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LIBERIA'S AGRICULTURAL  
PROGRAM DEVELOPMENT PROJECT:  
EVALUATION AND RECOMMENDED EVOLUTION

A.I.D.  
Reference Center  
Room 1656 NS

(Project #669-11-130-123)

A report prepared for  
THE USAID MISSION IN LIBERIA  
under AID/otr-1380, Work Order 3

By ROBERT R. NATHAN ASSOCIATES, INC.  
Washington, D.C.

December 1976

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December 30, 1976

Mr. Gary Adams, Project Officer  
USAID, Room 2723, New State  
21st and Virginia Avenue, N.W.  
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Dear Mr. Adams:

We are pleased to submit herewith 50 copies of the final, edited report entitled "Liberia's Agricultural Program Development Project: Evaluation and Recommended", prepared by Richard G. Wheeler of our staff.

In compliance with Mr. Wheeler's request, we are sending via air one copy of the report to Mr. C. Blair Allen, Rural Development Officer, USAID/Liberia. We are making no other distribution.

Very truly yours,



Robert H. Johnson  
Vice President  
International Operations

Enclosures  
RHJ/mlr

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## I. THE ASSIGNMENT AND ITS SETTING

This report was prepared in response to a request for an evaluation study of activities conducted in Liberia since 1972 under an Agricultural Program Development Project (#669-11-130-123). The Scope of Work for the study was included in a PIO-T (#698-135-3-6177003) to be performed through a work order under an IQC contract with Robert R. Nathan Associates.

### The Assignment

Under these arrangements, RRNA provided the services of an Agricultural Economist/Planner (R. G. Wheeler) to assist USAID/L in preparing an evaluation report of the ongoing Agricultural Program Development Project, together with recommendations for follow-on support to Liberia by way of a proposed Agricultural Production Economics and Statistics Project (PID-669-0137, June 1976). The timing and purpose of the evaluation have given strong emphasis to the extraction of lessons and the making of recommendations useful for design of the follow-on support.

In performing the evaluation, the contractor has been responsible to the Mission Evaluation Officer, Ms. Nancy Tumavick. Also participating in the evaluation was Mr Nathan Fields of AFR/DR, who arrived in Monrovia shortly after the consultant to carry forward design work on the proposed Agricultural Production Economics and Statistics Project, including the immediate incorporation of recommendations resulting from the evaluation. The participation of Mr. Fields in the evaluation was most helpful, but responsibility for the conclusions and recommendations of the present report rests with RRNA.

In Washington, Messrs. Gary Adams (AFR/DR/CAWARAP) and James Wedberg (AFR/CAWA) provided helpful briefings before departure. Gratitude for assistance in Monrovia is expressed to Stanley Siegel, USAID Director; to Noel Marsh, Program Officer; to Ms. Nancy Tumavick, Evaluation Officer; to Blair Allen, James Dawson, Richard Goldman, Ray Fox, Luther Geiger, Ms. Jeanne Grewe, and Ms. Patricia McCarthy of the USAID Rural Development staff; to Deputy Minister of Agriculture Nah-Doe Bropleh; to Ms. Florence Chenoweth, Assistant Minister for Planning in the Ministry of Agriculture; to Joshua Cooper, Director of the Division of Economic Planning and Evaluation; and to many others in USAID/L, the Ministry of Agriculture, and related agencies who provided information, ideas, and assistance.

The RRNA Agricultural Economist/Planner arrived in Monrovia on 12 November 1976 and departed on 5 December.

### The Setting

Until the advent of plantation rubber production in the 1920's, Liberia's agriculture was almost wholly devoted to shifting cultivation of upland rice and associated subsistence crops. Individual families and villages maintained a high degree of self-sufficiency and had little production to sell. In fact, roads and other infrastructure for movement and communication from the concentrations of population in the interior to Monrovia and the trading community scarcely existed. Most of the coastal lowlands were only thinly settled and were made inaccessible by land from Monrovia because of the rivers flowing at right angles to the coast.

Inputs for agriculture consisted almost exclusively of tribal lands, family labor, and such simple tools as could be carved from wood or forged from local iron in the villages.

The pattern for shifting cultivation required the clearing of a forested or bush-covered plot for upland rice and interplanted food crops each year; planting cassava on part of this area for the second year; and then allowing the plot to revert to bush for at least 5 to 12 years for a rebuilding of soil fertility. Under adverse conditions, families sometimes felt compelled to supplement their plantings of upland rice with small plots of "swamp" rice, but swamps were avoided if possible, perhaps because of the vaguely understood hazards of schistosomiasis and other waterborne infections. Labor inputs for shifting cultivation have been high because of the need for clearing new land annually, and the per capita availability of land has declined as population has grown, forcing a shorter and shorter cycle with correspondingly dwindling opportunity for recovery of soil fertility levels.

In the 1970's, most of the country's rural households (some 120,000 of them) still participate in a form of agriculture not much removed from the pre-1920 pattern. A spreading infrastructure and the participation of rural family members in wage employment on plantations, in the iron mines, in forest extraction, and in the growing urban economy of Monrovia have brought to the attention of all the disparity in living levels of the rural poor and the advantaged urban families. Education and health services are pushing out into rural areas, and rural families are increasingly faced with opportunities to purchase many kinds of merchandise and services that were heretofore virtually unavailable to them. As a result, the estimated \$70 per capita income of the traditional farmer comes to appear smaller and smaller relative to the national 1972 per capita level of about \$400.

Since commercial production of rubber was initiated by Firestone in 1926, this crop has come to occupy nearly

300,000 acres, about equally divided between concession lands and private plantings of well-to-do entrepreneurs and other Liberian growers. Many of these acres are now past their prime and in need of replanting with clones of higher-yielding strains. Yields on the concession lands, however, remain well above those on holdings of the Liberian growers.

In general, the country's land resources are well suited to production of such tree crops as coffee, cocoa, and oil palm. Traditional rice growers have already established small plantings of coffee and cocoa to provide a limited source of cash income and have collected fruit bunches from plentiful wild stands of oil palm, extracting the pericarp oil for home consumption and selling the kernels for extraction of oil from them elsewhere.

Growth of the urban population, in both absolute and relative terms, has led to substantial imports of rice, meat, and certain other foods. The consequent drain on foreign exchange and the vulnerability of relying on imports as a source of the country's staple food have been found unacceptable by the Government of Liberia as a matter of national policy. A central goal of the GOL's agricultural policy has therefore been to achieve self-sufficiency in rice production. As early as 1954, for example, some 65 acres of land were cleared and planted in swamp rice as a demonstration effort at Gbedin, Nimba County. Subsequently, several special rice projects and an expanded rice program were undertaken. By 1971, directives had been issued by President Tubman and his successor, President Tolbert, requesting the attainment of self-sufficiency in rice production during the 1970's. Concurrently, the orientation of programs of the Ministry of Agriculture has taken account of the

potential advantages of employing modern technology in producing coffee, cocoa, oil palm, and other tree crops.

The thrust of MOA programs has emphasized the following elements:

- . Attempts to provide mechanical power for clearing land to be used continuously in producing rice (mainly on swamplands with some potential for controlling water flows and on larger, lowland tracts subject to fully irrigated cultivation).
- . Attempts to encourage the use of improved varieties of seed rice (for example, LAC 23) and fertilizer on the traditional upland plots as well as in cultivating swamps and lowlands.
- . In combination with the two foregoing approaches, an effort to encourage traditional producers to plant coffee, cocoa, and oil palm on former upland rice plots, thus effecting a transition to a form of sedentary agriculture using modern technology for tree-crop production on the uplands and for rice production on swamplands and irrigated lowlands.
- . Accelerating efforts to examine and implement large-scale mechanized crop-production possibilities on cooperative or corporate units with a central plantation surrounded by satellite holdings of outgrowers who would be guided and served by the central unit. Under such schemes, the central unit would provide operation of equipment for land clearing and tillage, improved planting materials, manufactured inputs, and marketing services, while the outgrowers would provide the labor input and would share in residual earnings. The design of such units for Liberian conditions draws heavily on experience in producing oil palm, coconuts, coffee, and cocoa in the Ivory Coast and other countries.
- . Recently initiated large-scale efforts for Integrated Rural Development, beginning with USAID/IBRD-financed projects in the area of Upper Lofa County and in Bong County.

To date, accomplishments under these approaches have been more limited than is desired. Agrimeco, a unit established to provide mechanical equipment services, originally assisted by an Israeli firm, has demonstrated success in clearing large areas of land, but progress has lagged in the utilization of these lands for crop production. The Extension Service has been severely handicapped in achieving the adoption of modern technology by traditional cultivators, partly because of its limited human and material resources, partly because of the difficulty of reaching rural households by available means of communication, partly because many households still lack easy access to markets for products and inputs, and partly because adaptive research has not yet produced adequate answers concerning the technical and economic aspects of the application of modern technology.

It is in this setting that efforts to create a capability for development planning in the MOA have been taking place since August 1970, when an agricultural economist and a marketing specialist arrived under a USAID/USDA/PASA and the then Minister of Agriculture, James T. Phillips (now Minister of Finance), appointed as Economic Officer Louis A. Russ, who subsequently became Deputy Minister and is now the Minister of Agriculture. These events led to initiation of the Agricultural Development Planning Project (#669-11-130-123) in 1972, with the two USDA/PASA advisors continuing to serve under the new project.

During this period, the Planning Division and other units of the MOA have received important assistance from Peace Corps Volunteers. Other technical assistance to the MOA has come from the UNDP/FAO, the IBRD, the Taiwan Agricultural Mission, and various other foreign donors (see DAP, especially pp. 29-31)

## II. ACHIEVEMENT OF TARGETS

In the aggregate, the Agricultural Program Development Project has made substantial progress in accomplishing its stated purpose, expressed in broad terms as follows:

To provide technical expertise and related training and commodities to enhance the capability of the Ministry of Agriculture (MOA) to plan and monitor its development program.

Achievements by specified subareas (components) have varied considerably in quantitative respect, however, and qualitative performance can be evaluated only against statements of expectations that are subject to variations of interpretation. On balance, project accomplishments to date are judged to provide certain important capability elements basic to attaining the Program Goal:

To develop and implement policies and programs that will enable traditional farmers to modernize production technology, to increase their income flows, and to participate more fully in the economic and social outputs of Liberia.

The Project Purpose, as set forth in the Project Paper (PROP) of 3/72,<sup>1/</sup> comprises three specific components of assistance:

1. The MOA Planning and Management Unit -- To improve its capability for sector analysis, development planning, and evaluation of projects.

<sup>1/</sup> The PROP of 3/72 is identified as "Revision #1" but appears to be the first accepted version. A version identified as "Original, 1/72" includes major activities that were apparently neither accepted nor funded in "Revision #1," which followed the "Original" by only 2 months.

2. The MOA Marketing division -- To develop a capability for improving the marketing system and thereby provide production incentives to traditional farmers.
3. In establishment of MOA soils division -- To provide information on land capabilities for planning purposes and for use of individual farmers.

The combination of components in the PROP has undergone certain changes since 1972, in response to changes in GOL organizational structure. Assistance for developing and institutionalizing an agricultural statistics system was recognized from the beginning as an essential element of support for agricultural planning, although it was originally mentioned among the outputs (#5. Data Collection and Tabulation) rather than among the components of Project Purpose. At that time, major responsibility for the agricultural census and other comprehensive data collection activities rested with the Ministry of Planning and Economic Affairs (MPEA) As awareness of the broad needs for timely collection of agricultural data grew during the early phases of the Planning Project, it became evident that a transfer of responsibilities for collection of basic agricultural data to the MOA was both desirable and feasible, with the result that a 40-member statistical unit was transferred from MPEA to the MOA's newly formed Planning Division. At this point, Project efforts could and did become more sharply focused on satisfying needs for basic data. Reference to statistics gathering was added to the Project Purpose in Revision 2, 4/74, although collection and tabulation of data had already been identified as a project output, and an agricultural statistics advisor had been scheduled to arrive in the first quarter of FY 1973 but actually arrived in March 1973. At about the same time, the first component of Project Purpose was also revised (Rev. 2, 4/74) to take explicit account of the close relationship between planning efforts in MOA and MPEA; moreover, limited

between planning efforts in MOA and MPEA; moreover, limited support, including the assistance of one advisor, was provided through the project for a joint AID/IBRD/UNDP four-man advisory team in MPEA.<sup>1/</sup>

In the meantime, successful efforts by MOA for reorganization of LPMC and reorientation of pricing activities led to the shifting of certain responsibilities in marketing from MOA to the Liberian Produce Marketing Corporation (LPMC), and project activity in this subarea terminated in 1974, coincident with the end of the marketing specialist's tour. This corresponded to original intentions as evidenced by the staffing and funding pattern of the 3/72 PROP.

At present, the MOA's Economic Planning and Evaluation Division has broad responsibility for producing the agricultural statistics basic to agricultural development planning, as well as for both planning and evaluation activities. The Research and Statistics Unit is considered as one of several sections of the Division,<sup>2/</sup> but, is by far the largest section, accounting for more than 70 percent of the Division's total budget and personnel. The Director of the Research and Statistics Section is also Deputy Director of the Planning and Evaluation Division. The Soils component of the project is conducted through one of several divisions or units within the purview of the Assistant Minister for Agriculture, who is also responsible for the Rice Division, the Extension Service, Agricultural Credit, and Cooperatives and Marketing. Further discussion of accomplishments will be presented according to the three components identified in the Project Purpose.

1/ This component of the project is scheduled for periodic tripartite evaluation and hence is excluded from specific examination here.

2/ Local usage does not always follow any precise differentiation among such terms as "Section," "Division,"

Agricultural Statistics  
and Planning

The MOA Planning Division was established at the start of the project and has since grown from a nucleus staff of four, working under a Director, to a total of some 75 or more, working under the immediate direction of a returned participant with a master's degree and led by an Assistant Minister for Planning who was the original Division Director. The Division's budget has grown both absolutely and in relation to the budget of the MOA and of the GOL, as demonstrated by the following data:

<u>Year</u>	<u>GOL</u>	<u>MOA</u>	<u>PD</u>	<u>PD/MOA</u>	<u>PD/GOL</u>
	(thousands of dollars)			(percent)	(percent)
1970	65,000	1,249	0	0.0	0.00
1972	75,000	2,826	29	1.0	0.04
1975	117,000	6,210	216	3.5	0.18
1976	130,000	7,251	318	4.4	0.24

Growth of the Planning Division's functional capability is reflected to a degree by the staffing pattern attained to date (table 1). Note that a large proportion of the individuals employed for statistical activities consists of field personnel, including some 19 field interviewers and a corresponding number of day laborers who assist in measuring fields and in such activities as crop cutting for estimating yields. The head of the section must devote a large proportion of his time to administrative matters, so most of the input for planning, supervising, summarizing, and reporting actual statistical investigations must be performed by two or three young statisticians with some training but very limited experience. Accomplishments by this group have depended to date on assistance from the USAID statistical advisor and two to four Peace Corps Volunteers.

and "Bureau." The organizational structure of the Ministry, the Planning Division, and the Statistics Section appears in appendix charts A-1 through A-3.

The output target for data collection and tabulation has been accomplished in generous measure, as reflected by completion of the 1974 and 1975 rice surveys, initiation of the 1976 rice survey, and publication of the Statistical Handbook (discussed more fully in chapter III). One must assume the mention of data on livestock commodities in the output target was included only to avoid excluding the possible collection of incidental data concerning the country's very limited commercial livestock enterprises.

Whereas the Statistics Section includes a sizable number of field enumerators and their laborer assistants, the remaining sections of the division are staffed mainly with some 18 junior and senior professionals, including six who are abroad for study at the master's level. The director, of course, carries a heavy load of administrative activity and the other professionals are spread thinly over a wide range of sectional responsibilities (see chapter III).

The output target for functional capability expressed in the PROP of 3/72 called for an effectively operating Planning Unit staffed with one chief, five returned participants, and 10 junior staff by FY 1975; actually, the Planning Division has a larger total staff, broader responsibilities than originally contemplated, especially in statistical data collection, six returned participants (three with masters' degrees, three with practical experience), with several more participants expected to return before the project ends. Except that the return of participants has lagged somewhat behind the rather optimistic target completion date of FY 1975, for a combination of reasons commonly experienced in this sort of activity, the attainment of functional capability has exceeded original expectations.

The strong effort for identifying and training participants has been of particular significance in strengthening the capabilities of the Planning Division. Key positions are now filled by the six returned participants, and some of those still abroad can be expected to lead sections upon their return. The range of fields of training is helping to create a balanced capability for producing statistical data, conducting economic studies, and preparing and evaluating development projects. One participant is receiving training in both agricultural economics and the law, with a view to contributing to the solution of institutional problems, including those relating to land tenure. A list of division staff members who have been sent for training as participants appears in appendix chart B-1.

The output target for the Planning Division's functional capability includes the phrase "operating effectively" -- a term which is scarcely subject to fully objective measurement against an absolute scale. What can be said is that during the Division's relatively short existence it has made uncommon progress toward effective operation in several of its areas of responsibility. The results to date have been significant and have been attained with efficiency in the use of inputs.

Economists and others differ in their interpretation of the kinds of studies to be identified as "sector analyses." Common sense suggests that such a study must include some examination of the sector as a complex of many interacting elements, which must be examined and described in their relation to one another. Qualitative and causative relations must be explored and understood in some measure before the nature, validity, and usefulness of quantitative

measures can be established. In several other countries, the construction and quantification of mathematical models has been used in sector analysis, as in other kinds of studies, with variable results, but it is not the only useful form of sector analysis. Rice and Glaeser, in evaluating AID's experience with agricultural sector studies, considered limiting the term "sector analysis" to studies involving "computerized model building," but they rejected this approach, noting that the current Agency usage gave a broader meaning to the term. Their adopted definition is as follows:<sup>1/</sup>

Sector analysis means a study of the principal socio-economic factors governing development of the sector, for the purpose of identifying manageable, integrated projects and policies, with high payoff.

They added that phrases such as "sector survey," "sector study," and "sector review" meant approximately the same thing.

The foregoing definition is accepted for the purposes of the present report, with the caveat that the word "identifying" seems to place too narrow an interpretation on the potential utility of sector analysis.

Development planning consisting only of the preparation and appraisal of isolated projects can be risky indeed, if not based on a broad view of the sector as a mechanism which functions through the interaction of its many components. In the words of Rice and Glaeser,

1/ E. B. Rice and E. Glaeser, Agricultural Sector Studies: An Evaluation of AID's Recent Experience, Evaluation Paper 5, A/AID Program Evaluation, August 1972, p. 13.

Past experience in AID has shown that planning at the macro level does not give adequate attention to priorities and relationships within any given sector. The opposite approach of planning at the project level has also been judged deficient for identifying sector priorities because the project perspective is too narrow. . . .The two approaches clearly leave a gap which must be filled by the analysis of a system of variables which is larger than that in view of the typical project technician, yet smaller than the national planning model. The sector system is in that range,<sup>1/</sup> and sector analysis is one way to fill the gap.<sup>2/</sup>

Although the project has not yielded a comprehensive agricultural-sector analysis, various materials completed by the Planning Division, including descriptive material in the Four-Year Plan, can be considered early contributions to elaboration of a full-scale sector-analysis report. In the 3/72 PROP, the broadly stated target for sector analysis was obviously intended to call for only some first approximation to describing the functioning of the sector, given the specified target completion date of FY 1973. We conclude that the division's present work demonstrates prior completion of a rudimentary analytical foundation, although a comprehensive sector analysis remains to be prepared and is urgently needed.<sup>2/</sup>

Meanwhile, the division has participated substantially in identifying, designing, and appraising individual agricultural development projects such as those mentioned in the 1976-80 National Socio-economic Development Plan. The relationship between participation in project development and accomplishment of the program goal, however, depends entirely on the quality of the work and the influence of the

<sup>1/</sup> E. B. Rice and E. Glaeser, Agricultural Sector Studies: An Evaluation of AID's Recent Experience, Evaluation Paper 5, A/AID Program Evaluation, August 1972, p. 13.

<sup>2/</sup> In the meantime, reports of IBRD Missions and contract studies represent the nearest approximation to a full-scale sector analysis.

Division in affecting program and policy decisions. Support for the division's work indicates that top policymakers attach value to the output; other measures of quality are not available for the purpose of this evaluation.

Criteria and procedures for monitoring the effectiveness of programs have not been fully formulated to date, but semiannual reports on special forms designed by MPEA will now be made for development projects. The Project Evaluation Section has been assembling quarterly progress reports. Although the latter reporting system was originally intended for development projects, it is now applied to others as well. To date, manpower has been inadequate for using the reports to monitor effectiveness and to initiate adjustments as needed. An easing of this constraint can be expected as additional participants return from overseas study, but a well-designed system can scarcely become fully operative much before the end of the project.

Project inputs for planning have obviously been sufficient to permit the accomplishments already noted. One expatriate senior agricultural economist was on deck at the start of the project; an agricultural statistician arrived in March 1973, and a second agricultural economist arrived in September 1973. The team was not up to full projected strength for FY 1973 (about 15 man-months instead of 36 man-months) but total inputs to date correspond approximately to those specified in the 4/74 revised PROP, which included funding for FY 1975 and 76 that had been omitted in the 3/72 PROP. Departures and returns of participants have tended to lag only moderately behind the original schedule, and the total participant training program is well on the way to accomplishment. Nevertheless, some participants will still be abroad for training until about the end of the project, and those

returning during the intervening months will be thrust into positions of considerable responsibility with little if any substantive on-the-job assistance from the project's technical advisors. To aggravate the problem, administrative matters require so much attention from the participants who returned earliest that their time for substantive work and supervision of less-experienced personnel has been and will continue to be extremely limited. For these reasons, gains made to date could easily be sacrificed unless some provision is made for follow-on technical assistance.

### The Marketing Component

Assistance in marketing was originally intended to lead to the formulation and initiation of marketing policies and systems to serve the economic objectives of the agricultural development plan. A marketing advisor was on deck at the start of the project to work with the MOA division concerned with marketing and cooperatives. Marketing work under the project was phased out in 1974, at the end of the marketing specialist's second tour in Liberia. At approximately that time, LPMC assumed new responsibilities in marketing and the marketing specialist reported that the principal objectives of his assignment had been completed, through the development of a system of minimum rice prices, the establishment of up-country rice mills, and various other accomplishments. It was also indicated that LPMC would be in a position to employ its own marketing specialists in the future.

The Corporation has tied its farm pricing scheme for coffee, cocoa, and palm kernels, as well as for rice, more closely to world market prices, has established a reserve fund for price stabilization, and has taken steps to broaden opportunities for up-country producers to conclude sales at

prices somewhat closer to established buying prices in Monrovia. LPMC has exclusive rights for export of coffee, cocoa, and palm kernels and now buys through some 40 exclusively licensed agents, including 27 cooperatives.

These changes are evidence of an intent by the GOL to improve the marketing system for products handled by LPMC. This can be considered a substantial accomplishment in relation to the marketing component of the Project Purpose. The new approach in LPMC has relieved the MOA marketing unit of some responsibilities apparently intended for it when the project was initiated. The intended input of 3 man-years of a regular-term marketing specialist was realized and performance seems to have been substantially in accord with expectations, insofar as they can be interpreted at this date.

## The Soil Survey Component

Certain ambiguities of language and expectations are revealed by careful reading of available documents concerning the soil-survey component. In practice, the products of soil-survey work are classification and mapping of soil groupings such as associations, series, types, and phases. Soils mapping for a sizable country might show no more than approximate boundaries for 20 to 50 soil associations, whereas detailed mapping for a small farm might also reveal the approximate boundaries of at least 20 or more soil types or phases. Rather generalized mapping at a reconnaissance level (say at a scale of 1:500,000 or 1:1,000,000) often precedes more detailed mapping for all or part of a given geographic area. Interpretation of soil-survey data can provide guidance on land-use capabilities and suitable management practices -- in very generalized and superficial terms for surveys at the reconnaissance level and in more specific terms as the level of mapping becomes more detailed. The PROP of 3/72 emphasized the role of soil surveys as a guide to soil-management recommendations for individual farms -- implying that soil surveys would be made at a rather detailed level -- yet the usefulness of this approach seems uncertain for an area predominantly devoted to shifting cultivation on a 10-to 15-year slash/burn cycle. The approach which seems to be implied by the PROP stands in sharp contrast to results of a study made only 2 years earlier out of which were produced a series of recommendations on soil-survey work in Liberia, including the following:<sup>1/</sup>

1/ David F. Slusher, A Soil Survey Program for Liberia, USDA/USAID Field Report 1. June 1970.

1. That a reconnaissance soil survey be undertaken as soon as possible to provide soils information for regional and national agricultural planning and to develop a framework for making detailed soil surveys for planning individual farms.

Other recommendations of the report provided for adopting a national system of soil classification, for establishing a Soil Survey Section in MOA, and for a comprehensive training program of soil scientists to permit staffing the Soil Survey Section. It was indicated that a team of five expatriate soil scientists and an equal number of GOL counterparts (trainees) would be expected to complete the reconnaissance survey in 5 years.

In the draft PROP dated 1/72, provision was included for a team of four regular-term soil scientists working through a period of 3 to 4 years (186 man-months) to accomplish the same purpose, end-of-project status, and outputs as those set forth 2 months later in the 3/72 PROP, which provided only 96 man-months to attain identical outputs. In April 1974, the aggregate input of regular-term soil scientists was further reduced to 63 man-months in PROP revision 2, and in December 1974 it was still further reduced to 45 man-months with only minor changes in wording, amounting to no clear-cut reduction of the output targets or any revision of the EOPS. One must surmise that the same words had different meanings to different people at different times; also, that the differences between a reconnaissance survey of the country and spot mapping of small areas were less than fully appreciated by some of those involved in designing and managing the project.

The ambiguities suggested above may have led to some of the difficulties experienced along the way. It is reported

that MOA's early interest was in having expatriates produce a soil survey for the entire country, presumably at a reconnaissance level and with little if any emphasis on developing local soil-survey capability. After the project had been undertaken, with emphasis on training in developing a classification system for the country and on use of intermediate-level mapping based on use of aerial photographs for sizable pilot areas, however, MOA became eager to see the developing capabilities of partially prepared trainees applied in spot mapping of individual holdings and prospective sites for public or private agricultural development. This has tended to disrupt the training program and pilot mapping from time to time. Where aerial photos are not available for use as a locator base, the spot mapping can best be described as "exploratory." Such work has presumably been of some planning value for a few new investors in potential farmland as well as for MOA identification of lands to be used in several special development projects which seek to convert traditional farmers to sedentary cultivators of tree crops and irrigated swamp rice.

Such use as has been made of the preexisting soils laboratory has been directed toward relatively simple tests for N, P, K, and pH of samples from individual farms, rather than for the more sophisticated tests required in classification development; samples for the latter tests, meanwhile, have been sent to the United States through arrangements made by the Soil Conservation Service. The Extension Service has not commonly brought samples for testing or participated in management recommendations to producers whose soils have been tested. Moreover, the simple tests which have been completed in small numbers have limited utility for management recommendations, inasmuch as farmers advised to purchase

fertilizer can usually choose only between a 15-15-15 analysis and nothing. Liming materials are virtually unavailable on the domestic market.

Notwithstanding these difficulties and a late start, the project has succeeded in producing a tenuous capability for conducting rather detailed soil surveys, as demonstrated by a map soon to be published for the Central Agricultural Experiment Station (CAES) property of several hundred acres; trainees are now able to produce useful "exploratory" maps of individual properties where no aerial photos are available as a base; and the Soils Section is at least tenuously established with a chief who returned with a U.S. master's degree in April 1975, a chemist, and several junior staff. (Four trainees are seconded to the Mano River Union Project). Two senior staff members are in the United States for master's degree training and are expected to return about the time the project ends.

Arrival of the two technical advisors lagged behind the original schedule (first quarter of FY 1973) and only about 40 man-months of regular-term consultant time has been provided to date -- mostly by the remaining soil scientist, who has completed some 32 months on the project. Parallel delays were encountered by the MOA in recruiting staff -- partly because salaries and working conditions were considered unattractive in comparison with those in other units of the MOA (primarily those situated in Monrovia) and partly because the current graduating classes of the University of Liberia's Agricultural College are small (a dozen or so agricultural graduates in total). Vehicles and other commodities also became available only after unusual delays and with difficulties which have been noted elsewhere (see PAR's numbered 74-4 and 75-2).

### III. CURRENT RESPONSIBILITIES, CAPABILITY, AND PERFORMANCE

#### Responsibilities of the Planning Division

Actual current responsibilities of the Economic Planning and Evaluation Division are broader than might be expected from its title, in view of its large responsibilities for producing agricultural statistical data. The main areas of responsibility may be grouped as follows:

1. General Analysis, Programming, Coordination. Responsibilities include preparing plans and programs of the entire ministry, defending the ministry budgets before MPEA and the Budget Bureau, and coordinating activities on an intra- and interministerial basis. Appraisal of feasibility studies, often in collaboration with IBRD and other international agencies, is included here.
2. Project Evaluation. Quarterly progress reports for developmental and recurring projects are prepared in this division, and some in other divisions of MOA. A section of the division is responsible for monitoring progress.
3. Coordination of Parastatal Bodies. The division supports the minister in achieving coordination of activities of parastatal bodies of which he acts as chairman, such as LPMC, Agrimeco, and the Upper Lofa Integrated Rural Development Project. Similar responsibilities extend to certain entities

in which the minister has a coordinating role without serving as chairman of the board, such as in rubber processing.

4. Microeconomic Analysis. The Planning Division fulfills a responsibility of the ministry in preparing individual farm-development plans for farm operators, cooperative groups, and others. Such plans are a mandatory prerequisite to obtaining a loan for farm development from the Liberian Bank for Development and Investment.
5. Research and Statistics. To provide data basic to performing the planning functions, the division is responsible for producing primary statistical data, accumulating secondary data, and using such data in various kinds of background research.
6. Special Assignments. The division provides secretariat services for various groups such as the Rice Committee and the Coordinating Committee for Liberia/Rumanian Economic Coordination. Similar assistance is provided to the Secretariat of Concessions. This is a unit in the Ministry of Finance, but the Minister of Agriculture is a member and requires support for such matters as evaluating applications.

#### Capability and Performance of the Planning Division

From comments in the previous chapter it should be obvious that substantial progress has been made toward developing a capability in the Planning Division for execution

of assignments. The present level of capability and performance will be reviewed according to the major areas of responsibility.

### Statistical Data Collection and Analysis

The National Rice Survey for 1975, completed and published in March 1976, is a timely and outstanding contribution to meeting specific priority needs for planning analyses. That a capability for accomplishing this under existing limitations has been developed in the Planning Division in only 4 years is remarkable. Until the 1974 Rice Survey, there was virtually no program for producing any comprehensive body of continuous, annual crop and livestock statistics. The 1971 Census (an MPEA undertaking) provided a useful sampling frame and other background for designing the 1974 and 1975 surveys.

The 1975 survey employed a three-stage design using a random sample of 90 enumeration areas and 8,892 households for the first stage, about 900 rice-growing households in the second stage, and one 72-foot-square rice plot per rice-growing household selected at random for objective determination of rice yields by crop cutting in the third stage. This procedure appears well designed to obtain important data within reasonable limits of statistical sampling error (intended to be under 10 percent at the national level for number of households and rice area; actually 4.6 percent for number of households and 6.7 percent for rice area). Less can be said about the extent of nonsampling error, as this is by nature not fully quantifiable. This much can be said: Those conducting the survey were subjected to thorough

training and supervision; enumerators were largely individuals with some rural background and thence possessing an ability to communicate in the language of agriculture (in English or otherwise); and heroic efforts seem to have been made to overcome the logistics problems of reaching respondents distributed through all nine counties, in areas where roads and other means of communication are limited or nonexistent.

The survey was designed for statistical efficiency in producing information about rice and rice producers, but it was in fact broad enough to approach the level of a national crop survey. This was so because nearly all agricultural households are rice producers, and information was obtained from respondents about plantings of crops other than rice, as well as about agricultural population, labor supply and use, and production practices. The present capability to conduct the rice survey effectively is virtually equivalent to the capability needed for conducting a continuous crop-reporting program -- an effective capability which is judged to exceed levels prevailing in a number of developing countries with many more years of experience in this kind of activity.

Given the limited extent of livestock and poultry production in Liberia, it would seem uneconomical to press for the same level of annual collection of statistical data for livestock enterprises as for rice. Nevertheless, the current capability for producing crop statistics represents a corresponding potential capability for producing livestock statistics, to the extent that the cost seems warranted.

Whereas the Rice Survey demonstrates a high level of capability for producing primary data on agricultural households and their crop production, the recently published

Statistical Handbook reflects a current capability for accumulating and winnowing data from secondary sources. These data cover such topics as population, meteorologic data, national accounts, exports, imports, domestic and international prices, education, public health, and registered cooperative societies.

Notwithstanding the promising evidence of unusual capability and performance now existing in the Statistics Section of the Planning Division, it must be recognized that present performance owes much to the firm support and guidance given by expatriate advisors. A few well-trained Liberians are gradually becoming ready to make the capability self-sustaining, but loss of one or two key individuals could still force the unit almost back to square zero. Present capability is remarkably high, but there is not yet adequate assurance that it will be self-sustaining.

#### Project Evaluation

Project evaluation in the Planning Division remains more a goal than an accomplished fact. Considerable progress has been made in developing the collection of progress information through quarterly reports (for development projects and others), using a standard outline, including the following items:

- . Title
- . Brief description
- . Human resource use and development
- . Foreign assistance
- . Goals during reporting period
- . Accomplishments during reporting period

- . Major problems encountered
- . Expenditures during reporting period

The resulting information, as contained in sample reports that have been reviewed, appears to be significant for evaluation purposes, and production of the reports would seem to be a useful exercise for the units involved. Manpower limitations are considered a major constraint in use of the reports for monitoring projects and programs by the Planning Division, and to date only one has been reviewed for the formulation of recommendations. With the return of additional participant trainees, appointment of a head for this section is anticipated, so that monitoring can become operational by the end of the Program Development Project. To date, there is little evidence that the reporting system for evaluation has led to reviews and action for improved performance. Before the end of 1976, semiannual progress reports for development projects are to be submitted on a form newly designed by MPEA.

#### Agricultural Planning

The broad responsibilities and the limited training of the Planning Division's staff outside the Statistics Section (see table 1) place sharp limits on the division's capability and performance in developing and appraising individual projects, fitting these together in annual and long-term programs responsive to the needs of sector, and developing the kind of sector analysis needed as a framework for the foregoing activities. Nevertheless, the number of projects and project proposals receiving attention from the division is impressive; it has fulfilled its responsibilities in contributing to preparation of the agricultural sector

portion of the 1976-80 National Socioeconomic Development Plan; it appears ready to make inputs to annual revision of that plan; and the capability for meeting professional standards of workmanlike analysis is demonstrated by its recent contribution to the Ministry's October 1976 Revised Short Term Rice Self-Sufficiency Plan (see chapter IV). As participants return, the division will be able to do a better job of fulfilling its broad responsibilities.

#### Effectiveness of Soil Classification Activities

Although soil-survey accomplishments seem to be falling short of targets as we understand them, resource inputs and current activities can be judged effective in producing certain targeted outputs. A satisfactory classification framework for Liberian soils has been developed from survey work in pilot areas and others; also, training of a limited number of individuals has proceeded in pilot areas where an aerial photo base is available and on other holdings or tracts where "exploratory" mapping, without an aerial photo base, has been necessary. The latter kind of activity, together with the limited number of soil samples analyzed, is obviously more nearly responsive to the goals identified in the Soil Survey Division's quarterly report for the first quarter of FY 1976 than to the target emphasis of the various PROP revisions. Goals of the Division are stated in the quarterly report as follows:<sup>1/</sup>

To locate suitable bottomlands and uplands for the cultivation of edible crops;

<sup>1/</sup> Liberian Ministry of Agriculture, Economic Planning and Evaluation Division, "Progress Report of Development and Recurring Projects Covering January 2 -- March 31, 1976" (mimeographed).

- . To carry out exploratory soil surveys on private farms, to recommend crops suitable to these lands and to make fertilizer recommendations for same;
- . To conduct laboratory analyses on all soil and plant samples collected from experimental plots on the CAES, from MOA rice projects, and from private local farms;
- . To conduct fertilizer research in an attempt to determine its most efficient use; and
- . To train Liberian soil surveyors.

The Program Development Project contemplated training of soil surveyors mainly through on-the-job experience, including soil survey, classification, and mapping on pilot scales in agricultural areas near Suakoko (PROP 3/72). This was expected to complement UNDP/FAO assistance explicitly limited to carrying out soil surveys in specific areas for short-run development purposes and scheduled to terminate at the end of 1973. The Ministry's desire for "exploratory" surveys in various development areas did not end with termination of the UNDP/FAO assistance, with the result that trainees under the Program Development Project have often been reassigned to use their emerging soil-survey capabilities elsewhere than in the chosen pilot areas. From the viewpoint of the combined goals of the Soils Division, this would seem to represent effective use of existing capability, but it leaves much to be desired in terms of the more specialized targets of the Program Development Project.

#### IV. RESPONSE TO PLANNING REQUIREMENTS

Prof. R. Schickele once pointed out that a central government needs to perform two essentially different roles in planning. One of these is allocative planning, with respect to the use of resources subject to direct government control; the other is planning of the institutional framework and the incentives required to facilitate and encourage maximum performance by the private sector. It appears that for many years the GOL has emphasized the first role and slighted the second. It is therefore encouraging to detect some redressing of this imbalance in the current efforts of the Planning Division.

With respect to both roles, the planning process includes steps leading up to an executive decision, usually followed by some sort of evaluation of the results and new series of steps leading to new decisions. Steps in planning which commonly precede rational decision making include:

- . Recognizing a problem,
- . Observing the problem situation and gathering information,
- . Identifying action alternatives,
- . Appraising the identified alternatives.

If these steps are performed effectively, a sound basis for wise decisions will have been created. But economic analysis alone will not provide a complete basis for decisions of public policy, inasmuch as the policymakers will properly have reason to consider many noneconomic factors. In the

present context, for example, the GOL might well choose to pursue a policy of self-sufficiency in rice production for reasons of risk avoidance and various noneconomic considerations in preference to a different production policy which economists might find more nearly in accord with the economics of comparative advantage. But policymakers should at least have the benefit of economic analyses of the major alternatives before making their decisions.

At present, the Planning Division is just reaching the stage of having a capability for such analyses. For a decade or more, for example, the GOL has sought to achieve self-sufficiency in rice production -- perhaps on the basis of sound judgments by the country's leaders, but without much support from adequate economic analyses of the alternatives. To date, the Planning Division has not been able to develop an adequately broad analysis of alternative internal sources of additional rice production -- what can be said about the economics of large-scale irrigated ventures vs. small-scale plots of irrigated swamp rice vs. shifting cultivation of upland rice modified by the introduction of improved seed (say, LAC 23) and fertilizer vs. continued traditional cultivation of upland rice. But it is most encouraging that in October 1976 the Ministry was able to publish the workmanlike (if optimistic) feasibility study for a project that would make fertilizer and LAC 23 seed available for use on traditional plots of upland rice.<sup>1/</sup> In the report, prospective economic benefits under traditional and improved practice are compared at both farm and national levels. This is an excellent example of the kind of study now possible with the capability of the Planning

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<sup>1/</sup> Ministry of Agriculture, "Revised Short Term Rice Self-Sufficiency Plan," October 1976.

Division which addresses a significant problem in national planning in a manner which could scarcely have been possible before initiation of the Agricultural Program Development Project.

Nevertheless, for the division to generate efficiencies in the allocation of government resources and add to the effectiveness of MOA agricultural development activities, it will need to accumulate a broader data base and a maturity of judgment as well as a continually advancing analytical capability. In the rice-sufficiency proposal, for example, the benefits of using fertilizer and improved seed had to be estimated from fairly limited agronomic evidence derived from experiments and scattered demonstration plots; world-wide experience suggests that these are fallible indicators of gains likely to be realized in practice by across-the-board performance of large groups of cultivators.

Also, the analysis would have been more firmly based if it could have included examination of possibilities and constraints for adopting the proposed changes, through a dialogue with representative cultivators from a variety of modal production situations (modal as to size of family, combination of crop enterprises and off-farm employment, entrepreneurial aggressiveness, and so forth).

Finally, such matters as elasticity of demand for rice in the domestic market and the changes in marketing facilities and the domestic price structure which might need to accompany any expansion of output sufficient to place Liberia on a net exporting basis, rather than a net importing basis, were virtually ignored in the analysis.

Both the project design and the activities of the Planning Division have helped to call attention to price as a signal to which Liberian agricultural producers are probably as responsive as farmers elsewhere. Project inputs seem to have contributed to an awareness that a need existed for making LPMC buying prices Monrovia more nearly effective at the farm-gate level. Implementing mechanisms are still far from being as effective as LPMC itself would like to see them, but efforts for improvement are being made. Here, also, the project seems to have instigated efforts which can be expected to contribute increasingly to the effectiveness of MOA agricultural development programs.

In the past, too much has been taken for granted about Liberia's planning requirements for agricultural development. It is now time for a broad new look at the sector and its development options -- its technical and economic possibilities and problems and the alternative approaches which are available for achieving potentials that reflect desires of the Liberian people.

The past outlook on planning requirements has almost universally been based on the assumption that adoption of modern technology is the key to both increased production from Liberian agriculture and increased welfare for the country's traditional farmers. But this is only a technical approach not an economic one. Technology can be modern without being economic at all times and places; increases in the relative prices of fertilizers, for example, can have substantial effects on the economy of using fertilizer, and this in turn can affect the economy of various associated production practices. Likewise, increased output of products for which an inelastic demand exists (a situation

commonly prevailing in agriculture, although not necessarily for Liberian export demand) can be detrimental to producer welfare, although beneficial to consumers.

All too commonly it has been taken for granted that the Ministry of Agriculture's potential contribution to increased production and farm family welfare hinges mainly on the Ministry's ability to deal with allocative planning -- the design, preparation, and appraisal of projects employing large blocks of resources subject to public control, rather than on ability for planning an institutional framework and the incentives for facilitating and encouraging maximum performance by the private sector.

The focus on allocative planning has apparently been accepted by the GOL, which has invested heavily in mechanized land clearing for large-scale projects where individual producers are to be organized in cooperative systems, as well as by USAID/L, which has tried to direct attention toward projects comprising a system of delivering technology, credit, and modern inputs to the traditional farmer. To date, traditional farmers have tended to remain untouched by either approach, perhaps resentful of pressure for directed change in their way of living, and have continued to devote their attention to the time-consuming social obligations of the traditional society or have broken from it to seek wage work in the concession enclaves or in Monrovia. Designs for new projects in integrated rural development reflect increasing awareness of the need for a dialogue with traditional farm families on how best to solve their problems.

Before more individual development projects are designed and appraised according to the conventional wisdom, and

before further decisions on major policies are taken, a broad new look at alternative approaches to agricultural development in Liberia is needed. Many of the important issues are raised in the text and Sector Assessment Papers of the 1975 Development Assistance Program. Answers must come from analyses built on a combination of technical, sociological, and economic foundations. The Planning Division has acquired an important capability for making a major contribution in this area. This capability now needs to be put to this specific use.

## V. ORGANIZATIONAL AND PROCEDURAL ASPECTS

The organization and procedures of the MOA have obviously provided a framework within which enough flexibility existed to permit sizable project accomplishments. The Planning Division is the primary responsibility of the Assistant Minister for Planning, who has direct contact with the Minister and the Deputy Minister. Vertical communication is simple and direct, and there seems to be no evidence that horizontal communication has been an unusual problem.

The GOL system of financial control includes an annual budget process, supplemented by quarterly budget submissions for approval. The president has broad power to make transfers within adopted budgets, and adjustments down to divisional levels are not unknown. This creates a degree of uncertainty for program administrators, but it is not a unique problem within the MOA.

Improved management capability throughout the various units of the MOA would undoubtedly strengthen the Planning Division's effectiveness in monitoring project implementation. The Institute of Public Administration Program is available to provide assistance in management planning to middle-level administrators (assistant ministers, division directors, and others at approximately these levels), through short courses and consulting assistance. Use of this assistance by the MOA can undoubtedly be helpful in improving the effectiveness of the Planning Division over time, particularly with respect to project monitoring and evaluation.

Although a draft report on possible reorganization of the MOA has been submitted by the Public Administration Service,<sup>1/</sup> additional work on the proposal is pending. The draft report notes the commitment of the GOL to decentralization for both planning and implementation of projects, but suggests that the Minister of Agriculture needs to retain primary responsibility for overseeing and coordinating the planning process for rural development and also the preparation and execution of operational programs and projects in the sector. The advantages of decentralization which have already begun to appear in administration of the Upper Lofa Rural Development Project through a quasi-autonomous project management unit might lead to the formation of a rural development authority. Such an authority, along with LPMC, Agrimeco, and other autonomous units, would permit a streamlining of the MOA itself, which would place increased emphasis on planning and coordination of policies, programs, and projects. Such a reorganization trend, if it occurs, is unlikely to diminish the ability of the Planning Division to reach its goals. On the contrary, the importance of attaining those goals would be increased.

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<sup>1/</sup> Public Administration Service, "Organization for Agriculture-based Rural Development: Ministry of Agriculture, Republic of Liberia." 1975.

## VI. LESSONS, IMPLICATIONS, AND RECOMMENDATIONS

Experience to date provides convincing evidence that effective planning activities can be developed in MOA.

The evidence reveals

- . That the GOL has shown a willingness to direct human and financial resources to planning, including the gathering of agricultural statistics, in the MOA;
- . That the need for allocative planning is recognized, notwithstanding a tendency to emphasize technical design of projects for increasing output of specific products and to slight planning for the institutional framework and production incentives;
- . That personnel of good potential for work in agricultural economics and statistics can be recruited;
- . That the GOL has been willing to facilitate and join in supporting participant training abroad;
- . That suitable placement has been immediately available for personnel returning from training abroad;
- . That the highway network now permits driving project vehicles to all nine counties for conducting such field activities as the rice survey;

- . That the Planning Division has been able to collect national crop statistics in conformity with good statistical practice and on a timely basis;
- . That a considerable capability for economic planning is emerging in the Planning Division;
- . That accomplishments reflect favorable cooperative relationships between agencies and staff of the GOL on the one hand and international agencies and their personnel, including USAID and its staff, on the other;
- . That project designs should include some flexibility to permit adjustments to unpredictable delays in the mobilization and integrated utilization of advisors, participants, and commodities;
- . That the serviceability of commodities under local conditions cannot always be judged from catalog data (field compasses and steel tapes, for example, have needed replacement with others less subject to adverse local conditions of humidity and transport).

Although the GOL and the MOA obviously have a production-oriented approach to agricultural development, moreover, the importance of marketing institutions and of relative prices in providing signals to producers in the private sector is gradually gaining recognition.

Project accomplishments have not been unaffected by delays in staffing, completion of participant training, delivery of commodities, and instability of working relationships, but results have probably suffered less from such delays than is normal for institution-building projects.

In physical construction, ways can sometimes be found for making up time lost to delays -- extra laborers, for example, can be hired to speed up elements of the project requiring inputs of manual labor. In building institutions, however, two workers cannot always proceed faster than one. The wisest course of action may be to set an optimistic schedule of accomplishment, while accepting the fact that the schedule may have to be adjusted. In the case of the Agricultural Program Development Project, most targets will have been attained by the end of the project, but the resulting institutional capability may be more tenuous or fragile than is desired. This is particularly true because so many of the trained participants will be newly returned to the MOA.

This implies that follow-on assistance to the MOA's Planning Division will be important to assure that recent progress is not sacrificed and that a planning capability developed at considerable cost is guided into the most useful applications. We turn now to the pattern which such follow-on assistance might take.

#### An Orientation for Follow-on Assistance

We conclude that Liberia is reaching a stage where a broad new look at alternative approaches to agricultural development will be needed. Such an analysis would, for

example, examine rural manpower availabilities, by regions and in the aggregate, and would explore the readiness of agricultural producers in various modal situations to participate in alternative forms of production, under alternative institutional arrangements. It would explore the economics of producing a wide range of crops and would contribute to judgments about Liberia's comparative advantage in various kinds of productive agricultural activity. Substantial accumulation of new primary and secondary data for such a study would represent an appropriate use for the Statistics Section's growing capability in data collection. The socio-economic interpretation of the potential of traditional rural households for entrepreneurship in commercial production would be an exercise in on-the-job training to strengthen the microeconomic section. Macroeconomic analysts would need to produce an integrated analysis of production potentials, domestic and export demand, prices, credit needs, manpower use, and institutional requirements. Such an analysis could provide a framework for more informed decision-making concerning the initiation, continuation, or expansion of the kind of large-scale development projects already underway or in the design stage.

The conditions for USAID collaboration in making a broad new sector analysis possible are excellent. With limited assistance, the Planning Division could be expected to produce such a sector analysis and strengthen its newly gained data-gathering and analytical capabilities in the process. Channels for bringing the findings of a sector analysis to the attention of top-level decisionmakers are open, although noneconomic as well as economic considerations will undoubtedly continue to influence their final decisions, as already noted.

The Production Economics and Statistics Project, identified in the PID of June 1976, provides an appropriate pattern of staffing for follow-up assistance to the Planning Division. We propose a somewhat more specific focus of activity, however, with emphasis on completion and utilization of a fairly intensive agricultural sector analysis during the 3-year project life. This will provide specific direction to the use of advisors' capabilities; it will help to consolidate gains already made in the capabilities of the Planning Division and it will strengthen the foundations for informed decisionmaking concerning programs, projects, and policies for development of the agricultural sector.

#### Recommendations

Specific recommendations are as follows:

1. That efforts be continued to prepare a project along the lines of the June 1976 Project Identification Document (PID), perhaps under the substitute title of "Agricultural Sector Analysis and Planning Project.
2. That staffing for the project include:

A senior survey statistical advisor with expertise in survey design and programming relevant to conditions such as prevail in Liberia (a large component of shifting agriculture, considerable interplanting of crops, strong emphasis on tree crops, a diverse agricultural vocabulary owing to the use of English plus various tribal languages, difficult access to many villages);

- . A farm-management advisor with socioeconomic expertise relevant to exploring under Liberian conditions a range of economic alternatives for agricultural production by individuals and/or groups whose norms are derived from a traditional village culture;
  - . A senior agricultural economist with expertise relevant to elaborating a broad sector analysis for Liberia, such as described hereafter. This advisor should be chosen with the expectation that he could remain throughout the entire life of the project, to insure maximum utilization of early inputs.
3. The purpose of the project would be to assist the MOA in producing a broad sector analysis as a "learning-by-doing" exercise that would (a) consolidate and enhance the economic planning capability of the MOA's Planning Division and (b) provide a sectoral framework as background for more effective preparation and appraisal of individual development projects. Achievement of this purpose would contribute to the sector goal of increasing agricultural productivity and economic benefits for the small farmer, to the extent that an improved basis for planning would in fact result in more effective decisionmaking on programs, projects, and policies for achieving the goal.
  4. Information to be used in developing the sector analysis should include such items as the following:

- . Statements of existing long-range national goals, targets, policies, and priorities for the agricultural sector, plus a description of the institutional framework;
- . Plans for inputs and outputs of new and existing cooperative and corporate ventures in agricultural production and processing, plus evidence on progress toward accomplishment of these plans as revealed by the monitoring activities of the Project Evaluation Section;
- . Data on import and distribution costs for production materials and agricultural commodities likely to be imported;
- . Such estimates as can be developed of domestic demand elasticities and projected demands for locally grown foods;
- . Annual estimates of area or tree counts, yields, and production of principal crops, such as now being produced by the National Rice Survey;
- . Information on annual and seasonal utilization and marketings of agricultural output;
- . Information on prices paid and received for domestic agricultural products at Monrovia and at successive distances from Monrovia and from rural assembly points (such data could take the form of price-contour maps);
- . Information on past and prospective returns in Monrovia and at assembly points and the farm-

gate level from products sold on international markets;

Soil-survey results and technical agronomic research findings on production responses to modern inputs;

Indicators of production adjustments to be expected of local producers, as revealed by socioeconomic studies of farm-management alternatives and constraints recognized by producers in choosing among such alternatives;

Data on manpower and equipment needs and availabilities for individual crops and for alternative patterns of aggregate output.

5. To support the sector analysis, it is proposed that personnel of the Micro-Analysis Section of the Planning Division, with assistance from the farm management advisor and from the Statistics Section, (a) develop a characterization of agricultural households according to modal situations with respect to size of family, potential labor force, combinations of crop enterprises and off-farm employment, entrepreneurial aggressiveness, and related factors and (b) explore agricultural production alternatives, potentials, and constraints for a subsample of these modal households perhaps 25 to 50), through a dialogue with the household decision-makers.
6. The Research and Statistics Section would provide a sampling frame and assistance in supplementary interviewing necessary to develop the characterization of

modal families and would also gather local price data for the price-contour mapping or equivalent statistical summarization.

7. Remaining sections of the Planning Division would all be expected to contribute basic information for synthesis of the sector analysis. The synthesis itself would be designed and elaborated under leadership from the Division Director and the Section for General Analysis, Programming, and Coordination, with assistance from the Senior Agricultural Economic Advisor, short-term consultants, and various members of the Division staff. Aspects with economywide implications, such as manpower utilization, should be examined in close cooperation with staff of the Ministry of Planning and Economic Affairs.
8. A target completion date for the sector analysis should be about the end of the second year of the project so that the team that prepared the analysis could assist in making it of maximum use for project preparation and for at least a year thereafter.
9. The project should be viewed in part as a means of helping newly trained and other members of the Division to approach their various planning tasks in the context of the broad potentials, problems, and aspirations of the agricultural sector. It should be seen as a comprehensive effort to develop, with efficiency and effectiveness, the framework into which all development projects must somehow or other fit. In this sense, time spent on developing the sector analysis will in some measure be time saved in working out individual

projects. More important, however, is the contribution the project can make to sounder project preparation and an enhanced capability for planning in the MOA.

10. In-service training related to preparing the sector analysis and other planning activities should include short courses or seminars presented by regular-term and short-term advisors. Such courses or seminars would commonly be presented in units of about six periods of 2 hours each, spread over a period of 2 weeks.
11. As a means of further broadening and strengthening the planning capability of MOA by the time the project is completed, several additional participants should be chosen to receive training abroad during the life of the project.
12. If the GOL evidences an intensifying concern for examining alternative approaches to resolving land-tenure problems which may arise as traditional households are assisted in shifting to sedentary agriculture, USAID/Liberia should stand ready to incorporate into the project a component of short-term or longer-term assistance of specialists in land tenure.

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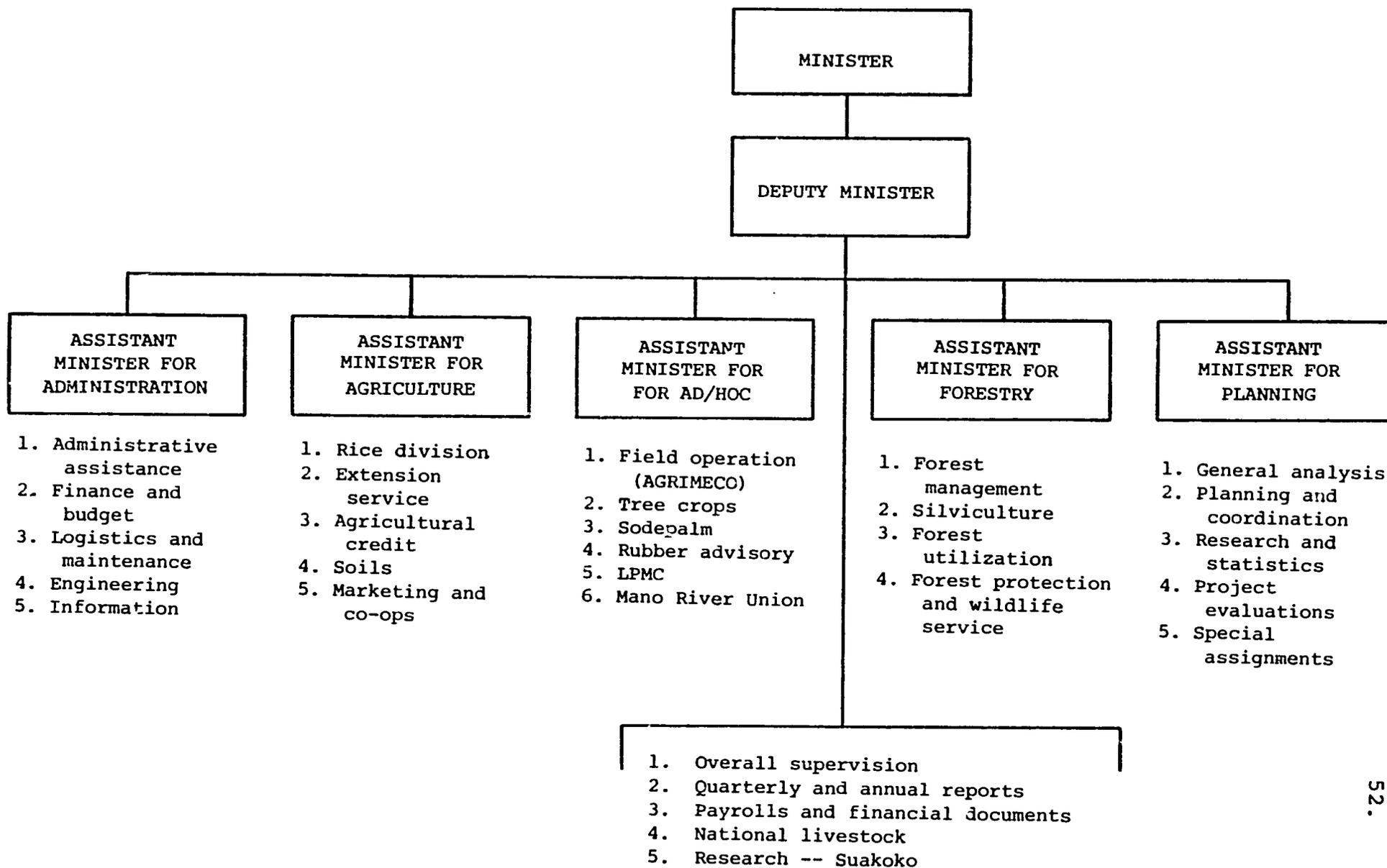
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## APPENDIX A

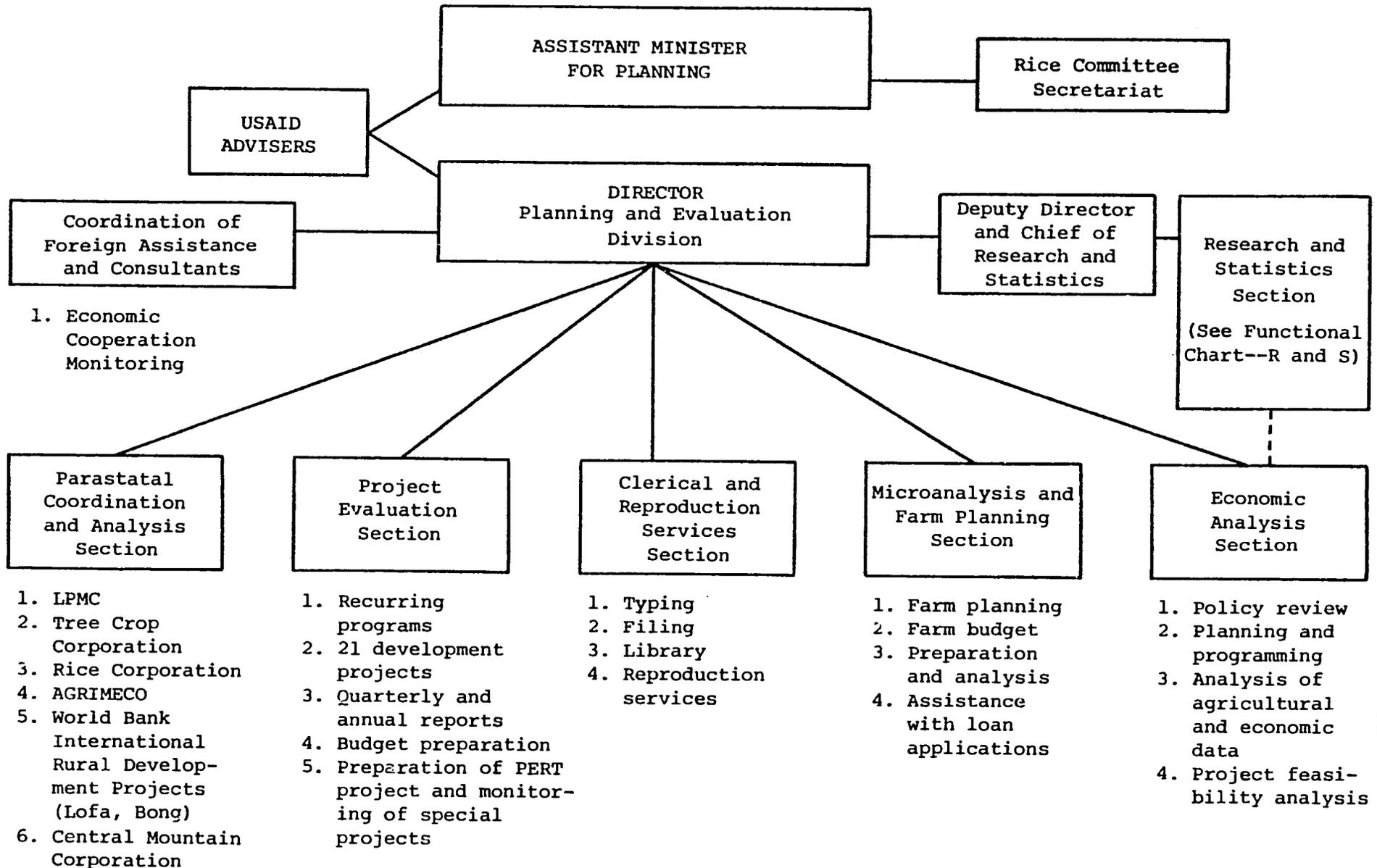
### Organization Charts

- A-1. Ministry of Agriculture
- A-2. Planning and Evaluation Division
- A-3. Statistics Section

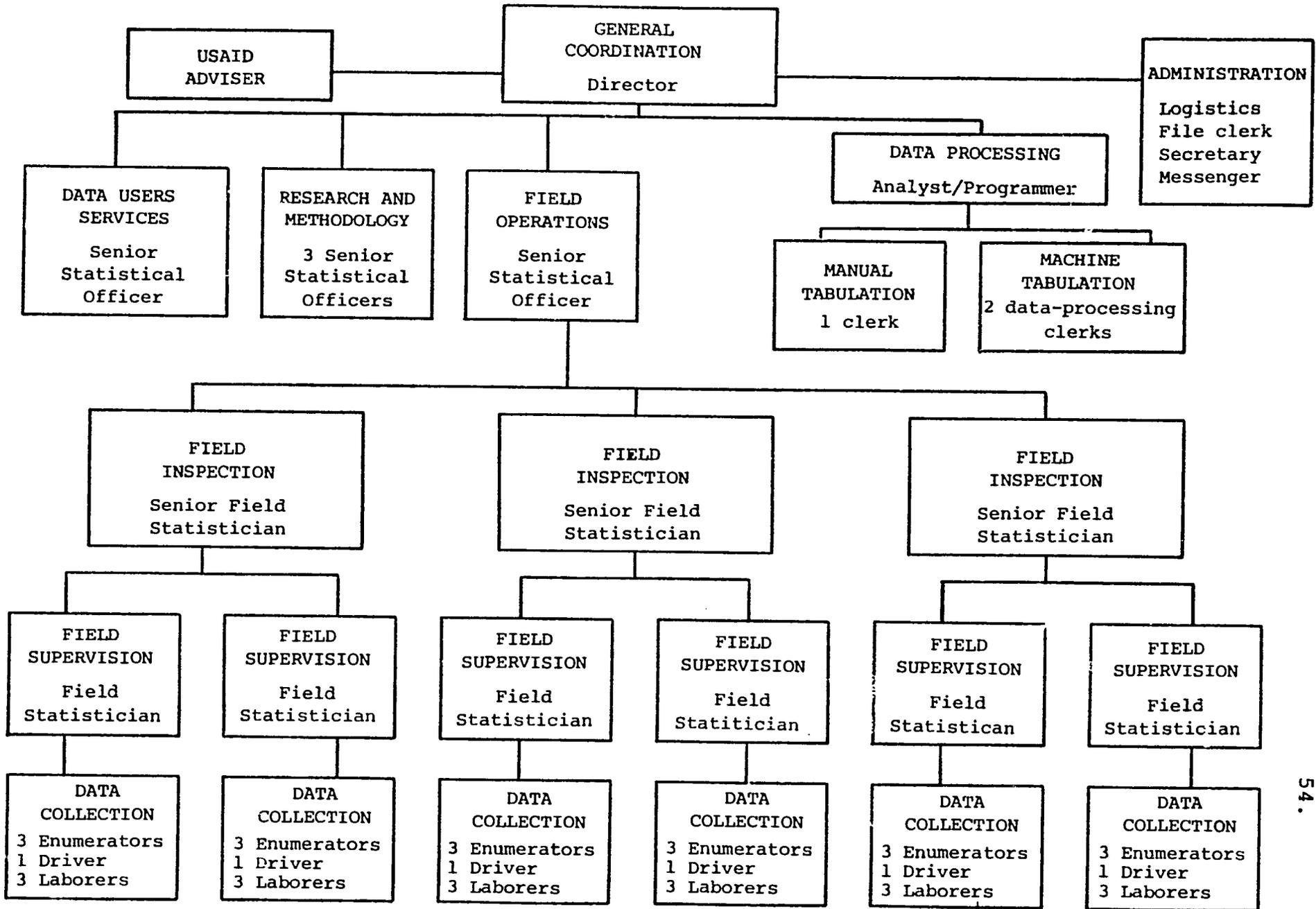
A-1. MINISTRY OF AGRICULTURE



A-2. PLANNING AND EVALUATION DIVISION  
MINISTRY OF AGRICULTURE



A-3. STATISTICS SECTION  
 ECONOMIC PLANNING AND EVALUATION DIVISION  
 MINISTRY OF AGRICULTURE 1976



APPENDIX B

Planning Division Staff Members Sent Abroad for  
Participant Training under the Agricultural  
Program Development Project<sup>1/</sup>

Name	Status	Type of Training	Field
Cooper, Joshua	Returned	Academic (M.S.)	Agricultural Economics
McClain, Charles	"	" "	" "
Gardiner, Eugene	"	" "	" "
Mehn, James	"	Practical <sup>2/</sup>	Statistics
Flumo, Ben	"	"	"
Kromah, Foday	"	"	Project Analysis
Cooper, Randolph	Abroad	Academic (M.S.)	Agricultural Economics
Brandy, Othello	"	" " "	" "
Davis, Deroe	"	" "	" "
Ekadi, Green	"	" "	" "
Musah, Joseph	"	" "	Agricultural Administration
Siaway, Arthur	"	" "	Statistics
Cooper, Seward	"	" (M.S., J.D.)	Agricultural Economics Law
Ballaya, D., Jr.	"	Practical <sup>2/</sup>	Statistics
Ketter, Nathaniel	"	"	"
Peters, David	"	"	"

<sup>1/</sup> Includes only present staff members of the Planning Division and only the training received as participants under this project. The project has also provided participant training to staff of the Soils Division, the Cooperative Division, the Assistant Minister for Planning, and the Ministry of Planning and Economic Affairs.

<sup>2/</sup> Practical training offered by the U.S. Bureau of the Census.