can be modified on the basis of local reaction. Where formal procedures don't exist for farmer participation, one must rely on project managers and local officials to somehow take farmer concerns into account— a typically unfounded expectation.

The form of local participation is a fundamental factor in determining how equitably project resources will be applied. If local participation is dominated by the larger commercial farmers, then project resources will probably be diverted largely toward commercial development by those larger farmers.

Within the Bong project, agricultural cooperatives are intended to be the principal vehicle for delivering goods and services to the village level. Whether or not these resources effectively reach the small farmer will probably depend greatly on the role played by small farmers in the cooperative movement. Refer to "Agricultural Cooperatives".

4. Technology

The lack of true small farmer relevant technology has been a major constraint crop production program. This has been particularly true for food crops partly because food crop research has received much less emphasis than research on export crops. Also, food crop technologies have often not been compatible with the small farm cropping systems. These systems are vital to small farmers for minimizing risk and ensuring subsistence under all conditions. Most projects have suffered from a serious lack of adaptive research to experiment with "improved" varieties and practices under local physical economic conditions.

"The importance of such adaptive research and the present technologies gap cannot be overstated." 1/

The Bong project finances some adaptive research for project crops. The rice, coffee, cocoa, and vegetables "packages" to be used under this project will be suitable in the project area. But in view of delays in improving research capacity at the CAES thru other project support, the ability of the CAES to provide effective adaptive research for the project in the early years of implementation may be questioned. Project managers may consider conducting some field trials under different field conditions to determine their apparent technical/agronomic and economic suitability. Close scrutiny may be particularly appropriate in relation to the upland rice package being offered.

1/ Page 180 "The Design of Rural Development: Lessons from Africa, 1975, Uma Lele, a World Bank Research Publication

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5. Small Farm Credit

A. Reaching Small Farmers --- Few of the projects reviewed were successful in providing farm credit to the poor majority of farmers.

Obstacles relate to:

(1) The complex procedures for determining eligibility and administering credit issuance and repayment. Procedures are normally extremely demanding of scarce trained manpower which makes small farm credit costly to administer and effectively limits the number of individuals who can be served by the few credit administrators.

(2) The poor majority of farmers have been frequently banned from receiving farm credit because they were considered relatively higher risk individuals than more well-to-do farmers. In fact, in small scale credit distribution on a mass scale, using traditional approaches, seems neither administratively practical nor financially feasible. ^{2/}

The Design of Rural Development recommends that wherever social systems will permit, group responsibility methods should be used if the small farmer is to be reached effectively.

Building village level competency to administer and be responsible for small farm credit is itself a complex endeavor however. Under pressure to issue small farm credit to targeted members of farmers, previous projects have frequently paid inadequate attention to the village level dialogue and institution building with the result that credit use and repayment have suffered.

"It cannot be overemphasised that at initial stages project expansion must take place at a slower pace than has been the case in the projects reviewed." ^{3/}

Meaningful local participation has also been precluded by lack of numeracy and writing skills by villagers.

B. Credit repayment ---

Small farm credit repayment rates have varied considerably from 90 to 95% in several projects studies (WADA, CADU, MPP) to very poor levels of less than 50%.

^{2/} Page 92 - "The Design of RD, Lessons from Africa, Uma Lele

^{3/} Ibid, p. 99

A principal factor in loan repayment has been the profitability of the technology used. Other factors have been administrative, social and political.

Group repayment schemes have been operated successfully but analysis doesn't explain much about why.

Under WADA in Ethiopia, geographic areas were out of the credit program wherever group repayment dropped below 50%. This appearance was a successful strategy under the circumstances there.

Where credit repayment has been poor, there is ample evidence that administration of credit repayment has often been poor. Where non-repayment precedents have been established early without strict retribution, repayment rates have rapidly worsened. Where low repayments has persisted among significant elements of the farming population, political resistance has even developed plans to crack down and improve payment. Court sanctions have nearly always proven unresponsive and ineffective in inducing repayment.

6. Marketing and Pricing

"A variety of marketing approaches have been used in the various projects reviewed. These various approaches have, however, consistently failed to show potential for a viable low-cost approach that will also provide incentive for increased agricultural production. ^{4/}

The significant deficiencies of the marketing schemes analyzed points to the need to explore pluralistic approaches, including encouragement of traditional marketing channels and traders, in the development of marketing institutions to reduce costs, improve efficiency and draw growth linkages with the rural economy.

The Bong project relies on a pluralistic approach for food crops, marketing in that cooperatives purchases of rice is a device for price support intervention and for facilitating in-kind repayment of farm credit. Nevertheless, experience would indicate that the LPMC and cooperative produce marketing operations can be expected to display aspects of problems encountered elsewhere.

RD projects normally introduce produce marketing components for one or more of the following reasons:

- (1) to avoid a precipitous drop in produce prices in the project areas, i.e., where existing market structure may not be sufficiently

4/ Page 102 Ibid

developed to market the expected increase in crop production.

- (2) to avoid exploitive and allegedly inefficient trade channels
- (3) to facilitate the collection in kind of farm credit.

For the most part, RD projects have established formal marketing channels to achieve these objectives. These formal schemes have seldom functioned efficiently and this has become particularly evident in the marketing of food crops. In addition, the formal trade channels normally have limited administrative capability and often undermine the potential viability of existing private informal trading channels.

Difficulties encountered in the formal systems are:

- (1) Lack incentives for marketing boards to handle store and market food crops because of low margins and profitability compared to export crops.

- (2) inability to provide efficient marketing services -- even the most efficiently organized marketing schemes involve much higher costs than do the traditional alternatives.

- (3) Contention between marketing boards and project management units over prices offered to farmers -- prices offered to farmers -- prices are usually lower than offered by merchants because of the higher costs involved.

- (4) Contention and lack of trust between farmers and project managers because of the low food crop prices offered.

- (5) Food crop surpluses have outstripped the marketing capability of the formal marketing systems.

Under certain circumstances, however, formal marketing systems have been successful enough in achieving the objectives to permit development where it could not have otherwise occurred. Farmgate prices have been maintained at levels adequate to induce increased production in relatively isolated areas where crop surpluses would have pushed prices below costs. Also in some cases, farm credit repayment appears to have been facilitated by repayment in kind/marketing schemes.

The Bong project provides for formal project sponsored marketing procedures for coffee, cocoa and rice and permits private trade in rice. While this pluralistic approach offers good potential for satisfactory marketing solutions, considerable shakedown and adjustment of the system

should be anticipated. Assuming the inherent inefficiency of government marketing channels, the marketing schemes should be reviewed over project life for opportunities to stimulate higher level of private competition.

7. Agricultural Extension

Most of the projects reviewed in the World Bank and DAI studies had incorporated project features to address the problems normally associated with the traditional extension approach in Africa—low pay, ill trained, ill equipped agents with facility technical package.

The most common response has been to increase the intensity of the extension agent/farmer ration. Experience demonstrates other essential conditions for extension success:

- (1) Availability of highly profitable technical package
- (2) Incentive system to elicit motivated performance
- (3) Active support and participation of farmers
- (4) Good training
- (5) Relief from the burden of delivery farm inputs

These conditions are briefly discussed below:

The importance of the technological package has been described under "3-Technology".

More important than the extension agent intensity is agent performance. Agents must be adequately motivated and this means at a minimum adequate salary and promotion. Integrated style projects can normally provide these incentives but difficulties have been encountered if members of the project staff are asked to perform to high standards while restricted to government wage scales. Also, reintegration of project staff into regular regional or national agencies at the end of the project is frequently difficult.

Perhaps the most crucial factor in the success of an extension program—(is) the extent of popular interest." ^{5/} Again, we are faced with evidence that the concept of "farmer participation" is more than a nice theoretical concept, but a vital approach to development which directly relates to most project features. Several methods of inducing local interest and participation have been attempted. The most common method involves the selection of progressive "model" farmers who are to

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demonstrate new technologies and help propagate their spread to other farmers. While this method has been successful, particularly in increasing production of export certain drawbacks have been noted. Model farmers chosen by project management staff or local administrators have not usually been typical farmers. They are often younger, have more land, are relatively better off and have more education. They may not be individuals best suited to popularize innovations. Attention to them may involve neglect of the poorer farmers and arouse suspicion and envy of the model farmer.

Methods which have shown some success in overcoming these negative aspects have emphasized a process of involved large numbers of farmers in the extension process including discussion of individual and group needs, large numbers of demonstrations which many farmers engaged in testing various innovations, systematic group exchanges of ideas and experience regarding the adoption of new innovations. Such methods may engender an atmosphere of mutual learning and helping. The initial cooperating farmers would be selected by the farmer groups.

Other aspects of extension frequently overlooked are attention to women farmers and women extension agents. Coordination of extension activities is needed to avoid confusing or contradictory guidance to farmers from land development cadre, cooperative agents, extension cadre, tree crop specialists, etc.

8. Agricultural Cooperatives

Cooperatives are to provide marketing, credit, and farm input supply services under the Bong County RD Project. These services components are discussed elsewhere but reference to the special nature of agricultural cooperatives and their relation to these services is called for. Cooperative development is a major institution building task which requires organization, leadership and entrepreneurial ability. Where cooperatives have been developed, they frequently become the instrument of rural officials and other rural "elite", and tend to divert development resources away from the poorest farmers. In developing and evaluating cooperatives and cooperative services, it is essential to analyse who controls and who is served. Cooperatives run on a strictly commercial basis may in fact suffer from conflicting objectives-- to serve the rural poor or to make a profit. A related problem has been the degree of fraud in conjunction with cooperatives.

Cooperative officers have generally received inadequate and irrelevant training. Besides providing the conceptual grounding, training must be job and task related. Emphasis on practical aspects of organization and management are needed.

A major difference between cooperatives engaged in marketing export crops vs. cooperatives engaged in marketing crops is that food crop marketing demands the ability to operate profitably in competition with private traders in small disparate markets. Under the Bong project, this problem may be temporarily avoided since the cooperative role in rice buying will be essentially the same as its role in coffee and cocoa marketing, i.e., purchasing rice at a fixed price at fixed margins as an agent of the LPMC. Under the Bong project, the LPMC will in effect be assuming the risks involved in competing with private traders, e.g., being caught with a store of high cost grain which can't be marketed domestically at prevailing prices.

While cooperatives are intended as the vehicle for small farmer participation and for providing small farm services, they have seldom evolved this way in Africa. Since small farmers don't possess the requisite literacy/numeracy and management skills to run the cooperatives as they have normally been instituted, small farm interests have not been well represented at the cooperative level. "All too often it is the relatively better off farmers who control the cooperatives and who are subsidized through programs." 6/

While this conclusion may have somewhat pessimistic implications for the cooperative development aspects of the Bong project, it may also encourage project managers to experiment meaningfully with genuine small farmers participation and control of project resources at a lower "sub-cooperative" village level.

9. Project Administration

Project administration called for under the Bong project involves three complex tasks:

- (1) Developing a parallel administrative authority to carry out development.
- (2) Establishing coordination with existing indigenous institutions to achieve effective administrative support.
- (3) Integrating project authority functions back into regular governmental administration without jeopardizing the post project performance.

The establishment of autonomous project authorities has been used successfully to bypass several inefficiencies in the existing administrative structure. Primary constraints to the use of regular administrative organizations has been the serious lack of trained host country manpower,

6/ P. 111, Ibid

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the difficulties of inducing government officials to work in isolated areas and projects, the low level of competence of local farm service manpower in the area, the lack of coordination among the various agency services performed, and the inability of central authorities to administer at long distance programs in isolated areas in a manner responsive to local needs.

By providing on-the-spot management and financial control over farm support services in the project area, and by extensive hiring and training of farm support staff, semi-autonomous project authorities can effectively produce the desired project impact in a relatively short time period while at the same time providing a demonstration effect.

The nature and complexity of the management systems and administrative procedures used are a primary determinant of the number of farmers which can be effectively reached. Overly complex administrative procedures are demanding of scarce trained manpower and limit the numbers of persons which can be effectively served. On the other hand, inadequately administered programs can result in loss or diversion of project resources. An excellent example of the relation between project administration and project beneficiaries is provided by small farm credit activities where administrative complexity may often be a more serious constraint than available financing. To a large degree, it is the limited and costly availability of trained project administrative staff which demands attention to innovative departures involving farmer participation.

A common and serious deficiency of semi-autonomous project authorities has been insufficient attention and preparation for the takeover of project related functions by host country institutions. Yet such "integration" is imperative if project efforts are to result in more than short-term benefits without spread effect. During project implementation, project managers operate in response to numerous immediate production and institution building targets with little time or urgency to be concerned with an institutionalization of farm support services beyond the project life. Besides the lack of urgency, serious obstacles to effective integration of functions include: differential salary levels, differing operational salary levels, differing operational procedures and conceptual differences. The first step in integration is adequate training and assumption of responsibilities for indigenous counterparts. Other major steps involve appropriate coordination over the project life with supporting institutions including local government. The final step is the gradual and systematic phase over the project authority functions to local authorities.

The success of this turnover relates greatly to national perceptions and preparation of the government regarding the overall improvement of

administrative and institutional performance. Without broad attention by the government of post project performance and to supervision of the phase over of project authority functions, little long range institutional benefit will be achieved.

A significant element of this project relates to the continuing dialogue largely between the IBRD and the GOL to develop a permanent Rural Development Authority or otherwise institutionalized government support to integrated style rural development in Liberia. At this level the role of county authorities and local officials become important also.

The participation of regional officials and leaders represents a relatively undefined aspect of this project. The functions of the advisory committee to the PMU must be throughout as part of the process of planning the institutionalization of farm support services.

In many cases, regional authorities and leaders have been found to represent different interests than the majority of small farmers.

ANNEX III

AGREEMENTS REACHED DURING IBRD/GOL LOAN NEGOTIATIONS

During negotiations, assurances were obtained from the Government that:

1. After June 30, 1977 MA would not undertake any new large-scale mechanized land-clearing activities for tree crop development in the project area until credits provided by the project have been fully employed.
2. LBDI will establish banking facilities at Gbarnga by June 30, 1977.
3. GOL will review with the IBRD by December 31, 1978 the findings of the schistosomiasis monitoring unit and promptly act to institute the required preventative and curative measures in the event of a marked increase in the incidence of schistosomiasis in the project area.
4. MA would provide the land for establishing project headquarters and constructing staff houses and other facilities.
5. By December 31, 1977, Government will prepare, for review by the IBRD, proposals and detailed cost estimates for the reorganization of agricultural research for Liberia.
6. Consultants employed to undertake studies relating to reorganization of MA, research and a further integrated agricultural development project will be appointed with terms of reference, qualifications and conditions of employment satisfactory to the IBRD.
7. Procedures satisfactory to the IBRD will be established for quarterly draw-down facilities from project account, including overdraft facilities.
8. Annual accounts of BPMU, the Revolving Credit Fund, the Feeder Road, Schistosomiasis Surveillance and Monitoring Units will be audited by external auditors acceptable to the IBRD and such reports will be submitted to the IBRD within four months of the end of the financial year.
9. BPMU will assume except for the AGRIMECO cleared areas at Kapartawee, sole responsibility for rice, coffee and cocoa extension services in the project area starting no later than September 30, 1977.
10. The Project Consultative Committee will be established at Gbarnga by September 30, 1977.

11. By September 30, 1977 GOL will establish a feeder road unit and amend the terms of reference for the existing Lofa Project Schistosomiasis Surveillance and Monitoring and Evaluation units to service the Bong County project; the work program, budgeting and recruitment of these units will be in consultation with the BPMU.
12. The Project Manager, managers of the Finance, Training, Agricultural Services, Cooperative and Credit Services and Administration Divisions, Swamp Development officer, the Land Use Planning officer and a Tree Crop specialist will be appointed on terms, conditions and qualifications satisfactory to the IBRD. Deputies to such positions will be filled by persons with adequate qualifications.
13. A revolving credit fund will be established in accordance with a trust agreement to be entered into between GOL and LBDI, satisfactory to the IBRD by June 30, 1977, and that GOL will ensure that the Fund's capital will be used exclusively for the purpose of smallholder credit.
14. The Manager of the BPMU Cooperative Credit Services division will be designated assistant registrar of cooperatives for Bong County.
15. After September 30, 1977, all farm inputs and credit provided in the project area by GOL or its agencies will be provided on the same terms as those provided by BPMU.
16. By June 30, 1977, the Government will present to the IBRD for consultation a proposal for establishment of an agricultural credit system in Liberia; within six months thereafter the Government will present to the Bank for consultation a detailed plan for implementation of an appropriate proposal.

ARTICLE III

Execution of the Project

Section 3.01. (a) The Borrower shall carry out the Project with due diligence and efficiency and in conformity with appropriate administrative, financial, engineering and agricultural practices, and shall provide, promptly as needed, the funds, facilities, services and other resources required for the purpose.

(b) For the purpose of carrying out the Project, the Borrower shall establish and maintain, under terms of reference satisfactory to the Association, the Bong Project Management Unit (BPMU), which shall have its own management, budget and financial control. Except as the Borrower and the Association shall otherwise agree, BPMU shall have five operational divisions: administration and personnel, agricultural services, cooperative and credit services, training, and finance.

(c) The Borrower shall employ personnel, whose qualifications, experience and terms and conditions of employment shall be satisfactory to the Association, to fill the following executive positions of BPMU: a Project Manager, who shall be the chief administrative officer and responsible through PSC to the Minister of Agriculture or his designee (whose rank shall not be lower than an Assistant Minister); the managers of the divisions of administration and personnel, agricultural services, cooperative and credit services, training and finance; a swamp development officer, a land use planning officer, and a tree crop specialist. The Borrower shall also employ the deputies to such positions, who shall be acceptable to the Project Manager.

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Section 3.02. The Borrower shall cause PSC to perform, in respect of the Project, inter alia the same activities that it has been performing under the Prior Project.

Section 3.03. The Borrower shall, not later than September 30, 1977, establish and thereafter maintain a Project Consultative Committee at Suakoko to ensure cooperation in the carrying out of the Project of the relevant departments and agencies of the Borrower in the Project Area and the participation of local farmers in the Project. Such Committee shall be chaired by the Superintendent of Bong County and shall include the Assistant Superintendent of such County; the chiefs of the 6 chiefdoms in such county; the heads of the local representations of the Ministries of Education, Health, Public Works, and Land and Mines; the chairmen of the cooperatives included in the Project, when they are organized; and BFMU's Project Manager and Deputy Manager.

Section 3.04. In order to assist the Borrower in the carrying out of Parts D.3 and E of the Project, the Borrower shall employ consultants whose qualifications, experience and terms and conditions of employment shall be satisfactory to the Association.

Section 3.05. The Borrower shall cause Part D.2 of the Project to be completed not later than June 30, 1977 or such other later date as the Association shall agree.

Section 3.06. The Borrower shall (i) not later than December 31, 1977, submit for review, and consultation with, the Association proposals, including detailed cost estimates, for the reorganization of agricultural research in Liberia; and (ii) promptly after the Association's approval, put such reorganization into effect.

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Section 3.07. Except as the Borrower and the Association shall otherwise agree, the Borrower shall, not later than September 30, 1977, grant to BPMJ, except for the areas in Kpartawee cleared by AGRIMECO, exclusive responsibility for rice, coffee and cocoa extension services in the Project Area.

Section 3.08. (a) For the exclusive purpose of the carrying out of the construction and improvement of feeder roads included under Part C.1 of the Project, the Borrower shall cause a special unit (the Feeder Road Unit) to be established, not later than September 30, 1977, in its Ministry of Public Works. Such Unit shall have inter alia its own personnel, management, equipment and separate accounts in respect of the Project, and shall prepare its operating plan in consultation with BPMJ.

(b) The Borrower shall maintain through its Ministry of Public Works the feeder roads referred to in paragraph (a) of this Section and keep separate accounts for such maintenance.

Section 3.09. (a) The Borrower shall, not later than September 30, 1977, amend the terms of reference of the existing Schistosomiasis Unit established under the Prior Project for the purpose of causing such Unit to carry out Part D.4 of the Project.

(b) The Borrower shall: (i) review with the Association, not later than December 31, 1978, the findings of the Schistosomiasis Unit in the carrying out of Part D.4 of the Project; and (ii) act promptly to take or cause to be taken any required preventative and curative measures in the event of a marked increase in the incidence of schistosomiasis in the Project Area.

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Section 3.10. The Borrower shall, not later than September 30, 1977, amend the terms of reference of the existing Monitoring Unit established under the Prior Project for the purpose of causing such Unit to carry out Part D.5 of the Project.

Section 3.11. (a) The Borrower undertakes to insure, or make adequate provision for the insurance of, the imported goods to be financed out of the proceeds of the Credit against hazards incident to the acquisition, transportation and delivery thereof to the place of use or installation, and for such insurance any indemnity shall be payable in a currency freely usable by the Borrower to replace or repair such goods.

(b) Except as the Association shall otherwise agree, all goods and services financed out of the proceeds of the Credit shall be used exclusively for the Project.

Section 3.12. (a) The Borrower shall furnish or cause to be furnished to the Association, promptly upon their preparation, the plans, specifications, reports, contract documents and construction, procurement and work schedules for the Project, and any material modifications thereof or additions thereto, in such detail as the Association shall reasonably request.

(b) The Borrower: (i) shall maintain or cause to be maintained records adequate to record the progress of the Project (including the cost thereof) and to identify the goods and services financed out of the proceeds of the Credit, and to disclose the use thereof

in the Project; (ii) shall enable the Association's accredited representatives to visit the facilities and construction sites included in the Project and to examine the goods financed out of the proceeds of the Credit and any relevant records and documents; and (iii) shall furnish or cause to be furnished to the Association all such information as the Association shall reasonably request concerning the Project, the expenditure of the proceeds of the Credit and the goods and services financed out of such proceeds.

Section 3.13. The Borrower shall take or cause to be taken all such action as shall be necessary to acquire as and when needed all such land and rights in respect of land as shall be required for the construction of the facilities included in the Project and shall furnish to the Association, promptly after such acquisition, evidence satisfactory to the Association that such land and rights in respect of land are available for purposes related to the Project.

ARTICLE IV

**Budgetary Control; Funding Procedures;
Accounts and Audits**

Section 4.01. The Borrower shall maintain or cause to be maintained records adequate to reflect in accordance with consistently maintained appropriate accounting practices the operations, resources and expenditures, in respect of the Project, of the departments or agencies of the Borrower responsible for carrying out the Project or any part thereof.

Section 4.02. (a) The Borrower shall cause (i) BPMU to prepare its own annual budget and, in consultation with the Feeder Road, Schistosomiasis and Monitoring Units as the case may be, to prepare the annual budgets of such units and (ii) LBDI to prepare the annual budget of the LBDI branch at Gbarnga, all for PSC's approval. Such budgets shall be included, as the case may be, as a separate item in the annual budgets of the Ministries of Agriculture, Public Works, Public Health and LBDI.

(b) The Borrower shall cause BPMU to prepare quarterly cash flow forecasts indicating costs, revenues and working capital requirements, within the approved annual Project budgets, and to submit such forecasts to PSC for approval, not later than one month prior to each quarter.

(c) The Borrower shall cause BPMU to maintain income and expenditure records in accordance with consistently maintained appropriate accounting practices to reflect its operations and financial position in relation to the Project, and to provide evaluation data.

(d) The Borrower shall cause BPMU and the Feeder Road, Schistosomiasis and Monitoring Units to: (i) have their accounts for each fiscal year audited, in accordance with sound auditing principles consistently applied, by independent auditors acceptable to the Association; (ii) furnish to the Association as soon as available, but in any case not later than four months after the end of each such year, (A) certified copies of their accounts for such year as so audited and (B) the report of such audits by said auditors, of such scope and in such detail as the Association shall have reasonably requested; and (iii) furnish to the Association such other information concerning their accounts and the audit thereof as the Association shall from time to time reasonably request.

Section 4.03. (a) The Borrower shall maintain a separate bank account for the Project at LBDI or at an established commercial bank.

(b) The Borrower shall replenish such bank account quarterly in advance through its Ministry of Finance, in accordance with the quarterly cash flow forecasts referred to in paragraph (b) of Section 4.02 of this Agreement, to meet the anticipated payments for local expenditures.

(c) The Borrower shall (i) authorize BPMU to operate such bank account within its budgetary allocation, provided that the Project budgets and the quarterly cash flow forecasts have been approved by PSC; and (ii) provide inter alia for overdraft of funds from such bank account by BPMU, guaranteed by the Borrower, to cover any shortfall of funds required for local expenditures.

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Section 4.04. (a) The Borrower agrees that the Manager of the cooperative and credit services division of BPMJ shall be the Assistant Registrar of Cooperatives of the Ministry of Agriculture for Bong County.

(b) The Borrower shall, through the Assistant Registrar of Cooperatives, cause all farmer cooperatives included in the Project to maintain records adequately reflecting their operations and individual farmer credit transactions related to the Project. Such records shall be audited annually by the Registrar of Cooperatives of the Ministry of Agriculture and may be reviewed at any time by the Association.

Section 4.05. (a) For the purpose of Part A of the Project, the Borrower shall establish a Revolving Credit Fund which shall be administered by LBDI on behalf of the Borrower in accordance with a Revolving Credit Fund Agreement satisfactory to the Association to be entered into between the Borrower and LBDI not later than June 30, 1977.

(b) The Revolving Credit Fund Agreement, or any provision thereof, shall not be assigned, amended, abrogated or waived without the prior approval of the Association.

(c) The surplus funds of the Revolving Credit Fund shall be invested in short-term deposits (not more than one year) in accordance with prudent financial practices to ensure adequate liquidity of the Revolving Credit Fund.

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(d) The Borrower shall cause the funds of the Revolving Credit Fund to continue to be used, after the completion of Part A of the Project, for development loans and seasonal credits to smallholders in the Borrower's territory to aid them in developing and increasing agricultural production.

(e) The Revolving Credit Fund shall not be dissolved before the end of the scheduled repayment period of the last development loan granted under the Project.

(f) The individual development loans and seasonal credits to be financed out of the Revolving Credit Fund shall be provided to the farmers in the Project Area under the terms and conditions stipulated in the Revolving Credit Fund Agreement, which terms and conditions shall include, inter alia, those set forth in Schedule 4 to this Agreement, as such Schedule may be amended from time to time by agreement between the Borrower and the Association.

(g) The Borrower shall, through the Revolving Credit Fund Agreement, cause LBDI to: (i) maintain separate accounts and records for the Revolving Credit Fund; (ii) have such accounts and records for each fiscal year audited, in accordance with sound auditing principles consistently applied, by independent auditors acceptable to the Association; (iii) furnish to the Association as soon as available, but in any case not later than four months after the end of each such year, (A) certified copies of such accounts and records for such year as so audited and (B) the report of such audit by said auditors, of such scope and in such detail as the Association shall have reasonably requested; and (iv) furnish to

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the Association such other information concerning such accounts and records and the audit thereof as the Association shall from time to time reasonably request.

Section 4.06. The Borrower shall (i) not later than June 30, 1977, prepare, for consultation with the Association, a proposal for the establishment of an agricultural credit system in Liberia; and (ii) within six months thereafter, prepare, for consultation with the Association, a detailed plan for the implementation of such proposal.

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SCHEDULE 4

Terms and Conditions of Development
Loans and Seasonal Credits

The development loans and the seasonal credits referred to in Section 4.05 (f) of this Agreement shall be provided in accordance with the terms and conditions outlined below:

1. Development Loans

(a) The development loans shall bear interest at a rate of 10 per cent per annum on the outstanding balance, and shall be repaid as follows:

(i) Loans for the development of farms for coffee and/or cocoa shall be repaid in twelve years, including a grace period of four years during which the interest on such loans shall be capitalized; and

(ii) Loans for new swamp rice development shall be repaid in eight years including a grace period of two years during which period the interest on such loans shall be capitalized.

(b) The development loans shall be used for financing (i) in the case of single and double crop swamp rice development, the cost of hired labor and/or rental of land clearing equipment, construction of water control and storage structures, tools and farm

ARTICLE V

Other Covenants

Section 5.01. Except as the Borrower and the Association shall otherwise agree, the Borrower shall not permit AGRIMECO to engage in any new large-scale mechanized land clearing activities for tree crop development in the Project Area after June 30, 1977 until the proceeds of the Credit have been fully employed for purposes of the Project.

Section 5.02. The Borrower shall cause the pricing of inputs and the terms of credits provided by the Borrower or its agencies after September 30, 1977 to farmers in the Kpartawee area to be the same as those applied under the Project.

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equipment; and (ii) in the case of coffee and cocoa development, the cost of fertilizers, seedlings, plants, suckers, hand tools, land development services, sprayers and processing equipment.

2. Seasonal Credits

(a) The seasonal credits shall bear a service charge at a flat rate of 10 per cent and shall be repayable after each harvest for which the credits have been provided.

(b) Such credits shall be used for financing (i) in the case of upland and swamp rice development, the cost of rice seeds, fertilizer, spraying services and power tiller service (double crop swamp rice only); and (ii) in the case of coffee and cocoa development, the cost of fertilizers, chemicals, sprayers and replacement tools.

3. Institutions

Until viable farmer cooperatives are in existence in the Project Area, the development loans and seasonal credits shall be channelled for relending through BPMU. Funds to be provided to BPMU or the cooperatives, as the case may be, for such relending shall bear interest at a rate of 7 per cent per annum. A 2 per cent management commission on disbursed funds shall be paid from the Revolving Credit Fund to LBDI. The cooperatives or BPMU, as the case may be, shall retain the balance between the interest on the funds received and the interest or service charge on the development loans or seasonal credits, to cover its administrative costs and bad debts. All

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repayments of principal of, or payments of interest or service charge on, the development loans or seasonal credits shall be deposited in the Revolving Credit Fund.

4. Procedures

(a) The individual development loans and seasonal credits shall be approved by BPMU after screening of applicants by a credit advisory committee composed of village or clan chiefs, representatives of farmers, the local agriculture extension assistant, the local cooperative/credit extension assistant, and a credit officer from the farmer cooperative concerned, when applicable.

(b) Farmers who have been granted such loans or credits shall agree to: (i) accept input packages specified by BPMU and use such input packages only for the purpose for which they are provided; (ii) carefully follow the practices recommended by BPMU; and (iii) market their coffee and cocoa through the farmer cooperatives.

(c) No such loan and/or credit shall exceed a total of \$1,000 per farm family, or such other maximum amount as may from time to time be determined by agreement between the Borrower and the Association.

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EVALUATION PLAN

Any project design, whatever the excellence of its planning and preparation, includes a degree of uncertainty such as: yields under new technology, the best methods of assisting local organizations at the community level, who will request and be admitted to project participation, etc. In addition, there is a need to test the logical linkages within the project which lead from the resource input to the outputs which satisfy the project's purpose and goal. Also, project success depends on the validation of a considerable number of assumptions. The most important output of an evaluation plan is the influence on the outcome of the project. To be effective it must include continuous feedback to permit program modifications and "fine tuning".

The requisite parts of such a monitoring and evaluation system are as follows:

A. Monitoring

- The resource investment and the approach used: the money, equipment and technical assistance inputs;
- The first stage of output of the project; staff hired and trained, experimental plots in place, etc.;

B. Evaluation of:

- Project results, effects, impact on;
 - Society in general;
 - Target population; and
 - Project participation.
- Distribution of project benefits within above categories.

C. Diagnosis of:

- Why project works/does not work
 - In different environments; and
 - With various application of resources/approaches.
 - How to improve performance during implementation.

The overall purpose of a monitoring/evaluation plan should be to identify and measure project results, and to make specific recommendations regarding project approach, priorities or implementation which will improve

both current performance and subsequent project design.

The primary problem in project evaluation centers on separating out project effects from other factors that have impact on individuals and institutions. There are several approaches to this problem, and each of them involves comparative analysis. One might simply look at participants before and after project startup and attribute any differences to the project. A sounder approach is to compare project participants with a control group of similar individuals who have not been exposed to project effects. Ideally, this would involve a through-time comparison rather than a one-time comparison.

Since rural development projects have a great many outside factors which might influence benefits (weather, type of land, disease, educational and health level, resource base, etc.), it is necessary to obtain clear, unequivocal conclusions from the evaluation system. There are useful random selection techniques, not just between a treatment and non-treatment group, but among several different kinds (i.e., extension approaches to promote the new technology) which improve the certainty of the results. The use of control groups and the collection of data on some is particularly important before the project begins. Otherwise, there will always be a lingering suspicion that the participants fundamentally differed from non-participants, and that these differences, rather than the project, account for the improved yields, or increases in income.

The use of control groups, however, is complicated by spread effects and makes the analysis of comparative data difficult. On one hand, the area might have been undergoing significant changes before the project got underway, and to ascribe all modernizing changes being undertaken to the project, would be to overrate it. On the other hand, the project, if successful, should have a demonstration effect — that is, farmers will follow the practices of the project participants without drawing credit from the cooperative. If only credit recipients were included as project participants and counted in the benefit analysis, the project would be underrated. This problem can only be resolved through the use of accurate baseline data on the entire project group specifically tracking benefits flowing to participants and non-participants. An example of the documentation of spread effects of project technology utilizing the low-cost model of information collection would be an increase in sales of fertilizer to non-members of the cooperative.

COMPONENTS OF THE QUANTIFIABLE INFORMATION SYSTEM

The following four sections replicate the basic format of the AID logical framework for project planning, implementation and evaluation. The first two sections on Program Goals and Project Purpose are treated in some detail, with an explanation of the various options available for data

collection and analysis. Evaluation of the results against these goals would be the responsibility of the FMEU. The last sections list the Inputs and Outputs of the project, with the vast majority of the data collection and aggregation being completed by monitoring/evaluation units assigned to each of the six operating divisions. In these sections, the indicators, targets, data collection instruments and responsibilities are given in outline form only.

Data Collection for the Program Goal Level

Analysis at the Program Goal level requires a comparison with previous conditions, trends and projections. Income increases can be measured precisely for a sampling of participants and non-participants in Y5, but this needs a Y0 comparison group for clear conclusions as to the results of the project, as well as a knowledge of how many new participants/adopters are involved. General approximation to income increases for both participants (credit recipients) and non-participants can be obtained through the use of proxies for income increases, if these are carefully designed and field tested. The FMEU staff will need some technical assistance in generating these instruments and in conducting the analysis. \$30,000 has been provided under the AID loan to provide consultants for this purpose.

-4-

A. PROGRAM GOAL*

TO IMPROVE THE WELFARE OF THE RURAL POPULATION IN UPPER BONG COUNTY.

Variables	Indicators/Targets
1.01 Average annual farm income of participant families 1.02 Average annual income for all members of target population.	<ul style="list-style-type: none"> • An increase from _____ (present) to _____ by full development (19____) or Y10 • An increase per capita from _____ to _____ by 1985.
1.03 Incremental (aggregate) production of Rice Coffee Cocoa	Annual production by 1985: _____ metric tons _____ metric tons _____ metric tons
1.04 Relative prices of farm inputs to product output	<ul style="list-style-type: none"> • Price ratio remains unchanged or changes in direction favoring producer (need baseline data)
1.05 Improved transport infrastructure	<ul style="list-style-type: none"> • Reduced farm to markets transport costs (Need baseline data)
1.06 Improved health	<ul style="list-style-type: none"> • Reduced work-days lost to illness • Reduced incidence of parasites (Need baseline data)
1.07 Improved nutrition	<ul style="list-style-type: none"> • Reduced incidence in PCM in children 2-6 years • Reduced incidence in Kwashiorkor in children 2-6 years (Need baseline data)

* The indicators and targets presented in this and subsequent sections are intended to be illustrative. Final design will have to be completed in the field.

A good deal of "before" data on credit recipients can be extracted from the various forms recommended for use as the project gets under way. These are fully described under the Purpose section which follows, and could be used to collect health and nutrition data, as well as data on education levels and aspirations. Further, if the benefits of yield increases are to accrue to the farmers and not to market intermediaries, the prices for inputs and outputs should be favorable, allowing the kind of economic incentives which insure the project will continue after subsidized services have been withdrawn.

Data Collection Instruments: See B, Project Purposes

Collection Responsibility: PMU Planning and Evaluation Division

Collection Frequency: Annually, including Y0

Reporting Responsibility: PMU Planning and Evaluation Division

Reporting Frequency: Annually

Data Collection for the Project Purpose Level

A combination of yield increase by adopters of the new technology, and of the number of new adopters constitutes the heart of the measure of progress at the project purpose level. Equity considerations require a determination of who is receiving credit and adopting the new practices. The project has elected to utilize a cut-off point of four hectares to distinguish small farmers from the not-so-small farmers and this needs to be included in the data collection and analysis. Data for the self-sufficiency of the project's activities can be collected from co-op accounting records once these have been suitably strengthened in design. Small farmer participation in the project, both as beneficiaries and decision-makers can be obtained by project or co-op field staff during visits to villages and from credit recipient records.

As mentioned previously, reliable yield measurement is a high cost option, dependent on farm visits and direct cuttings of harvest samples. This would be possible to carry out with all project participants in Y1 as only 500 adopters are anticipated. After this time, it will be necessary to select a sample of farmers for the direct yield measurements. The comparison of yields and determination of yield increases presents a problem. It may be possible to obtain a reasonable estimate of subsistence output based on the amount of rice necessary to feed a given family, as well as on the observation of the size and quality of land they had under cultivation in the previous year. This would allow some comparison of increases in yield by the same farmer from one year to the next. In addition, it is possible to use the portion of the farmer's field not under modern agricultural practices as a control if the farmer elects to test project technology on only some of his upland rice land. If this comparison is not available, the position, years of utilization, kind of soil, rainfall, etc., of a participant could be matched against similar land of a non-participant, and the difference between the two counted as the incremental benefit of the project. In any event, PMEU staff will have to coordinate closely with agricultural and credit field staff so that the data needed for this comparison is reliably collected.

One specific suggestion is to have the agricultural extensionists to estimate the yield of project participants and of a control group of non-participants just before harvest tasks begin. During this visit the sacks required for delivery of the in-kind credit repayment to the co-op would be left with the farmers. The extensionists would be asked to visually estimate the rice yields for all project participants (an error factor of ten percent is anticipated), then check these estimates against careful yield cuttings for a sample of farmers, both participants and non-participants.

Farm budget analysis will be conducted on a representative sample of farms to measure actual small farm benefits under different conditions. Analysis is aimed at demonstrating the productivity and profitability of the different production packages in different cropping systems and different farm sizes. These farm budget studies should provide firm basis for estimates of total project benefits and overall benefits incidence.

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B. PROJECT PURPOSE

TO INCREASE AND MAINTAIN AGRICULTURAL PRODUCTIVITY
AND INCOME OF SMALL FARMERS IN UPPER BONG COUNTY

Variables		Indicators/Targets				
	BASE	Y ₁	Y ₂	Y ₃	Y ₄	Y ₅
2.01 Yield <u>increases</u> (kgs/Ha) in: Y0						
Upland Rice	-					
Swamp Rice (Rehab)						
New swamp (single crop)						
New Swamp (double crop)						
Coffee (Rehab)						
New Coffee ¹						
Cocoa (Rehab)						
New Cocoa ²						
2.02 New Participant-adopters of 4 has. or less	0					
2.03 Project self-sufficiency: co-op revenues ÷ real costs of credit/ag. extension	0					
2.04 Small farmer participants: Credit recipients by size of holding by category: 0-1 has., 1-2 has., 2-3 has., 3-4., 4-10 has., over 10 has.						

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Data Collection Instruments

With the exception of yield measurements, or estimates needed before or at harvest, the bulk of the data necessary for analysis can be collected from the participants as they meet with the credit supervisor and complete the forms to receive and repay their credit for the year. We believe that three instruments would capture the majority of data required. The primary instruments of baseline data collection as well as time series data, as the project progresses, will be the following:

- Farm Resource Appraisal Form: This document will be used for all farmers selected for formal agricultural training and/or any farmers selected by the co-op as candidates for credit. The form will gather information on the farm household's present yield and income, consumption, labor potential, off-farm employment, etc.

- Farm Credit Plan: This document will estimate the area to be planted, production costs, yields, and net income. It will include a schedule for the required delivery/use dates for credit-financed inputs and a schedule for supervisory farm visits by extension personnel.

- Farm Credit Record: This will record general socio-economic information on all members.

It is important to note that these instruments refer to routinely-used documents of the credit and extension services of the project, and not to survey research questionnaires collected by contracted "outside" evaluators. The objective is to internalize the monitoring/evaluation functions of the project so that data collection is undertaken exclusively by project staff. The above-mentioned instruments have not yet been designed. Development and adaptation to the particular circumstances of Upper Bong County will require the assistance of design consultants.

Summary:

Data Collection Instruments: (1) Farm Credit Plan, (2) Farm Resource Appraisal Form, and (3) Farm Credit Record, and (4) yield estimates and measurement forms.

Collection Responsibility: PMU Planning and Evaluation Division, based on monthly reports, annual reports of division heads, aggregating data collected to measure project outputs (see C below).

Collection Frequency: Annually, at the end of the project year.

Reporting Responsibility: PMU Planning and Evaluation Division; also, the joint IBRD-USAID evaluation team which inspects the project every second quarter.

Reporting Frequency: At the end of each project year.

**C. PROJECT OUTPUTS
AGRICULTURAL EXTENSION**

ACTIVITIES	VOLUME INDICATORS	PERFORMANCE INDICATORS
3.11 Demonstration Farm Activities	-No. farmers attending M/F -No. demonstration farms -No. demonstrations	-Yields -Input utilization (no. practices adopted) -Repayment rate
3.12 Village Meetings	-No. meetings -No. farmers attending M/F	
3.13 Farm Visitation	-No. farms visited -Av. no. visits per farm -Frequency of visits	
3.14 Office Consultation with farmers	-No. farmer visits received in office -Average no. visits per farmer	

Data Collection Instruments: Daily Activities Journal, Farm Visit Report Form, Farm Resource Appraisal Form, Credit Plan

Data Collection Responsibility: Extension Aides, Extension Field Supervisor

Collection Frequency: Continuously (daily), with monthly summary to Agricultural Manager

Reporting Responsibility: Agricultural Manager in monthly report to Project Manager, with copy to Planning/Evaluation Unit.

Reporting Frequency: Monthly, with annual summary at termination of each project year.

C. PROJECT OUTPUTS

TRAINING

ACTIVITIES	VOLUME INDICATORS	PERFORMANCE INDICATORS
<p>3.21 Staff Training</p> <p>a. CAES, Suakoko b. PMU Center, Suakoko c. LIPA, Monrovia</p> <p>3.22 Cooperative Training</p> <p>a. PMU Center, Suakoko b. At cooperative</p>	<p>-No. trainees -Cost per trainee -no. trainees receiving initial project training -No. trainees receiving follow-up training;</p>	<p>-No. trainees with a. Advanced competency b. Fair competency c. Poor competency -Av. years schooling by category as above -Av. years relevant prior experience by category as above</p>
<p>.23 Farmer Training</p> <p>a. At FTC, Suakoko b. Other</p>	<p>-No. trainees, M/F -Cost per trainee</p>	<p>-Formally trained credit recipients as a % of all credit recipients.</p>

Data Collection Instruments: Trainee Interview Form, Proficiency Report Card

Collection Responsibility: Training Center Superintendents or Training Officer

Collection Frequency: At start and termination of each training program, with data submitted to Training Development Officer

Reporting Responsibility: Training Development Officer, in monthly report to Project Manager, with copy to Planning/Evaluation Unit.

Reporting Frequency: Monthly, with annual summary at termination of each project year.

C. OUTPUTS

COOPERATIVES: INPUTS AND CREDIT

(BY COOPERATIVE)

SERVICES/ACTIVITIES	VOLUME INDICATORS	PERFORMANCE INDICATORS
3.31 Input Supply a. Fertilizer b. Seed/seedlings c. Chemicals d. Tools	-Purchase of inputs by co-op members: -value -tons -Per capita input use -Purchase of inputs by non-members	-Inputs delivered when needed, (before estimated use deadline). -Inputs of good quality, (as specified in production plan). -Inputs sold in units applicable to situation, (as specified in production plan). -Input cost relative to income generated by use.
3.32 Credit Supply a. Seasonal/management b. Development c. Total Lending	-Average value per loan -Average value per land unit -No. and value of loans repaid in: kind cash -Total cost to cooperative (unsubsidized) of credit, administration, supervision -Average yearly cost per seasonal loan -Average yearly cost per development loan	-Value delinquent loans -No. delinquent loans; -due to climatic factors -due to inadequate education -due to technical errors -other -Cooperative income from loans relative to costs (unsubsidized)

Collection Instruments: Each farmer's loan must be documented by a 1) Farm Credit Plan, (which estimates input use, production costs, expected yield, total income based on Farm Resource Appraisal Form), 2) Farm Credit Record (which compares actual performance with estimated performance. (The three forms mentioned here can be one and the same for simplicity.)

In addition the cooperatives will maintain the following auxiliary accounting records:

- 1) Warehouse operations- deliveries, disbursements, inventory.
- 2) Credit Operations- register of credit administration/supervision costs.

Collection Responsibility: Cooperative credit field officers

Collection Frequency: Continually, especially before loan disbursement and during loan repayment.

Reporting Responsibility: Cooperative Credit Officer in monthly report to cooperative Board of Directors with copies to PMU Credit Manager and PMU Commercial manager; the latter reports monthly to the project manager.

Reporting Frequency: Monthly, in Cooperative/Credit Division Operating Report to Project Manager with copy to Office of Planning and Evaluation.

C. OUTPUTS

COOPERATIVES: MARKETING AND OTHER SERVICES

ACTIVITIES	VOLUME INDICATORS	PERFORMANCE INDICATORS
<p>3.33 <u>Marketing</u></p>	<ul style="list-style-type: none"> -Produce purchased from members (by crop) <ul style="list-style-type: none"> • weight • value -Produce purchased from non-members <ul style="list-style-type: none"> • weight • value -Division of produce purchased by sub-agents and that sold directly to the cooperative -Sub-agent profit margins -Value of cash advances to sub-agents -No. of cooperative collection stations in use -Transportation costs <ul style="list-style-type: none"> • Farmer to cooperative • Farmer to sub-agent to cooperative 	<ul style="list-style-type: none"> -Cooperative member sales as a percentage of total member production -Member sales as a percent of total volume marketed -Farmgate prices (by location) as a percent of prices at: <ul style="list-style-type: none"> • collection station • cooperative warehouse • regional market • FOB/ Monrovia
<p>3.34 <u>Savings and Loan Operations</u></p>	<ul style="list-style-type: none"> -Value total savings <ul style="list-style-type: none"> • Members • Non-members -Total cost of administration of savings and loan services -No. and value of non-agricultural loans; <ul style="list-style-type: none"> • Members • Non-members 	<ul style="list-style-type: none"> -Per capita member savings -Member savings as a percent of total outstanding obligations (end of year) -Repayment rate on non-agricultural loans

Data Collection Instruments: Membership passbooks (recording all service transactions with the cooperative); sub-agent purchase journals (supervised by cooperative credit officer).

Collection Responsibility: Cooperative sub-agents, cooperative credit officer, cooperative secretary/clerk.

Collection Frequency: Continuous

Reporting Responsibility: Cooperative Credit Officer, in monthly report to PMU Cooperative Credit Manager and Commercial Manager; latter in monthly Operating Report to project Manager with copy to Office of Planning and Evaluation.

Reporting Frequency: Monthly, with annual summary at termination of project year.

C. PROJECT OUTPUTS

OTHER SUPPORT SERVICES

ACTIVITIES	VOLUME INDICATORS	PERFORMANCE INDICATORS
<p>3.41 <u>Land Surveying/Registry</u></p>	<p>-Acres of development areas surveyed: a. Swamps b. Tree plantations -No. farms surveyed -No. farms registered</p>	<p>-Decrease in average acreage of holdings registered in Bong County</p>
<p>3.51 <u>Road Construction and Maintenance</u></p>	<p>-Miles road constructed -Miles road improved -No. bridges constr. -No. culverts constr.</p>	<p>-Decline in transport costs -Increased volume, frequency of transport services -Increase in marketed production relative to consumed (subsistence) production</p>
<p>3.61 <u>Schistosomiasis Monitoring</u></p>	<p>-No. swamps sampled -No. laboratory tests conducted -No. health education meetings held with farmers -Attendance at meetings</p>	<p>-Maintenance of up-to-date map of incidence and infection areas within project region -Decline over time in incidence of schistosomiasis in project area</p>
<p>3.71 <u>Health and Nutrition Improvement</u></p>	<p>-No. of children examined -No. of interviews held -No. of nutrition education meetings -Attendance of meetings</p>	<p>-Improve nutrition of 2-6 year olds -Inc. in mothers participating -Inc. in latrines -Inc. in deep wells</p>

Data Collection Instruments: various daily journals used by field staff to record their work activities;

Collection Responsibility: Field staff

Collection Frequency: Continuously, with data submitted monthly to division heads

Reporting Responsibility: LAND SURVEYING: Land Development Officer; Roads: Road Supervisor; SCHISTOSOMIASIS and WELLS: Medical Doctor

Reporting Frequency: Monthly, with annual summary at termination of each project year.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Master: IDV Proje
Project Title Upper Bong County Integrated Rural Development Project

Life of Project:
From FY 1977 to FY 1981
Total U.S. Funding: \$1.5 million
Date Prepared: 6/24/77

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	METHODS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>PROGRAM GOAL To improve the welfare of the rural population Upper Bong County.</p>	<p>ECONOMIC An average annual increase in small farm income of 40 percent by the end of the project, with the on-farm investments in place to assure a 140 percent average income increase for all project participants by 1980.</p> <p>NUTRITION Increased caloric intake and reduced incidence of chronic malnutrition.</p> <p>HEALTH A reduction in the incidence of schistosomiasis.</p> <p>TRANSPORTATION Reduced farm-to-market transportation costs and time.</p> <p>EMPLOYMENT Generation of an estimated 800,000 days of incremental employment over the life of the project.</p>	<p>Studies conducted by the PMU Evaluation and Monitoring Unit working from existing baseline data contained in the project feasibility study, the first National Nutrition Survey, and Phebe Hospital laboratory records.</p>	<ol style="list-style-type: none"> 1. That village societies and village leadership encourage equity in the distribution of farm inputs and credit 2. That existing land tenure rights are sufficient, or new ones can be adopted, which will provide the necessary incentives for technology acceptance without generating social resentment or economic inequality. 3. That the GOL provides effective political and administrative support for the project. 4. That the benefits from increased production will be passed on to the small farmers through a price structure which will cover the costs of the new inputs and risks. 5. That world market prices for crops produced in the area will remain at constant levels or increase over time.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Master Loan Facility
Project Title Upper Bong County Integrated Rural Development Project

Life of Project:
From FY 1977 to FY 1981
Total U.S. Funding: \$6.6 million
Date Prepared: 6/24/77

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	METHODS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>PROJECT PURPOSE To increase and maintain agricultural productivity and income of small farmers in Upper Bong County.</p>	<p>END OF PROJECT STATUS:</p> <ol style="list-style-type: none"> 1. 9,000 small farmers will have: <ol style="list-style-type: none"> a. Utilized improved agricultural inputs provided through credit made available under this project. b. Received training and on-farm extension advice on proper use of input package. c. Increased upland rice yields from 1.0 tons/ha to 1.3 tons/ha and swamp rice yields from 1.4 tons/ha to 3.0 tons/ha. d. Made necessary investments in tree crops to insure coffee yields of 1.0 tons/ha. in Year Six and cocoa yields of 1.0/ha in year ten. e. Increase farm family income by est. 40% from \$380 in Year one to \$500 in Year Five. 2. Six cooperative organizations established and operating. 3. Capitalization of revolving credit fund sufficient to meet continuing credit needs of 9,000 farmers plus allow continued program expansion. 4. Input supply system established and operating. 5. 170 miles of roads constructed or re-conditioned and receiving routine maintenance. 6. Schistosomiasis being controlled. 7. 1,500 families will have improved nutrition of children and mothers. 	<ol style="list-style-type: none"> 1. PMU operations records. 2. LPMC produce marketing records. 3. Cooperative records. <p>PMU will conduct sample surveys in Year One to establish base-line income figures.</p> <ol style="list-style-type: none"> 4. LBDI records. 5. PMU Evaluation and Monitoring Unit records 6. Nutritional Surveys. 	<ol style="list-style-type: none"> 1. That crop farmgate prices will be maintained or improved. 2. That the LPMC will participate in the project and give it their full support, including administration capability and handling, storage and transportation facilities for the expected increase in production. 3. That project innovations will provide adequate adoption incentives in production. 4. That labor is not a constraint 5. That substantial expansion of farm-to-market road network will occur early in the project and that it will be adequately maintained. 6. That the village level primary societies can be set up and that they will be able to function, the roles of input supply and produce marketing.

ANNEX VI

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 1977 to FY 1981
Total U.S. Funding: \$8.6 million
Date Prepared: 6/24/77

Master Log Frame
Project Title Upper Bong County Integrated Rural Development Project

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	SOURCES OF VERIFICATION	IMPORTANT ASSUMPTIONS
PROJECT OUTPUTS			
1. Extension System established.	1. 73 extension aides recruited, trained and providing on-farm assistance.	PMU records.	1. That effective training programs can be developed by the PMU with support and assistance from the CAES and other government training organizations.
2. Project training.	2 (a) 9,000 farmers trained (b) coop staff trained, (c) PMU technical staff trained, and (d) dormitory completed at CAES, Suakoko.	PMU training records.	2. The technology being introduced will result in the yields being estimated.
3. Cooperative Services established.	3. (a) Inputs totaling \$3.3 million distributed by cooperatives. (b) by year 5 cooperatives providing \$272,000 of seasonal credit and \$876,000 of intermediate term development loans. (c) Participant's tree crops and marketable rice production being sold through cooperatives.	Cooperative records	3. That Liberian extension agents can be motivated to work effectively with farmers and that the necessary number of extension staff can be found.
a. Input supply			
b. Credit			
c. Marketing			
4. Land Development	4. (a) 4,500 ha. tree crops surveyed, cleared and planted; (b) 2,050 ha. swamp rice surveyed, cleared and planted.	LPMC records	4. That farmers understand and are willing to accept group responsibilities for credit repayment and that cooperatives savings programs can be established with greater farmer commitment to the savings and loan institution and increased financial capital for further agricultural development leading.
5. Road Construction and Maintenance	5. 180 miles constructed or reconditioned and receiving annual maintenance.	PMU records.	5. That farmer resistance to swamp rice does not constitute a serious constraint.
6. Village wells constructed	6. 300 over five years	MPW records.	6. That the LPMC will play a prominent role in the timely delivery of inputs to the cooperatives.
7. Schistosomiasis	7. 10 percent survey completed and monitored and control measures being taken where required.	PMU records MOH records	7. That the Ministry of Public Works will comply with agreements to build and maintain rd.
8. Research	8. Results obtained on fertilizer responses, varietal improvement, water control, etc.	PMU records CAES records	

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ANNEX VI

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 1977 to FY 1981
Total U.S. Funding: \$8.6 million
Date Prepared: 6/24/77

Master: L3, Frame
Project Title: Upper Bong County Integrated Rural Development Project

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	SOURCES OF VERIFICATION	IMPORTANT ASSUMPTIONS
<u>INPUTS</u>			
<u>USAID: \$6/6 Million</u>			
A. Farm Inputs: Fertilizer, Seeds, Seedlings and chemicals; Shade trees, tools sprayers.	A. <u>\$2.1 Million</u> 1. 4,150 tons fertilizer 2. 367 tons of rice seed 3. 6,350,000 seedlings	PMU Records LPNC Records Coop Records	
B. Road Construction and Maintenance; construction and maintenance equipment, culverts and bridging, non-labor operational costs for construction and reconditioning.	B. <u>\$2.3 Million</u>		
C. Cooperative/Credit Division:	C. <u>\$.4 Million</u>		
D. Contingencies	D. <u>\$1.3 million</u>		
<u>IBRD: \$7.0 Million</u>			
A. Construction/Civil Works	A. <u>\$.48 Million</u>		
B. Vehicles, including operation and maintenance.	B. <u>\$.92 Million</u>		

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PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 1977 to FY 1981
Total U.S. Funding: \$8.4 million
Date Prepared: 6/24/77

Master Log Frame
Project Title Upper Bong County Integrated Rural Development Project

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	METHODS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<u>INPUTS CONTINUED</u>			
C. Staff salaries	C. 2.2 Million		
D. Administrative/Operating	D. .75 Million		
E. Research	E. .65 million		
F. Consultants	F. .15 million		
G. Feasibility Study	G. .20 million		
H. IBDI Assistance	H. .15 million		
I. Contingencies	I. 1.5 million		
<u>GOL: \$6.7 million</u>			
A. Farm Inputs and Hired Labor	A. 1.35 million		
B. Salary and Wages	B. 2.8 million		
C. Vehicles, including operation and maintenance.	C. .25 million		
D. Administrative/operating costs	D. .21 million		
E. Construction and Civil Works	E. .11 million		
F. Contingencies	F. 1.98 million		

STANDARD ITEM CHECKLIST

Listed below are statutory items which normally will be covered routinely in those provisions of an assistance agreement dealing with its implementation, or covered in the agreement by exclusion (as where certain uses of funds are permitted, but other uses not).

These items are arranged under the general headings of (A) Procurement, (B) Construction, and (C) Other Restrictions.

A. Procurement

1. FAA Sec. 602. Are there arrangements to permit U. S. small business to participate equitably in the furnishing of goods and services financed?

Yes

2. FAA Sec. 604 (a). Will all commodity procurement financed be from the U. S. except as otherwise determined by the President or under delegation from him?

Yes

3. FAA Sec. 604 (d). If the cooperating country discriminates against U. S. marine insurance companies, will agreement require that marine insurance be placed in the U. S. on commodities financed?

Yes

4. FAA Sec. 604 (e). If offshore procurement of agricultural commodity or product is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity?

N/A

5. FAA Sec. 608 (a). Will U. S. Government excess personal property be utilized wherever practicable in lieu of the procurement of new items?

Yes

6. FAA Sec. 901 (b). (a) Compliance with requirement that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U. S.-flag commercial vessels to the extent that such vessels are available at fair and reasonable rates.

Yes

7. FAA Sec. 621. If technical assistance is financed, will such assistance be furnished to the fullest extent practicable as goods and professional and other services from private enterprise on a contract basis? If the facilities of other Federal agencies will be utilized, are they particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs?

Yes

8. International Air Transport. Fair Competitive Practices Act, 1974

If air transportation of persons or property is financed on grant basis, will provision be made that U. S.-flag carrier will be utilized to the extent such service is available?

N/A

B. Construction

1. FAA Sec. 601 (d). If a capital (e.g., construction) project, are engineering and professional services of U. S. firms and their affiliates to be used to the maximum extent consistent with the national interest?

Yes

2. FAA Sec. 611 (c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable?

Yes

3. FAA Sec. 620 (k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U. S. not exceed \$100 million? N/A

C. Other Restrictions

1. FAA Sec. 201 (d). If development loan, is interest rate at least 2% per annum during grace period and at least 3% per annum thereafter? Yes

2. FAA Sec. 301 (d). If fund is established solely by U. S. contributions and administered by an international organization, does Comptroller General have audit rights? N/A

3. FAA Sec. 620 (h). Do arrangements preclude promoting or assisting the foreign aid projects or activities of Communist-Bloc countries, contrary to the best interests of the U. S.? Yes

4. FAA Sec. 636 (i). Is financing not permitted to be used, without waiver, for purchase, long-term lease, or exchange of motor vehicle manufactured outside the U. S. or guaranty of such transaction? Yes

5. Will arrangements preclude use of financing:

- a. FAA Sec. 114. to pay for performance of abortions or to motivate or coerce persons to practice abortions? N/A

- b. FAA Sec. 620 (g). to compensate owners for expropriated nationalized property? N/A

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c. FAA Sec. 660. to finance police training or other law enforcement assistance, except for narcotics programs? N/A

d. FAA Sec. 662. for CIA activities? N/A

e. App. Sec. 103. to pay pensions, etc., for military personnel? N/A

f. App. Sec. 106. to pay U. N. assessments? N/A

g. App. Sec. 107. to carry out provisions of FAA Sections 209 (d) and 251 (h)? (transfer to multilateral organization for lending). N/A

h. App. Sec. 501. to be used for publicity or propaganda purposes within U. S. not authorized by Congress? N/A

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PROJECT CHECKLIST

Listed below are, first, statutory criteria applicable generally to projects with FAA funds, and then project criteria applicable to individual fund sources: Development Assistance (with a sub-category for criteria applicable only to loans); and Security Supporting Assistance funds.

A. GENERAL CRITERIA FOR PROJECT.1. App. Unnumbered; FAA Sec. 653(B)

(a) Describe how Committees on Appropriations of Senate and House have been or will be notified concerning the project;
 (b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than \$1 million over that figure plus 10%)?

(a) FY 1977 Congressional Presentation for FY 1978 funding.
 (b) No, however, notification will be given.

2. FAA Sec. 611(a)(1). Prior to obligation in excess of \$100,000, will there be (a) engineering, financial, and other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U. S. of the assistance?

Yes

3. FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance?

Legislative action will be required for the establishment of a banking facility in the project area. A similar action was required for the Lofa County IRD Project and the GOL completed this action in a satisfactory and expeditious manner.

4. FAA Sec. 611(b); App. Sec. 101. If for water or water-related land resource construction, has project met the standards and criteria as per Memorandum of the President dated Sept. 5, 1973 (replaces Memorandum of May 15, 1962; see Fed. Register, Vol 38, No. 174, Part III, Sept. 10, 1973)?

N/A

5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U. S. assistance for it will exceed \$1 million, has Mission Director certified the country's capability effectively to maintain and utilize the project?
6. FAA Sec. 209, 619. Is project susceptible of execution as part of regional or multi-lateral project? If so why is project not so executed? Information and conclusion whether assistance will encourage regional development programs. If assistance is for newly independent country, is it furnished through multi-lateral organizations or plans to the maximum extent appropriate?
7. FAA Sec. 601 (a); (and Sec. 201 (f) for development loans). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.
8. FAA Sec. 601(b). Information and conclusion on how project will encourage U. S. private trade and investment abroad and encourage private U. S. participation in foreign assistance programs (including use of private trade channels and the services of U. S. private enterprise).
9. FAA Sec. 612(b); Sec. 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U. S. are utilized to meet the cost of contractual and other services.

This is a multilateral financed project with the IBRD.

This project will increase agricultural exports, develop local cooperative organizations, and improve agricultural technology within the context of the private enterprise system.

Project will initially finance sizeable tranche of U.S. Agricultural inputs, the proceeds of which will be used to capitalize a revolving credit fund to continue the provision of these U.S. inputs through commercial trade channels.

The GOL will provide approximately 30% of total project costs.

10. FAA Sec. 612(d). Does the U. S. own excess foreign currency and, if so, what arrangements have been made for its release?

No.

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

a. FAA Sec. 102(c); Sec. 111; Sec. 281a. Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production, spreading investment out from cities to small towns and rural areas; and (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic private and local governmental institutions?

The project aims at increasing small farmer income and productivity through the introduction of improved technology, formation of cooperatives, and improved marketing services. The project will also attempt to control selected endemic diseases, and improve the quality village water and sanitation.

b. FAA Sec. 103, 103A, 104, 105, 106, 107. Is assistance being made available: (include only applicable paragraph -- e.g., a, b, etc.-- which corresponds to source of funds used. If more than one fund source is used for project, include relevant paragraph for each fund source.)

See (1) below

(1) (103) for agriculture, rural development or nutrition; if so, extent to which activity is specifically designed to increase productivity and income of rural poor; (103A) if for agricultural research, is full account taken of needs of small farmers;

Project's main purpose is to increase productivity and income of 9,000 small farmers in project area.

(2) (104) for population planning or health; if so, extent to which activity extends low-cost, integrated delivery systems to provide health and family planning services, especially to rural areas and poor;

N/A

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(3) (105) for education, public administration, or human resources development; if so, extent to which activity strengthens nonformal education, makes formal education more relevant, especially for rural families and urban poor, or strengthens management capability of institutions; enabling the poor to participate in development;

N/A

(4) (106) for technical assistance, energy, research, reconstruction, and selected development problems; if so, extent activity is:

N/A

(a) technical cooperation and development, especially with U. S. private and voluntary, or regional and international development, organizations;

N/A

(b) to help alleviate energy problem;

N/A

(c) research into, and evaluation of, economic development processes and techniques;

N/A

(d) reconstruction after natural or manmade disaster;

N/A

(e) for special development problem, and to enable proper utilization of earlier U. S. infrastructure, etc., assistance;

N/A

(f) for programs of urban development, especially small labor-intensive enterprises, marketing systems, and financial or other institutions to help urban poor participate in economic and social development.

N/A

(5) (107) by grants for coordinated private effort to develop and disseminate intermediate technologies appropriate for developing countries.

N/A

c. FAA Sec. 110(a); Sec. 208(a). Is the recipient country willing to contribute funds to the project, and in what manner has or will it provide assurances that it will provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or has the latter cost-sharing requirement been waived for a "relatively least-developed" country)?

The GOL is currently providing 33% of the costs to the Lofa County IRD Project on a timely basis through a funding mechanism whereby the GOL advances funds for all local costs.

d. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to Congress been made, and efforts for other financing?

N/A

e. FAA Sec. 207; Sec. 113. Extent to which assistance reflects appropriate emphasis on; (1) encouraging development of democratic, economic, political, and social institutions; (2) self-help in meeting the country's food needs; (3) improving availability of trained worker-power in the country; (4) programs designed to meet the country's health needs; (5) other important areas of economic, political, and social development, including industry, free labor unions, cooperatives, and Voluntary Agencies; transportation and communication; planning and public administration; urban development, and modernization of existing laws; or (6) integrating women into the recipient country's national economy.

As an integrated rural development project, this activity touches in some degree on all aspects of this section of the FAA. (1) Small farmer participation is particularly evident at the village level cooperative organization. (2) Incremental agricultural production will substantially reduce country's importation of basic grain (rice). (3) Project will train in excess of 200 technicians during life of project. (4) Has element to control spread of schistosomiasis. (5) Cooperative development has high priority. (6) Provisions are being made to include participation of women to a greater degree than now exists.

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f. FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civic education and training in skills required for effective participation in governmental and political processes essential to self-government.

The decentralized and semi-autonomous nature of the project management unit provides a unique opportunity to deal with local needs and desires. It also provides economic incentives for trained Liberians to leave Monrovia and return to work in their native homeland.

g. FAA Sec. 201(b)(2)-(4) and -(8); Sec. 201(e); Sec. 211(a)(1) - (3) and - (8). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth; or of educational or other institutions directed toward social progress? Is it related to and consistent with other development activities, and will it contribute to realizable long-range objectives? And does project paper provide information and conclusion on an activity's economic and technical soundness?

Yes.

h. FAA Sec. 201(b)(6); Sec. 211(a)(5), (6). Information and conclusion on possible effects of the assistance on U. S. economy, with special reference to areas of substantial labor surplus, and extent to which U. S. commodities and assistance are furnished in a manner consistent with improving or safeguarding the U. S. balance of payments position.

This loan will finance a rather large commodity (fertilizer and construction equipment) element of U.S. source and origin. Also, increased production of coffee and cocoa will help to stabilize world prices for these two crops.

i. Development Assistance Project Criteria
(Loans only)

a. FAA Sec. 201(b)(1). Information and conclusion on availability of financing from other free-world sources, including private sources within U. S.

This is a joint project with the IBRD and they are financing 33% of the project costs through an IDA loan. Financing from private sources is unlikely.

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b. FAA Sec. 201(b)(2); 201(d). Information and conclusion on (1) capacity of the country to repay the loan, including reasonableness of repayment prospects, and (2) reasonableness and legality (under laws of country and U. S.) of lending and relending terms of the loan.

The GOL has sound and stable fiscal and political structure. Repayment and legality is reasonably assumed.

c. FAA Sec. 201(e). If loan is not made pursuant to a multilateral plan, and the amount of the loan exceeds \$100,000, has country submitted to AID an application for such funds together with assurances to indicate that funds will be used in an economically and technically sound manner?

Loan is part of a multilateral lending arrangement.

d. FAA Sec. 201(f). Does project paper describe how project will promote the country's economic development taking into account the country's human and material resources requirements and relationship between ultimate objectives of the project and overall economic development?

Yes.

e. FAA Sec. 202(a). Total amount of money under loan which is going directly to private enterprise, is going to intermediate credit institutions or other borrowers for use by private enterprise, is being used to finance imports from private sources, or is otherwise being used to finance procurements from private sources?

\$5.0 Million

f. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete in the U. S. with U. S. enterprise, is there an agreement by the recipient country to prevent export to the U. S. of more than 20% of the enterprise's annual production during the life of the loan?

N/A

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3. Project Criteria Solely for Security Supporting Assistance

FAA Sec. 531. How will this assistance support promote economic or political stability?

N/A

4. Additional Criteria for Alliance for Progress

(Note: Alliance for Progress projects should add the following two items to a project checklist.)

N/A

a. FAA Sec. 251(b)(1),-(8). Does assistance take into account principles of the Act of Bogota and the Charter of Punta del Este; and to what extent will the activity contribute to the economic or political integration of Latin America?

N/A

b. FAA Sec. 251(b)(8); 251(h). For loans, has there been taken into account the effort made by recipient nation to repatriate capital invested in other countries by their own citizens? Is loan consistent with the findings and recommendations of the Inter-American Committee for the Alliance for Progress (now "CEPCIES," the Permanent Executive Committee of the OAS) in its annual review of national development activities?

N/A

LIBERIA - COUNTRY CHECKLIST

Listed below are, first, statutory criteria applicable generally to FAA funds, and then criteria applicable to individual fund sources: Development Assistance and Security Supporting Assistance funds.

A. GENERAL CRITERIA FOR COUNTRY

- | | |
|---|--|
| <p>1. <u>FAA Sec. 116</u>. Can it be demonstrated that contemplated assistance will directly benefit the needy? If not, has the Department of State determined that this government has engaged in consistent pattern of gross violations of internationally recognized human rights?</p> | <p>The project aims at helping the needy by strengthening the major institutional structure dealing with that sector of the economy (agriculture) where one finds the majority of the needy.</p> |
| <p>2. <u>FAA Sec. 481</u>. Has it been determined that the government of recipient country has failed to take adequate steps to prevent narcotics drugs and other controlled substances (as defined by the Comprehensive Drug Abuse Prevention and Control Act of 1970) produced or processed, in whole or in part, in such country, or transported through such country, from being sold illegally within the jurisdiction of such country to U.S. Government personnel or their dependents, or from entering the U.S. unlawfully?</p> | <p>No.</p> |
| <p>3. <u>FAA Sec. 620(a)</u>. Does recipient country furnish assistance to Cuba or fail to take appropriate steps to prevent ships or aircraft under its flag from carrying cargoes to or from Cuba?</p> | <p>No. Ships or aircraft under Liberian flag do not carry cargo to or from Cuba.</p> |

4. FAA Sec. 620(b). If assistance is to a government, has the Secretary of State determined that it is not controlled by the international Communist movement? Yes
5. FAA Sec. 620(c). If assistance is to government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) debt is not denied or contested by such government? No such case in host country.
6. FAA Sec. 620(e) (1). If assistance is to a government, has it (including government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities? No such case in host country.
7. FAA Sec. 620(f). App. Sec. 108. Is recipient country a Communist country? Will assistance be provided to the Democratic Republic of Vietnam (North Vietnam), South Vietnam, Cambodia or Laos? No.
8. FAA Sec. 620(i). Is recipient country in any way involved in (a) subversion of, or military aggression against the United States or any country receiving U.S. assistance, or (b) the planning of such subversion or aggression? No.

9. FAA Sec. 620(j). Has the country permitted, or failed to take adequate measures to prevent the damage or destruction by mob action, of U.S. property?
10. FAA Sec. 620(l). If the country has failed to institute the investment guaranty program for the specific risks of expropriation, inconvertibility or confiscation, has the AID Administrator within the past year considered denying assistance to such government for this reason? Liberia has an Investment Guaranty Agreement with the U.S.
11. FAA Sec. 620(o); Fishermen's Protective Act, Sec. 5. If country has seized, or imposed any penalty or sanction against any U.S. fishing activities in international waters. No
- a. has any deduction required by Fishermen's Protective Act been made? No.
- b. has complete denial of assistance been considered by AID Administrator? No.
12. FAA Sec. 620(g); App. Sec. 504. (a) Is the government of the recipient country in default on interests or principal of any AID loan to the country? (b) Is country in default exceeding one year on interest or principal on U.S. loan under program for which App. Act appropriates funds, unless debt was earlier disputed, or appropriate steps taken to cure default? (a) No.
(b) No.

13. FAA Sec. 620(s). What percentage of country budget is for military expenditures? How much of foreign exchange resources spent on military equipment? How much spent for the purchase of sophisticated weapons systems? (Consideration of these points is to be coordinated with the Bureau for Program and Policy Coordination, Regional Coordinators and Military Assistance Staff (PPC/RC). 3.7% of budget is for military expenditures. The U.S. dollar is legal tender in Liberia so all military expenditures can be considered both domestic resources and foreign exchange. Liberia is not a purchaser of sophisticated weapons.
14. FAA Sec. 620(t). Has the country severed diplomatic relations with the United States? If so, have they been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption? No.
15. FAA Sec. 620 (u). What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the AID Administrator in determining the current AID Operational Year Budget? Liberia is not in arrears in U.N. obligations.
16. FAA Sec. 620A. Has the country granted sanctuary from prosecution to any individual or group which has committed an act of international terrorism? No case to date.
17. FAA Sec. 666. Does the country object on basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. there to carry out economic development program under FAA? No case to date.
18. FAA Sec. 669. Has the country delivered or received nuclear reprocessing or enrichment equipment, materials or technology without specified arrangements on safeguards, etc.? No.

19. FAA Sec. 901. Has the country denied its citizens the right or opportunity to emigrate? No.

B. FUNDING CRITERIA FOR COUNTRY

1. Development Assistance Country Criteria

- a. FAA Sec. 102(c), (d). Have criteria been established, and taken into account, to assess commitment and progress of country in effectively involving the poor in development, on such indexes as: (1) small-farm labor intensive agriculture, (2) reduced infant mortality, (3) population growth, (4) equality of income distribution, and (5) unemployment. Yes, Liberia's Four Year Development Plan focuses on agriculture, health and education delivery to the poor.
- b. FAA Sec. 201(b)(5), (7) & (8); Sec. 208; 211(a)(4), (7). Describe extent to which country is:
- (1) Making appropriate efforts to increase production and improve means for food storage and distribution. The GOL is seeking self-sufficiency in rice production.
- (2) Creating a favorable climate for foreign and domestic private enterprise and investment. The GOL provides a favorable climate for both foreign and national enterprise and investment through their "open door" policy.
- (3) Increasing the public's role in the development process. The GOL promotes self-help as well as government development projects.
- (4)a. Allocating available budgetary resources to development. Twenty-five percent of GOL budget is for development projects.

- (b) Diverting such resources for unnecessary military expenditure and intervention in affairs of other free and independent nations. No.
- (5) Making economic, social and political reforms such as tax collection improvements and changes in land tenure arrangements, and making progress toward respect for the rule of law, freedom of expression and of the press, and recognizing the importance of individual freedom, initiative, and private enterprise. The GOL has become increasingly aware of the need for efficient tax collection, eradication of corruption and social development. There is freedom of press and encouragement of private enterprise reflecting Liberia's doctrine of "humanitarian capitalism".
- (6) Otherwise responding to the vital economic, political and social concerns of its people, and demonstrating a clear determination to take effective self-help measures. The GOL's "total involvement" policy calls for the association of all citizens with the national development process.
- c. FAA Sec. 201(b), 211(a). Is the country among the 20 countries in which development assistance loans may be made in this fiscal year, or among the 40 in which development assistance grants (other than for self-help projects) may be made. Yes.
- d. FAA Sec. 115. Will country be furnished, in same fiscal year, either security supporting assistance, or Middle East Peace funds? If so, is assistance for population programs, humanitarian aid through international organizations, or regional programs? No such assistance is contemplated.
2. Security Supporting Assistance Country Criteria
- a. FAA Sec. 502B. Has the country engaged in a consistent pattern of gross violations of internationally recognized human rights? Is program in accordance with policy of this section? No security assistance requested by/for Liberia.

- b. FAA Sec. 531. Is the assistance to be furnished to a friendly country, organization, or body eligible to receive assistance?

- c. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made?

Description of Project

The Project will improve the welfare of some 9,000 farm families residing in Upper Bong County, Liberia, through a program of integrated rural development. This, together with increased agricultural production, will be achieved through improvement of upland rice cultivation, rehabilitation of rice swamps and coffee and cocoa farms, development of additional swamps for rice cultivation, and development of new coffee and cocoa farms. The project includes provisions for strengthening the Ministry of Agriculture, development of farmer cooperative and infrastructure improvements in the Project area, extension of credit to participating farmers, provision of farm inputs and marketing services, and disease surveillance and control.

The Project consists of the following parts:

A. Farm and Crop Development. A program of development loans and seasonal credits to small farmers, financed through intermediary loans by the Borrower to district cooperatives, will aid in financing farm inputs (to be listed in Implementation Letters) for the development and increased production of upland rice, swamp rice, coffee, and cocoa in Upper Bong County, Liberia. A revolving credit fund, with capitalization provided by reflows to the Borrower from the afore-described loans, will be established to institutionalize and assure continuation of the program of development loans and seasonal credits.

B. Staffing and Support Facilities for Project Management Unit. Qualified technical and administrative personnel and support facilities (office and housing space, vehicles, equipment and sundry materials and supplies) will be provided for a Project Management Unit (PMU) which will be established to manage and implement the Project. The PMU shall consist of a Project Manager, the chief administrative officer who will be responsible through a Project Steering Committee* to the Minister of Agriculture or his designee; a Deputy Project Manager; an Evaluation and Planning Officer; and five operational divisions, each headed by a Manager, i.e., Administration and Personnel, Finance, Training, Cooperatives and Credit, and Agriculture.

C. Training Programs and Facilities. This part will include:

1. Construction and operation of a staff training center and a farmer training center with dormitory facilities.

* The Project Steering Committee, which will be established to ensure cooperation of the departments and agencies of the Borrower responsible for carrying out the Project or any part thereof, shall consist of, inter alia, the Ministers (or their Deputies) of Agriculture (Chairman), Finance, Planning, Local Government and Rural Development and the PMU Project Manager (Secretary).

2. Construction of an additional dormitory at the training facility at CAES, Suakoko.

3. Training of PMU staff in project management, organization and basic technical skills; training of new and existing cooperative staff personnel at all levels, covering farmer credit, input supply, marketing, management and organization; and farmer training consisting of residential farm family courses, demonstrative farms, farm visits, and village/group discussions.

4. Upgrading of the organization and operations of farmer cooperatives in the Project area.

Operation of the training centers, the training to be conducted, and upgrading of the organization and operations of the farmer cooperatives will be the responsibility of and be accomplished by the personnel of the PMU described in Part B above.

D. Social Services. This part will include:

1. Establishment and operation of a Schistosomiasis Surveillance and Control Unit. To deal with the possible increase in schistosomiasis that may result from the encouragement of swamp rice cultivation, a Schistosomiasis Surveillance and Control Unit comprised of a research doctor with laboratory and staff will be established to conduct surveys and research on the disease and to prepare a plan of control.

2. Construction of 300 village wells in the Project area. Wells will be constructed by villagers on a self-help basis with provision under the Project for materials, supervision, and technical advice.

E. Support Services. This part will include:

1. Establishment of a branch of the Liberian Bank for Development and Investment (IBDI) at Voinjama, Liberia. A new branch will administer the revolving credit fund described in Part A above, as well as provide customary banking services in the area.

2. Provision of consultant services to (a) advise on the reorganization of research operations, (b) advise on the creation of a rural development coordinating organization, and (c) conduct a feasibility study for a rural development project in Grand Gedda County.

3. Continue the funding of a rice research scientist at CAES to provide funding to implement the recommendations of the research reorganizational study being financed under E 2.

F. Road Construction and Upgrading. To provide an adequate farm-to-market road system to support the farms and crop development activities noted under part A and to include:

1. Construction of 40 miles of new road.
2. Reconditioning and upgrading of 130 miles of existing road.

The A.I.D. loan will assist in financing parts A, B, and F; and the IDA credit will assist in financing parts B, C, D, and E. The Borrower, in addition to the foregoing financing, will provide all other funds and resources required for the project.

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DRAFT LOAN AUTHORIZATION

A.I.D. Loan No. 669-H-025

Provided under: FAA Sec. 103, Food and Nutrition

For : Liberia Upper Bong County Rural Development

Pursuant to the authority vested in the Administrator of the Agency for International Development ("A.I.D.") by the Foreign Assistance Act of 1961, as amended, and the delegations of authority issued thereunder, I hereby authorize the establishment of a loan pursuant to Section 103 of said Act to the Government of Liberia (Borrower) of not to exceed Six Million Six Hundred Thousand United States dollars (\$6,600,000) to assist in financing the United States dollar and local currency costs of goods and services for the Upper Bong County Rural Development Project and subject to the following terms and conditions:

1. Terms and Repayment and Interest

(a) Borrower shall repay the loan to A.I.D. in United States dollars within forty (40) years from the date of the first disbursement under the loan, including a grace period of not to exceed ten (10) years.

(b) Borrower shall pay to A.I.D. in United States dollars interest at the rate of two percent (2%) per annum during the grace period and three percent (3%) per annum thereafter on the outstanding disbursed balance of the loan and any due and unpaid interest accrued thereon.

2. Other Terms and Conditions

(a) Except for ocean shipping, goods and services financed under the loan shall have their source and origin in Liberia or countries

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included in A.I.D. Geographic Code 941, provided, however, that marine insurance may be financed under the loan only if it is obtained on a competitive basis and any claims thereunder are payable in freely converted currencies. Ocean shipping financed under the loan shall be procured in any country included in A.I.D. Geographic Code 941, not including Liberia.

(b) The loan shall be subject to such other terms and conditions as A.I.D. may deem advisable.

Assistant Administrator
Bureau for Africa

Date



REPUBLIC OF LIBERIA
 MINISTRY OF PLANNING AND ECONOMIC AFFAIRS
 P. O. BOX 9016
 MONROVIA

MPEA-1025/D-7.7/'75

June 3, 1975

Mr. Director:

I have the honour to forward to you the below listed project proposals from the Government of Liberia for technical and capital assistance from USAID. As you can see, these projects are intended to provide needed training and capital to facilitate the smooth operation of a number of agricultural development schemes.

Our project proposals include:

1. Training opportunity at American Universities of Liberians in agricultural and irrigation engineering. Additionally, the assignment of a team of Agricultural Engineering Specialist for a period of three to five years;

JUSTIFICATION: The number and acreage of agricultural projects have increased and further expansion is envisaged, Agricultural Engineering plays an important role in these programs. Presently, most of these services are being performed by Agricultural Engineers from the Republic of China through the Agriculture Mission to Liberia.

2. The provision of a high-level technical adviser in Agricultural Information to strengthen the Ministry of Agriculture to effectively communicate with the small farmers through the various media available to the Ministry of Agriculture;

6/3/75
 The Director
 USAID/Liberia
 Monrovia, LIBERIA

The USAID Director

June 3, 1975

JUSTIFICATION: The information office of the Ministry of Agriculture is not geared up to properly prepare technical pamphlets or bulletins for distribution to farmers through our extension service from research generated in Liberia or else where, and there are indications that our radio coverage is similarly limited in its effectiveness.

3. A capital assistance proposal of up to 10 million dollars for capital projects contained in the feasibility study for integrated Rural Development program in Bong County prepared by the Federal Republic of Germany and similar to the IBRD study of Upper Lofa. Like USAID support to projects on the Upper Lofa Study, the Government requests this magnitude of financing from the USAID for priority projects contained in the Bong Study;

JUSTIFICATION: The project is expected to bring about substantial mobilization of labor and capital resources in the area. Direct benefits from the project is envisaged to include incremental production of rice, tree crop and livestock, which would result in increased income for a large number of families.

4. A team of cooperative specialists to train current and anticipated Ministry of Agriculture personnel in the Cooperative Division, organize and participate in on-going courses to be given to Ministry of Agriculture personnel and cooperative managers and staff and provide technical assistance to and monitor the progress of 6 - 10 pilot cooperatives.

JUSTIFICATION: Cooperatives while not new in Liberia, have begun to take hold and are growing in number. The cooperative division of the Ministry is not developed to the point where it can properly respond to the needs of the growing number of cooperatives in terms of supervision, advisory assistance and training.

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REPUBLIC OF LIBERIA

MINISTRY OF PLANNING AND ECONOMIC AFFAIRS

The USAID Director

June 3, 1975

I should be pleased to receive some reaction to our request as early as you can in order that the details of these proposals may be worked out in due course.

Kind regards,

Sincerely yours,


Dr. Franklin Neal
MINISTER

LIBERIA: UPPER BONG COUNTY INTEGRATED

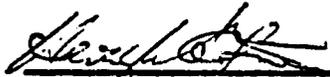
RURAL DEVELOPMENT LOAN

CERTIFICATION PURSUANT TO SECTION 611(e) OF THE
FOREIGN ASSISTANCE ACT OF 1961, AS AMENDED

I, Harvey E. Gutman, Acting Director of the U. S. A.I.D. Mission to Liberia, do hereby certify that in my judgment the Republic of Liberia will have the financial capability and the human resources capability to implement, maintain, and utilize effectively the subject capital assistance project. This certification takes into consideration the requirements placed on the Republic of Liberia to maintain and utilize other projects previously financed or assisted by the United States.

This judgment is based on the fact, inter alia, that:

1. The Government has given a high priority to the construction of rural access roads and training facilities as an essential element of the development of the agricultural sector.
2. It has utilized successfully capital assistance provided under other A.I.D. projects and has given assurances of improved performance in maintaining those projects.



Harvey E. Gutman
7/8/77

Date

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E.O. 11652: N/A

TAGS:

SUBJECT: EXECUTIVE COMMITTEE PROJECT REVIEW -- UPPER BORG
COUNTY RURAL DEVELOPMENT

1. ECPR REVIEWED SUBJECT PRP ON NOVEMBER 30, 1976. GENERAL REACTION WAS FAVORABLE AND PRP WAS APPROVED. PROJECT ISSUES DISCUSSED AND ECPR DECISIONS ARE PRESENTED BELOW IN ITEMS 2 THRU 5. OTHER COMMENTS FOR USAID/L CONSIDERATION IN DEVELOPING THE PP ARE PRESENTED IN ITEMS 6 THRU 11. THE ECPR ISSUES PAPER, WHICH PROVIDES SOMEWHAT MORE DESCRIPTION OF THE PROJECT ISSUES AND SUGGESTIONS, HAS BEEN DOUGHED SEPARATELY TO USAID/L.

2. LAND TENURE -- THE PRP EXPLORED THE SUBJECT OF POSSIBLE INCREASED SMALL FARMER VULNERABILITY TO LOSS OF LAND TENURE SECURITY AS LAND IS DEVELOPED AND RURAL ROADS BUILT. WHILE THE FORMULATION OF A RESPONSE TO THIS ISSUE IS LIKELY TO BE COMPLEX AND POLITICALLY SENSITIVE, A BEGINNING SHOULD BE MADE TOWARD ENSURING LAND TENURE SECURITY FOR PROJECT BENEFICIARIES. TO MERELY FACILITATE LAND REGISTRATION FOR SMALL FARMERS THRU THE PMU LAND REGISTRATION UNIT, AS PRESENTLY ANTICIPATED, MAY BE AN INADEQUATE RESPONSE WHICH COULD EVEN EXACERBATE THE PROBLEM. APPROACHING THE MATTER AS A PROJECT AND AREA SPECIFIC SITUATION PROBABLY OFFERS BETTER PROSPECT FOR A SUITABLE RESPONSE THAN A MACRO APPROACH TO NATIONAL LAND REFORM CONCERNS.

3. GOL MANAGEMENT/MANPOWER CAPABILITY AND PROJECT TIMING -- QUESTIONS HAD BEEN RAISED WHETHER SUFFICIENT INFORMATION WOULD BE AVAILABLE OVER THE NEXT FEW MONTHS TO INDICATE GOL MANAGEMENT/ORGANIZATIONAL CAPABILITY TO IMPLEMENT THE LOFA PROJECT AND GOL READINESS TO COMMENCE A SECOND PROJECT OF EQUAL MAGNITUDE IN FY 1977. COMMITTEE DECIDED TO PLAN FOR AUTHORIZATION OF PROJECT IN TANDUM

WITH IBRD IN APRIL - MAY 1977 AS SOON AS PP REQUIREMENTS CAN BE MET. J. DAWSON EXPLAINED THAT GOL IS PROCEEDING SATISFACTORILY WITH LOFA PROJECT AND THAT EXCELLENT RESULTS HAVE BEEN ATTAINED IN RECRUITING WELL QUALIFIED SENIOR PMU STAFF. THE PRP CALLS FOR A FURTHER REVIEW AND EVALUATION WITHIN 90 DAYS OF LOFA'S ORGANIZATIONAL AND MANAGEMENT STRUCTURE WHICH SHOULD BE INCORPORATED IN THE

BONG PP AS APPROPRIATE.

IN A BROADER SENSE, IT WAS SUGGESTED THAT THE PP ADMINISTRATIVE ANALYSIS SHOULD INCORPORATE REFERENCE TO EXPERIENCE TO DATE WITH IBRD-STYLE PROJECT MANAGEMENT UNITS AND THE APPARENT STRENGTHS/WEAKNESSES OF THIS MANAGEMENT APPROACH.

4. COORDINATION OF IBRD AND AID ACTIONS --

(A) RESERVATIONS HAD BEEN EXPRESSED THAT DECEMBER IBRD - GOL LOAN NEGOTIATIONS COULD LOCK AID INTO DESIGN DECISIONS MADE WITHOUT AID REVIEW. COMMITTEE OPINION WAS THAT AID POSTURE TOWARD THE IBRD AND THE GOL DEPENDED ON SIGNIFICANCE OF PROJECT ISSUES AND DECISIONS AS PERCEIVED BY ECPR; THAT AID MUST OF COURSE INSIST ON DESIGN CHANGES WHERE THE IMPORTANCE OF THE ISSUE WARRANTS; AND THAT LAND TENURE APPEARED TO BE THE ONLY MAJOR ISSUE WITH POSSIBLE IMPLICATIONS FOR EARNEST DISCUSSION BETWEEN AID AND THE IBRD AND THE GOL.

(B) DISCUSSIONS WITH THE IBRD FOLLOWING THE ECPR ILLUSTRATED THE PROBLEM. WHILE IBRD REPRESENTATIVES M. FARRUK AND S. CHOI CONCURRED WITH AID EFFORT TO PURSUE AN APPROPRIATE RESPONSE TO THE LAND TENURE ISSUE, THEY WERE ADAMANT THAT RESPONSE MUST BE LARGELY OUTSIDE PROJECT AND NOT BE ALLOWED AT THIS STAGE TO AFFECT SIGNIFICANTLY PROJECT DESIGN, INCLUDING COSTS AND FINANCING. IBRD POSITION SHOULD NOT BE IGNORED BUT IT IS NOT OUR ONLY CONCERN. WE MUST STILL ADDRESS PROJECT ISSUES TO REFLECT AID AND GOL PRIORITIES. IF SUCH PRIORITIES CAUSE US TO RECONSIDER THINGS SUCH AS OUR PROJECT FUNDING, YET DON'T CHANGE PROJECT'S INTEGRITY, WE SHOULD THEN SEEK NEW UNDERSTANDINGS WITH GOL/IBRD. SOME FLEXIBILITY EXISTS TO ALLOCATE TO SPECIFIC EXPENDITURES AID FINANCIAL CONTRIBUTIONS WHICH ARE PRESENTLY LUMPED INTO THE LARGE CONTINGENCY/INFLATION CATEGORY.

5. ENVIRONMENTAL ANALYSIS --

(A) SINCE THE POTENTIAL EXISTS FOR SIGNIFICANT IMPACT ON THE ENVIRONMENT, A FORMAL ENVIRONMENTAL ASSESSMENT (EA) WILL BE REQUIRED IN RELATION TO HEALTH RELATED ASPECTS, PRIMARILY WATER-BORNE DISEASE, AND TO POSSIBLE CONTAMINATION OF THE POTABLE WATER SUPPLY. SOCIAL ENVIRONMENTAL ASPECTS RAISED IN THE IE2 DO NOT APPEAR SERIOUS ENOUGH TO BE INCLUDED IN THE EA AND WILL BE COVERED IN THE PP SOCIAL SOUNDNESS ANALYSIS, I.E., ARONSON'S ANALYSIS. THE EA SHOULD NOT DUPLICATE ANALYSIS AND STUDIES OR ACTIVITIES ALREADY PLANNED OR UNDERWAY IN LIBERIA BUT SHOULD CATALOG WHAT IS BEING PLANNED OR DONE AND FILL ANY GAPS IN ANALYSIS. SER/ENGR HAS BEEN REQUESTED TO FURTHER APPRAISE THE PRP AND THE IE2 AND MAKE RECOMMENDATIONS TO THE PROJECT COMMITTEE ON THE SCOPE OF EA NEEDED. WILL ADVISE TIMING.

(B) WITH MISSION CONCURRENCE, AID/W WILL DEVELOP A SCOPE OF WORK FOR THE EA AND INITIATE THE FORMAL PROCESS INVOLVED, E.G., INTERAGENCY COMMENTS, SELECTION OF CONTRACTOR. SCOPE WILL PROBABLY REQUIRE FURTHER ANALYSIS OF THE NATURE OF THE HEALTH AND CONTAMINATION RISK AND DISCUSSION OF THE RATIONALE FOR PROCEEDING DISPITE THE INHERENT RISKS.

(C) THE EA REQUIREMENT MAKES IT UNLIKELY THAT PROJECT COULD BE AUTHORIZED PRIOR TO APRIL-MAY 1977. THIS DATE SHOULD NOT BE PERMITTED TO SLIP, THEREBY POSSIBLY CAUSING INTERRUPTED TRANSITION FROM THE IBRD FINANCED (RETROACTIVELY FINANCED) PRE-IMPLEMENTATION PHASE INTO THE PROJECT IMPLEMENTATION PHASE.

6. ROLE OF THE BPMU MONITORING AND EVALUATION UNIT -- USING INNOVATIVE MANAGEMENT INFORMATION TECHNIQUES, THIS UNIT COULD GREATLY ENHANCE THE BPMU CAPABILITY TO MANAGE THE PROJECT AND ACHIEVE IMPORTANT SOCIAL AND ECONOMIC OBJECTIVES. BASELINE AND PROGRESS DATA IS NEEDED REGARDING FARMER ACCEPTANCE RATES, FARM PRODUCTIVITY, FARM BUDGETS

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AND INCOMES, BENEFITS INCIDENCE, LAND TENURE, FARM LABOR, MANAGEMENT OPERATIONS AND PROCEDURES, COOPERATIVE VIABILITY, CREDIT PROGRAMS, ETC. PROJECT INFORMATION NEEDS, SYSTEMS AND PRIORITIES SHOULD BE FORMULATED AND COLLATED IN ONE SECTION OF PP. ADEQUATE FINANCING SHOULD BE ALLOCATED FOR SHORT TERM TECHNICAL CONSULTANCIES FOR THIS UNIT, ESPECIALLY RELATED TO THE SOCIAL/ECONOMIC ANALYSIS FUNCTIONS.

THE PROJECT EVALUATION PLAN SHOULD BE FORMULATED IN MORE DETAIL AND INTEGRATED WITH THE MANAGEMENT INFORMATION SYSTEMS.

CHINESE, BOTH IN THE 1960'S. USAID AND AID/W SHOULD REVIEW THE FILES ON THESE PROJECTS ESPECIALLY WITH A VIEW TO LESSONS LEARNED.

11. ECPR FOUND NO DISAGREEMENT WITH OTHER SUBJECTS DISCUSSED IN PRP SECTION VI "FEASIBILITY ISSUES."
ROBINSON

7. PHASE OUT OF THE BPMU AND POST PROJECT ADMINISTRATION -- PROVISION SHOULD BE MADE FOR ADEQUATE PLANNING AND ARRANGEMENTS OVER THE LIFE OF THE PROJECT REGARDING THE ASSUMPTION BY OTHER ORGANIZATIONS OF BPMU FUNCTIONS. THE CONTINUATION AND FINANCING OF ESSENTIAL POST PROJECT ACTIVITIES, E.G., EXTENSION, CREDIT, MARKETING, INPUT SUPPLY, SHOULD BE ASSURED BY THE END OF THE PROJECT DEVELOPMENT PERIOD. GIVEN THE INSTITUTIONAL AND MANAGERIAL COMPLEXITIES OF THE PROJECT, IT IS PROBABLY IMPRACTICAL TO DO MORE THAN DELINEATE IN ADVANCE CRITICAL IMPLEMENTATION DECISION POINTS WHERE PROJECT ADMINISTRATORS WILL BE OBLIGED TO MAKE DECISIONS REGARDING THE READINESS FOR OR METHOD OF TRANSFER OF RESPONSIBILITIES.

8. COMMODITY PROCUREMENT -- ECPR RECOMMENDED THAT AID REVIEW THE COMMODITY PROCUREMENT OPTIONS WITH REGARD TO AID FINANCING OF INPUTS UNDER THIS PROJECT. THE MAIN QUESTION IS WHETHER PROCUREMENT COULD BE SIMPLIFIED OR EXPEDITED THRU FAR AND/OR SLC ARRANGEMENTS WHEREBY THE AID FINANCIAL CONTRIBUTION WOULD BE FASHIONED TO REIMBURSE THE GOL FOR THE ESTABLISHMENT OF CREDIT OR THE CONSTRUCTION OF ROADS ETC. RATHER THAN TO DIRECTLY PROCURE PROJECT INPUTS.

9. ROADS -- THE DEVELOPMENT OF DETAILED RURAL ROAD CONSTRUCTION PLANS PRIOR TO AUTHORIZATION APPEARS IMPRACTICAL FOR REASONS RELATED TO TIMING, COSTS AND SOCIAL ISSUES. TO FACILITATE ROAD CONSTRUCTION AND SATISFY G11, PP SHOULD SPECIFY ARRANGEMENTS, CRITERIA AND TIMING FOR ROAD SELECTION AND CONSTRUCTION. ALSO, THE PP SHOULD JUSTIFY THE METHOD OF IMPLEMENTATION, I.E., FINANCING A MOPW UNIT AS OPPOSED TO FINANCING PRIVATE SECTOR CONSTRUCTION. ROAD CONSTRUCTION AND EQUIPMENT COSTS APPEAR CONSERVATIVE AND MAY HAVE TO BE REVISED UPWARD PENDING FURTHER REVIEW.

10. OTHER POINTS FOR CONSIDERATION IN DEVELOPING THE PP INCLUDED THE FOLLOWING, SOME OF WHICH ARE DESCRIBED IN THE ECPR ISSUES-PAPER, ITEMS 8.L-10.

(A) PROJECT ISSUES IDENTIFIED BY 10RD -- 10RD WILL BE NEGOTIATION WITH GOL RE NUMEROUS ISSUES, MOST SERIOUS OF WHICH RELATE TO FREE DISTRIBUTION OF TREE CROP SEEDLINGS BY THE GOL, THE ESTABLISHMENT OF BANKING FACILITIES IN THE PROJECT AREA, THE LONG TERM INSTITUTIONALIZATION OF FARM CREDIT IN THE AREA AND POST PROJECT ADMINISTRATION.
(B) DROP THE TERM "INTEGRATED" FROM PROJECT TITLE.

(C) HOW DO GOAL LEVEL OBJECTIVELY VERIFIABLE INDICATORS SUCH AS REDUCED INCIDENCE OF MALNUTRITION RELATE TO PROJECT ACTIVITIES?
(D) PRODUCE STORAGE.

(E) PROJECT MANAGEMENT FUNCTIONS AND PROCEDURES RELATING TO THE ENCOURAGEMENT OF FARMER PARTICIPATION IN LOCAL PROJECT PLANNING.

(F) UPLAND RICE TECHNICAL PACKAGE AND FARM BUDGETS.
(G) ROLE OF WOMEN.

(H) RELEVANT PAST EXPERIENCE IN LIBERIA NEEDS GREATER TREATMENT IN THE PP. PAST EXPERIENCE IN LIBERIA WITH SUCH RD PROJECTS INCLUDES AID'S RURAL AREA DEVELOPMENT (RAD) PROJECT AND THE GBEDI RICE PROJECT, ASSISTED BY THE

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AFR/DR: SKLEIN
GC/AFR: JPATTERSON
AFR/DR: MKIRBY (DRAFT) *sharing cc*
AFR/DR: ECROSS (SUBS)
AFR/DR: WFUGLIE (DRAFT) *cc*
AFR/DR: DOIBBLE (DRAFT) *cc*
AFR/CAWA: SANDERSON (DRAFT)
USAID/L: MSPEERS (DRAFT)
AFR/DR/CAWARAP: GTHOMPSON (DRAFT)
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TAGS:

SUBJECT: ENVIRONMENTAL ASSESSMENT - UPPER BONG CTY.
INTEGRATED RURAL DEVELOPMENT - 669-H-073

1. SUMMARY:
COMMITTEE MET 6/3/77 TO REVIEW EA RECOMMENDATIONS. THE EA HAS A FEW IMPLICATIONS FOR PROJECT DESIGN; OF THESE, HEALTH IMPLICATIONS WERE MOST IMPORTANT. FOLLOWING ARE SUGGESTED APPROACHES AND LANGUAGE FOR INCORPORATION PP.

2. PUBLIC HEALTH:
(A) SCHISTOSOMIASIS SURVEILLANCE UNIT: RECOMMEND USAID DISCUSS WITH GOL AND LOFA PMU POSSIBILITY OF INCLUDING MALARIA SURVEILLANCE AS WELL AS SCHISTO FUNCTIONS IN THIS UNIT. THIS MAY INVOLVE ADDITION OF AN ENTOMOLOGIST AND MALARIOLOGIST, LOCAL STAFF AND OPERATIONAL SUPPORT TO THE UNIT.

(B) SURVEILLANCE OTHER DISEASES: AID/W BELIEVES PROJECT IRRIGATION SYSTEMS WILL NOT PRODUCE WATER VELOCITY FLOW OR OTHER CONDITIONS CONDUCTIVE TO INCREASE OF ONCHO. PROJECT DESIGN RESPONSE IS NOT RECOMMENDED. RE LHASA FEVER,

SUGGEST PP CONTAIN BRIEF DESCRIPTION OF CURRENT EFFORTS TO STUDY/SURVEY DISEASE AND STATEMENT THAT GOL WILL CONTINUE CURRENT EFFORTS AND INCREASE THEM IF NECESSARY.

(C) SCHISTOSOMIASIS AND MALARIA CONTROL/TREATMENT: COMMITTEE FEELS THAT AN ADEQUATE CONTROL AND TREATMENT RESPONSE IS NEEDED AND THAT THIS CAN BE ACHIEVED LARGELY OUTSIDE THE BONG PP THRU CAREFUL DESIGN OF TWO PROPOSED HEALTH PROJECTS:

(1) "HEALTH CONSTRAINTS TO RURAL PRODUCTION" IS A PROPOSED AFR REGIONAL PROJECT CURRENTLY BEING DESIGNED IN AFR/DR AT THE DRAFT PRP STAGE WHICH FOCUSES ON PILOT DISEASE CONTROL/TREATMENT ACTIVITIES IN LOFA AND BONG COUNTIES IN LIBERIA. WITH AGREEMENT OF ALL INVOLVED PARTIES, I.E., USAID/L, GOL, AFR/DR/HN AND AFR/RA, THE "HEALTH CONSTRAINTS" PRP COULD BE DESIGNED TO EMPHASIZE MALARIA CONTROL/TREATMENT IN LIBERIA

AS WELL AS SCHISTO (AS PRESENTLY DESIGNED) AND SERVE AS AN IMPORTANT GOL/AID RESPONSE TO PROJECT RELATED HEALTH CONCERNS RAISED IN SEVERAL STUDIES, INCLUDING THE EA.

(2) "INTEGRATED RURAL HEALTH SYSTEMS" PROJECT COULD ALSO REPRESENT AN IMPORTANT RESPONSE TO PROJECT RELATED HEALTH CONCERNS, PARTICULARLY IF IT COULD BE DESIGNED TO PROVIDE SPECIFICALLY FOR EARLY DELIVERY OF SCHISTO AND MALARIA CONTROL/TREATMENT SERVICES IN THE PROJECT AREA. THIS WOULD BE SIMILAR TO THE LOFA COUNTY SITUATION WHERE THE DELIVERY OF MOH TREATMENT/CONTROL SERVICES IS BEING DEVELOPED UNDER THE LOFA COUNTY RURAL HEALTH OUTREACH PROJECT.

(3) MANAGEMENT ISSUES MAY BE RAISED WHERE SURVEILLANCE IS CONDUCTED THRU THE SSU UNDER THE BONG IRD AND CONTROL/TREATMENT IS CONDUCTED THRU THE MOH SUPPORTED BY OTHER PROJECTS. FOR TECHNICAL AND MANAGEMENT PURPOSES, SCHISTO AND MALARIA SURVEILLANCE, AND DELIVERY OF CONTROL/TREATMENT SERVICES SHOULD BE VERY CLOSELY COORDINATED. HENCE, CLOSE ATTENTION WILL BE NEEDED TO INCORPORATE THE APPROPRIATE COORDINATING MECHANISMS INTO THE MOH OPERATIONS AND INTO THE DESIGN OF THE TWO HEALTH PROJECTS. FOR THE BONG PP, A STATEMENT OF PRINCIPAL THAT SSU SURVEILLANCE FUNCTIONS ARE TO BE CLOSELY COORDINATED WITH CONTROL/TREATMENT FUNCTIONS PERFORMED BY THE MOH SHOULD BE ADEQUATE.

(4) USAID AND GOL SHOULD INCORPORATE SOME HEALTH TRAINING IN PROJECT TRAINING PROGRAMS. (SEE ALSO PARA 6.A-AGR TECHNIQUES). THIS MAY INCLUDE ITEMS SUCH AS (1) DEVELOPING AWARENESS OF POSSIBILITY WATER-BORNE DISEASE DUE TO IRRIGATED AGR TECHNIQUES; (2) ASSURING THAT ALL HOUSEHOLD

MEMBERS INVOLVED IN FARMING ARE INCLUDED IN SUCH TRAINING SESSIONS; (3) INFORMING PARTICIPANTS OF HOW TO RECEIVE TREATMENT.

3. WATER QUALITY

(A) CHEMICAL RUNOFF: EA IMPACT STATEMENT DETERMINED THAT WATER QUALITY EFFECT WOULD BE LOCALIZED AND OVERALL NEGLIGIBLE. AID/W FEELS THAT IMPACT NOT SERIOUS ENOUGH TO INCORPORATE MITIGATION RECOMMENDATIONS SUGGESTED IN EA.

(B) SANITATION AND WATER BORNE DISEASE: MAY BE POSSIBLE FOR SCHISTO UNIT TO INCORPORATE SIMPLE WATER ANALYSIS TESTS IN PRESENT SURVEILLANCE PROGRAM (E.G., COLIFORM, NITRATE, NITRATE ANALYSES). MISSION MAY WISH EXPLORE THIS POSSIBILITY WITH GOL TO SEE IF THIS FEASIBLE. AS ALTERNATIVE, MISSION MAY WANT TO ADDRESS THIS BY INCORPORATION INTO OTHER PROJECTS PER PARA 2.C. ABOVE.

4. AIR QUALITY: EA IMPACT STATEMENT SAID THIS WOULD BE NEGLIGIBLE. PREVIOUS ASSESSMENTS RE USE OF CHEMICAL DUST RETARDANTS AND WATER SPRINKLER FOUND TO BE UNECONOMICAL. SINCE IMPACT NEGLIGIBLE, AID/W RECOMMENDS NO ACTION.

5. PESTICIDES: STPTTEL FOLLOWS REGARDING RECENT AID POLICY ON PESTICIDES AND POSSIBLE IMPLICATIONS FOR BONG PP.

6. AGR TECHNIQUES AND SOIL EROSION:

(A) AGR TECHNIQUES: EA RECOMMENDED EDUCATION IN HANDLING ALL CHEMICALS. AID/W BELIEVES USAID SHOULD CONSIDER BUILDING THIS INTO ALL LEVELS OF PROJECT TRAINING - PMU STAFF, FIELD AGENTS, AND FARMERS. APPROPRIATE EQUIPMENT SUCH AS FACE MASKS AND CLOTHING COULD BE ADDED AS LINE ITEM INPUTS.

(B) SOIL EROSION: EA DID NOT INDICATE SERIOUSNESS; NEVERTHELESS, PROJECT MANAGER SHOULD BE AWARE OF POTENTIAL PROBLEM IN LAND DEVELOPMENT. PRESENT LEVEL OF KNOWLEDGE OF PHYSICAL/AGRONOMIC FACTORS IN PROJECT AREA DOES NOT ENABLE AID/W RECOMMEND VERY SPECIFIC SOIL CONSERVATION AND FERTILITY MEASURES (SUCH AS PLANTING LEGUMES ON FALLOW LAND AS DISCUSSED IN THE EA). HOWEVER, OF MAJOR IMMEDIATE CONCERN WOULD BE HAVING COVER ON FRAGILE SOILS DURING REPLANTING IN RAINY SEASON. ALSO, PLANTING ON CONTOUR AND BUNDS TO CONTROL SOIL EROSION OF IMPORTANCE. PROJECT SHOULD BE PLANNED AND IMPLEMENTED SO THAT UPLAND RICE AND TREE CROPS DEVELOPMENT EFFORTS ARE DIRECTED BY SPECIALIST COGNIZANT OF SOIL EROSION/FERTILITY PROBLEMS AND CONSERVATION METHODS.

7. WHILE THIS CABLE REPRESENTS BEST JUDGMENT OF PROJECT

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COMMITTEE AT THIS TIME, ENVIRONMENTAL ISSUES REMAIN UNDER
DISCUSSION. FURTHER DISCUSSION WITH DANSON WILL BE NECE-
SSARY DURING HIS TOY AID/W. CHRISTOPHER

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E.O. 11652: N/A

TAGS:

SUBJECT: LIBERIA BONG CO. IRD PROJECT

1. SUMMARY -- PROJECT COMMITTEE MET 7/28/77 AND 7/29/77 TO REVIEW SUBJECT PROJECT. PROJECT WAS RECOMMENDED FOR APPROVAL PENDING DIALOGUE WITH USAID/L ABOUT COMMITTEE COMMENTS IN PARAS 3 THRU 8 BELOW WHICH HAVE POSSIBLE IMPLICATIONS FOR MINOR PP REVISIONS.

2. PROJECT TIMING -- ASSUMING MISSION AND GOL CONCURRENCE WITH COMMITTEE COMMENTS BELOW, WE ANTICIPATE PP FINALIZATION BY 8/15/77, DLSC ONE WEEK LATER AND PROJECT SUBMITTED FOR AUTHORIZATION PRIOR TO 8/29/77. THIS SCHEDULE ASSUMES DAWSON ASSISTANCE IN AID/W WEEK OF 8/8/77 TO HELP FINALIZE PP.

3. LAND TENURE -- PROJECT DESIGN INCLUDES SIGNIFICANT INNOVATIVE RESPONSES TO POTENTIAL LAND TENURE PROBLEMS DISCUSSED AT PRP ECPR. SINCE LAND TENURE SECURITY ISSUES ARE LONG TERM, EXTENDING BEYOND THE PROJECT LIFE, PP LANGUAGE IS RECOMMENDED TO PROVIDE SPECIFICALLY FOR AN ANALYSIS LATE IN THE PROJECT LIFE, PERHAPS IN Y4 (PROBABLY BY THE LAND REGISTRATION DIVISION) REGARDING (A) LAND TENURE

STATUS AT THAT TIME IN THE PROJECT AREA (B) PROJECTIONS OF LAND TENURE TRENDS AND FUTURE PROBLEMS AND (C) RECOMMENDATIONS FOR LAND TENURE RELATED ACTIVITIES/PROGRAMS BEYOND THE PROJECT LIFE TO PROTECT SMALL FARMER LAND.

AS PART OF PROPOSED PP DISCUSSION CALLING FOR LAND TENURE ANALYSIS DURING THE PROJECT LIFE, PP SHOULD MENTION THE CONCEPT OF EXPLORING THE POSSIBLE APPLICATION OF TRADITIONAL LAND TENURE REGULATIONS/AUTHORITIES IN PROTECTING SMALL HOLDER LAND. A DUALISTIC APPROACH COMBINING FORMAL LAND REGISTRATION MEASURES AND REVISED

TRADITIONAL LAND USE MEASURES (TO APPROVE SALES, ENFORCE LAND PURCHASE PREFERENCE TO LOCAL SMALL FARMERS, ETC) MIGHT PROVIDE THE BEST METHOD TO PROTECT SMALL FARMERS, IF ANALYSIS SHOULD REVEAL EXCESSIVE FORECLOSURE OR SALE OF SMALL HOLDER LAND TO NON-TRIBAL INTERESTS (CREDIT INSTITUTIONS, AGR COOPS, INDIVIDUALS). FEE SIMPLE TITLE ALONE MAY NOT PROVIDE ADEQUATE SMALL FARMER PROTECTION.

4. POST PROJECT ADMINISTRATION -- DURING PROJECT DESIGN, THE POST PROJECT ADMINISTRATION ISSUE HAS BEEN ACKNOWLEDGED AS A POTENTIAL CONSTRAINT TO SUSTAINED DEVELOPMENT AND SPREAD EFFECT. THE PP CONTAINS (A) ANALYSIS INDICATING THAT EFFECTIVE POST-PROJECT ADMINISTRATION IS FEASIBLE AND (B) WELL CONCEIVED DESIGN MEASURES WHICH SHOULD CONTRIBUTE GREATLY TO POST PROJECT ADMINISTRATION AND FINANCING (E.G., GOL FINANCING FOR LINE ITEMS WITH RECURRENCT COST IMPLICATIONS). TO SUPPLEMENT THESE MEASURES, THE PP SHOULD CALL FOR THE BPMU MANAGER TO DEVELOP, BY ABOUT Y4, AN OPERATIONAL PLAN AND SCHEDULE INCLUDING FINANCIAL PLANNING FOR THE FULL PHASE OVER OF BPMU FUNCTIONS/SERVICES TO OTHER INSTITUTIONS/AGENCIES BY PROJECT COMPLETION.

5. EVALUATION PLAN -- COMMITTEE COMMENDS PP EVALUATION PLAN, INCLUDING INTEGRATION OF MANAGEMENT INFORMATION, MONITORING AND EVALUATION SYSTEMS; CAUTION IS RAISED WITH REGARD TO THE THREE FARM CREDIT FORMS (FARM CREDIT PLAN, FARM RESOURCE APPRAISAL FORM AND FARM CREDIT RECORD). EXPERIENCE INDICATES THAT OVERLY COMPLEX AND EXPENSIVE CREDIT PROCEDURES CONSTITUTE A MAJOR CONSTRAINT TO REACHING LARGE NUMBERS OF SMALL FARMERS. PRESUMABLY, ONE OF THE OBJECTIVES OF GROUP CREDIT APPROACHES IN LOFA AND BONG IS TO REDUCE SUCH COMPLEXITIES. DEPENDING ON PROJECT EXPERIENCE, BPMU MANAGERS MAY DECIDE NOT TO REQUIRE THESE FORM PRIOR TO CREDIT DISBURSEMENT OR TO OTHERWISE SEPARATE ESSENTIAL CREDIT ADMINISTRATION FUNCTIONS FROM MORE PURELY HIS FUNCTIONS.

6. FARM BUDGET ANALYSIS -- COMMITTEE REQUESTS USAID CONSIDER THE NEED FOR POSSIBILITY OF BUILDING A LIMITED AMOUNT OF FARM BUDGET ANALYSIS INTO PROJECT WITHOUT INCURRING INCREASED PROJECT COSTS. FARM BUDGET ANALYSIS COULD BE DESIGNED TO REVEAL ACTUAL ECONOMIC RESULTS/BENEFITS TO REPRESENTATIVE PROJECT BENEFICIARIES, TO SHOW PROFITABILITY OF DIFFERENT PRODUCTION PACKAGES (COFFEE, COCOA, RICE, VEGETABLES, ETC.) UNDER DIFFERENT FARM CONDITIONS (FARM SIZES, LABOR CONDITIONS ETC.). SUCH ANALYSIS IS IMPORTANT FOR SHOWING PROJECT BENEFITS, BENEFITS INCIDENCE AND SPREAD EFFECT POTENTIAL.

7. MALARIA SURVEILLANCE -- DESPITE USAID AND AID/W RESERVATIONS REGARDING THE ENVIRONMENTAL ASSESSMENT (EA) CONCLUSION THAT PROJECT COULD INCREASE MALARIA INCIDENCE, PROJECT COMMITTEE RECOMMENDS THAT USAID ENCOURAGE GOL TO BUILD MINIMAL MALARIAL SURVEILLANCE ACTIVITY INTO SSU FUNCTIONS. ROUGHLY DOLSS0,000 FROM PROJECT CONTINGENCY FUNDING SHOULD SUFFICE FOR LIMITED TECHNICAL ASSISTANCE, SAMPLE SURVEYS AND LAB TESTING. THIS ACTIVITY COULD PROVIDE A HEAD START FOR POSSIBLE MORE COMPREHENSIVE FUTURE PROGRAM OF RESEARCH, SURVEILLANCE CONTROL OR TREATMENT FOR THIS MAJOR HEALTH PROBLEM. AID/W CONCURS WITH USAID THAT PROJECT IS NOT PROPER VEHICLE FOR CONTROL/TREATMENT MEASURES.

8. PESTICIDES -- THE PROPOSED USE OF PESTICIDES WAS REVIEWED WITHIN THE CONTEXT OF PRESENT A.I.D. INTERIM PESTICIDE REGS AND SOON TO BE PROMULGATED NEW A.I.D. POLICIES AND PROCEDURES. BONG PROJECT'S SUBJECT TO THE INTERIM REGULATIONS, I.E., THE SAME REGS APPLYING TO THE LOFA IRD PROJECT, BUT SOME ACCOUNT OF THE NEW REGULATIONS

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MUST BE TAKEN. SINCE THE PESTICIDES, CROPS AND CONDITIONS OF LOFA AND BONG ARE PRACTICALLY IDENTICAL, DECISION WAS MADE TO HANDLE THE LOFA PESTICIDE WAIVER REQUEST AND THE BONG PESTICIDE WAIVER REQUEST AS ONE EXERCISE. THE ACTION MEMORANDUM TO THE ADMINISTRATOR WHICH REQUESTS A PESTICIDE WAIVER REQUEST FOR THE LOFA CO. PROJECT PRESENTLY BEING CLEARED IN DRAFT WILL BE REVISED TO COVER WAIVERS FOR BOTH PROJECTS. ANTICIPATING THE NEW REGS, "BENEFIT-RISK" ANALYSIS WILL BE INSERTED INTO THE ACTION MEMO BY AFR/DR. CHRISTOPHER

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FOR: THOMPSON, AFR/DR/CAWARAP

E.O 11652 W/A
SUBJ: BONG COUNTY IRD PROJECT (669-025)

REF A. STATE 186870; B. MONROVIA 2152; C. STATE 172929

1. SUMMARY: MISSION CONCURS IN GENERAL WITH RECOMMENDATIONS REF A AND BELIEVES GOL WILL OFFER NO MAJOR OBJECTIONS TO THESE MINOR REVISIONS. MINAG OUT OF COUNTRY UNTIL 17 AUG AND MISSION WILL BE UNABLE TO MEET WITH HER ON THESE POINTS UNTIL AFTER TAHT DATE. HOWEVER, ON BASIS OF PREVIOUS DISCUSSIONS BELIEVE IT SAFE TO PROCEED ON ASSUMPTION OF GOL CONCURRENCE. WILL CONFIRM PRIORITY AFTER DISCUSSIONS WITH MINISTER.

2. LAND TENURE: SEE NO PROBLEM IN PROVIDING FOR Y4 ANALYSIS AS RECOMMENDED REF A AND WHILE ANALYSIS SHOULD EXPLORE BETTER APPLICATION OF TRADITIONAL THEURE SYSTEMS, BOTH MISSION AND ANTHROPOLOGISTS HOLSGE AND ARONSON BELIEVE THAT VERY PROCESS OF DEVELOPMENT WILL EVENTUALLY DESTROY TRADITIONAL SYSTEM. IN OUR OPINION THE SITUATION IS SOMEWHAT ANALOGOUS TO TRIBAL LAND RIGHTS OF AMERICAN INDIANS DURING 19TH CENTURY. BELIEVE GREATEST POTENTIAL BENEFITS OF LAND TUNURE PROGRAM OF SUBJECT PROJECT WILL BE DEVELOPMENT OF A MODEL TO ALLOW THOSE PRESENTLY UNDER TRADITIONAL TENURE ARRANGEMENTS TO MOVE INTO THE MODERN SYSTEM WITH MINIMUM OF DIFFICULTY AND RISK. Y4 ANALYSIS SHOULD BE COMPREHENSIVE ENOUGH TO ADDRESS ALL FACETS OF PROGRAM EFFECTS.

3. POST PROJECT ADMINISTRATION: SEE NO PROBLEM IN PROVIDING FOR Y4 OPERATIONAL PLAN AS RECOMMENDED. IBRD LOAN FOR BONG PROVIDES FUNDING FOR FOLLOW-ON STUDY OF MOA REORGANIZATION, WHICH AMONG OTHER THINGS WILL FOCUS ON COORDINATION AND POST PROJECT SUPPORT OF ALL CURRENT RD PROGRAMS. ALSO BELIEVE THAT EFFORTS TO BE UNDERTAKEN IN PROJECT 669-0137 WILL RESULT IN HEAVY MOA PARTICIPATION IN DEVELOPING RECOMMENDED PLAN.

4. EVALUSTION PLAN: MISSION CONCURS IN AID/W'S OBSERVATION THAT DATA COLLECTION INSTRUMENTS NOTED REF A MAY BE TOO COMPLEX FOR USE IN CREDIT APPROVAL PROCESS. BELIEVE BEST SUITED FOR USE BY PROJECT STAFF AS PART OF OVERALL INFORMATION AND EVALUATION SYSTEM. RECOMMEND THAT LAST SENTENCES OF PARAS 3 AND 4, PG 8, ANNEX V BE RECORDED THIS EFFECT OR DELETED. MISSION FURTHER RECOMMENDS THAT AID/W CONTACT IBRD TO EXPLORE HOW RESOURCES OF BOTH ORGANIZATIONS CAN BE UTILIZED TO ACCELERATE EFFORTS TO LOCATE SUITABLE EVALUATION OFFICER FOR LOGA AND BONG PROJECTS. MISSION BELIEVES IT IMPERATIVE THAT EVALUATION OFFICER BE IN COUNTRY BEFORE END OF YEAR.

5. FARM BUDGET ANALYSIS: CONCUR; EVALUATION PLAN IMPLIES A CERTAIN DEGREE OF FARM BUDGET ANALYSIS (FBA) IN ORDER TO ARRIVE AT GOAL AND PURPOSE CONCLUSIONS, BUT FAILS TO CLEARLY ARTICULATE THIS POINT. FURTHER, GOL KEENLY INTERESTED IN FBA AS PART OF OVERALL EVALUATION EFFORT

AND HAVE REJECTED SEVERAL CANDIDATES FOR EVALUATION OFFICER POSITION BECAUSE THEY LACKED EXPERIENCE IN THIS AREA.

6. MALARIA SURVEILLANCE: MISSION ACQUIESCES TO AID/W THIS ISSUE AND CONTACTING MOH TO SEE HOW GOL WISHES TO STRUCTURE ASSISTANCE THIS AREA.

7. PESTICIDES: APPRECIATE AID/W ASSISTANCE THIS AREA. ASSUME NO ADDITIONAL DATA REQUIRED FROM MISSION.

8. ON BASIS OF REF C, DAWSON DID NOT PROCEED TO AID/W ON RETURN FROM R&R. SINCE REF A NOT RECEIVED UNTIL 10 AUG AND SINCE REVISIONS REQUESTED ARE NEGLIGIBLE, WILL NOT SEND DAWSON UNLESS ABSOLUTELY NECESSARY. OPERATING EXPENSE FUND EXTREMELY LIMITED AND MISSION WISHES TO COMPLY WITH ADMINISTRATOR'S REQUEST TO REDUCE OPERATING EXPENDITURES TO LOWEST POSSIBLE LEVEL.

9. PLEASE ADVISE TIMING CONGRESSION NOTIFICATION.

10. PLEASE POUCH TWELVE (12) ADDITIONAL COPIES CONG PP. MORAM

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