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FINANCIAL AND HUMAN RESOURCES LIMITATIONS IN HAITI'S AGRICULTURAL SECTOR DURING THE PERIOD 1977-1981

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SUMMARY

In the next five years, it is expected that the agricultural sector of Haiti will receive substantial external financial aid primarily through various integrated development projects. Shortages of trained personnel will occur. But more importantly, there is an absence of proper management structure which may seriously reduce the sector's capacity to absorb external aid. Furthermore, Haiti does not have the financial resources to provide the support needed to implement projects in the agricultural sector. This situation is unlikely to improve in the next five years.

INTRODUCTION

The objective of this report is to determine the extent to which Haiti's agricultural agencies can absorb additional, external, financial and technical assistance during the second five-year plan: fiscal year 1977 to fiscal year 1981. The report examines the availability of the local financial and human resources necessary to implement the development projects that are underway or in the pipeline for the next five years. The report does not attempt to be exhaustive in the sense of taking into consideration the effects of every project that might conceivably start within the next five-year period. Nor will it present carefully detailed manpower projections of questionable validity for each institution in the sector. The emphasis, rather, is on understanding real limitations for further aid so that immediate action can be taken to overcome current, well-known limitations in the agricultural sector.

In the first part of the paper, an attempt is made to clarify certain basic concepts about human and financial resources for development. In the second part of the paper, the current and future activities of each major foreign institution in the agricultural field are summarized, quantifying as far as possible the implied financial and human resources required from the Haitian side. Next the future supply and demand for some skills are estimated and a potential bottleneck is identified. The future availability of financial resources in the agricultural sector is examined in the fourth section of the paper.

METHODOLOGY

HUMAN RESOURCES

For the purpose of this report, "human resources" is defined as trained and properly organized and managed people. Since the report is about the agricultural sector, human resources refers to people trained to perform tasks such as agricultural extension services, credit supervision, and community development activities.

The absorptive capacity of the ultimate recipient of agricultural aid in Haiti, the peasant, will not be studied. Instead the capacity of the Haitian public sector to provide the peasant with the technical assistance needed is the object of this report.

Two aspects of the definition of "human resources" need highlighting. First, human resources are trained people. Second, human resources are properly organized and managed people. The first aspect is quantifiable, requiring the counting of individuals with the proper skills, both at the project and national level. The second aspect is not so readily quantifiable. For example, the capacity of an institution to provide adequate managerial support to a project cannot be readily measured. In addition, the amount of management that a project requires is usually unclear. Even the presence or absence of a university trained group of managers in an institution is no clear indication of the presence or absence of good management. Obviously, one's appreciation of the administrative and managerial capacity of a sector is very subjective. Yet this aspect of human resources will be critical in Haiti during the next five years and, therefore, cannot be ignored or set aside for a later date when better information might become available.

Ideally, the local manpower needed to implement the development projects which will be financed in the next five years should be estimated by summing up the manpower requirements of each project. Unfortunately, the local manpower requirements of most projected projects are not readily available, and when available, are not very reliable. In Haiti, reliable information on the local manpower needed to implement projects is available only during or after project implementation. This is due both to project designers' limited knowledge of Haitian agriculture, and to the haste with which most recent projects have been designed.

In view of these limitations, one is forced to derive manpower projections in an indirect fashion. The method used in this respect is to identify the most important types of projects in terms of their relative impact on the peasants, obtain the manpower requirements of a few projects as registered so far, and derive certain parameters that could be applied in the future for similar types of projects.

FINANCIAL RESOURCES

Two types of financial contributions are expected from the Haitian government: counterpart financing during the implementation stage of the project and annual financial outlays to maintain the new level of services after the foreign institution terminates its involvement with the project.

As a rule the Haitian government is expected to contribute a certain portion of the expenditures of each development project. Usually this proportion represents between 10 and 20 percent of the total project cost. This contribution is in the form of wages and salaries for the local counterpart personnel and expenditures for supplies and other operational expenses.

In many cases, these expenditures do not constitute an overly heavy burden on the agency because the counterpart personnel can be withdrawn from other activities. This does not usually represent an incremental cost since often the individual is relatively underemployed.

A further and potentially more troublesome cost may arise when the project is terminated and the agency is asked to continue providing the same level of services and to absorb the maintenance and replacement costs of the project. This cost category is more difficult to estimate because on the one hand it does not involve the expenditure of foreign moneys, and therefore is not usually estimated with great care. On the other hand it is not always clear when the foreign donor will terminate its support.

CURRENT AND FUTURE ACTIVITIES OF MAJOR DONORS IN AGRICULTURE

INTRODUCTION

The past three years were a period of project design and experimentation in the agricultural sector. The next five years will be a period of implementation. The agricultural sector of Haiti is expected to receive substantial financial resources from the Agency for International Development, the Inter-American Development Bank, the Canadian International Development Agency, and the World Bank. Other donors such as France, the United Nations, the Inter-American Institute of Agricultural Sciences, the Federal Republic of Germany, the Organization of American States, the Republic of China and Israel will also make contributions. However, the size and importance of the commitments of this latter group is substantially less than the previous group of donors.

The following sections of the report briefly describe the expected contributions to be made by each of these donors.

AGENCY FOR INTERNATIONAL DEVELOPMENT (AID)

AID's activities in the agricultural sector are substantial. Four projects are already underway and four more are expected to begin before 1982.

HACHO. Since 1966, the Haitian American Community Help Organization (HACHO) has been providing both financial and technical assistance to rural communities in the Northwest in the fields of health, potable water, irrigation, road improvement, community development and agriculture. The program ends in 1978 when it is likely to be reoriented and its activities concentrated in fewer fields, although on a perhaps larger scale.

Small Farmer Development. The Small Farmer Development project aims at raising coffee production of small farmers with a program of credit and fertilizers, and the construction of coffee centers. This project's termination date is now 1980.

Integrated Agricultural Development. The Integrated Agricultural Development project will be the most important vehicle for aid in the agricultural sector in the next five years. It covers four areas of the country: Les Cayes Plain, Jacmel, Thomazeau, and the Northwest, and will offer assistance in irrigation, soil conservation, extension and agricultural credit. In addition, the project contains an important component of institution building which consists of a four-man management team assigned to the Department of Agriculture. Finally, it is providing assistance for the creation of a fifth-year specialization program at the Faculty of Agronomy in the rural engineering field. The project was approved in 1977 and is expected to last five years.

Small Farmer Marketing. The Small Farmer Marketing project complements the activities undertaken in the Small Farmer Development project, by providing assistance in the marketing of coffee. The project was initiated in 1977 and is expected to last until 1982.

The following projects are in various stages of preparation and are expected to begin before 1982:

Agricultural Support II. The purpose of this project is to develop Haiti's agricultural research capacity in two areas: agricultural statistics and cereal crops production. The project is expected to start in 1978.

Environmental Preservation. The objective of this project is to develop the appropriate mountain agriculture to stop the progress of erosion over 30,000 hectares of land. The project should start in 1979 and cost approximately US$10 million.

Integrated Community Development. The project proposes to reorganize the Office National d'Alphabétisation et d'Action Communautaire (ONAAC) in order to increase the role of this agency in the agricultural development of the country. The project should initiate its activities by 1979 in four target areas.

Rural Credit Institution. This project is in an early stage of development. Its purpose is to establish the credit mechanisms needed to support the various integrated agricultural development projects being undertaken by the international organizations. The project should begin by 1980.

INTER-AMERICAN DEVELOPMENT BANK (IDB)

The activities of the Inter-American Development Bank (IDB) will be focused in four areas: the Artibonite Valley, the Plaine du Cul de Sac, the

regions directly connected to the southern road, and the Plateau Central. Between 1978 and 1981, the IDB plans to approve about US$105 million in loans and technical assistance in the agricultural sector. The various programs include penetration roads in the regions of the Cul de Sac, Artibonite, Southern Highway regions and Plateau Central. In addition, four integrated rural development projects will be started in the Artibonite, the Cul de Sac, the region around the Southern roads and on the Plateau Central. These programs will be complemented by a line of credit to the Institute of Agricultural and Industrial Development (IDAI). Other projects related to agriculture include the control of erosion in the Morne l'Hopital and the region of the Cul de Sac. A tentative program of loan approval for the integrated projects is shown below.

Project	Million US$					Approximate number of families benefited
	1977	1978	1979	1980	1981	
Artibonite I						2,000
Total	5.9					
IDB	5					
Local	0.9					
Cul de Sac I						1,800
Total		12.1				
IDB		11				
Local		1.1				
Artibonite II						6,000
Total				14		
IDB				12.6		
Local				1.4		
Southern Region I						2,000
Total				10.9		
IDB				9		
Local				1.9		
Cul de Sac II						6,000
Total					30	
IDB					27	
Local					3	
Plateau Central						2,000
Total					20	
IDB					18	
Local					2	
IDAI						
Total				8		
IDB				6.4		
Local				1.6		

CANADIAN INTERNATIONAL DEVELOPMENT AGENCY (CIDA)

In the next five years, CIDA will place the emphasis on three major projects: the rural integrated development project of Petit Goave (DRIP), institutional strengthening at the Faculté d'Agronomie and the Ecole Moyenne, and a project for developing storage facilities as part of its technical assistance program to the Department of Agriculture. A current program in agricultural planning with the Unité de Programmation will end in 1980. The DRIP is, by far, the most important CIDA project. It started in 1975 and presently employs around 325 people. It is expected that an additional US$16 million will be spent in this project within the next five years, of which about 40 percent will be in the agricultural sector. The project for developing storage facilities will cost approximately 2.4 million. The institutional strengthening program with the Faculté d'Agronomie and the Ecole Moyenne will be described in greater detail in another section of the paper.

WORLD BANK

The World Bank's activities in the agricultural sector are concentrated in the northern region and consist of a rural integrated development project and a new school for the training of agricultural technicians and animation agents. The rural integrated project is being implemented by a new semi-autonomous organization called the Organization de Développement du Nord. The project was approved in early 1976 and is expected to last until 1981 when it is expected that a second phase will be launched and will ultimately cover 15 percent of the northern Department. In its first phase, the project will cost around US$13.6 million of which US$5.2 will be local

counterpart. The following activities will be developed: feeder roads construction, extension and animal health services, seed improvement, and credit. The credit aspects will be coordinated with the Bureau de Crédit Agricole of the Haitian Department of Agriculture. The new Ecole Moyenne de Développement also to be funded by the World Bank, will be discussed in another section of the paper.

FRANCE

In the future, most of the activities of the French government are likely to take place in the area of Jacmel. At the moment only one agronomist is stationed full time in the area. However, starting in 1978, it is expected that this program may develop into a full fledge integrated development project. No information is available, however, on the size of the program and the possible demand for local manpower. Other activities of the French government will be based on several studies completed recently concerning the production of silk, cattle feeding, oleaginous plants, and the control of diseases of coconut trees. French technical experts are currently studying the progress of erosion on the island by making aerial photos of the island. The agricultural conditions of the Plateau Central are being carefully studied with a view to developing a livestock industry there in coordination with the World Bank or IDB. The French government is participating in the World Bank integrated development project by providing three agronomists for four years. Its involvement in the National Seed Center of the Department of Agriculture has been terminated, although it will continue to furnish some training and some scholarship help during the implementation of that project.

UNITED NATIONS FOOD AND AGRICULTURE ORGANIZATION (FAO)

The first and most important FAO project is the reorganization of the system of agricultural extension of the Department of Agriculture. The first stage of the project will last five years beginning in 1978 and will cost US$3 million, to be divided between salaries for expatriate personnel, necessary equipment, supplies, and salary complements for the counterpart Haitian personnel. This program's objectives are to strengthen the extension services of the Department of Agriculture and to coordinate its activities with the seed and marketing program. The project is important to the integrated projects of AID, CIDA, and France, in particular, since their projects will depend on the Department of Agriculture for support in extension. At this time, a detailed list of local manpower needed to implement this extension project has not been estimated.

A second technical assistance project is being formulated in the area of livestock. It is estimated that it will cost around US$700,000 and will start in 1979. Its purpose is to strengthen the Department of Agriculture's capacity for providing assistance to the farmers in livestock management.

The third FAO project is in the area of erosion control in the Limbe region. The first phase of this project was recently completed, and a second five-year phase is under discussion and should start in 1978.

Finally, as part of its food security action plan, FAO is in the process of developing a program for the marketing and storage of basic grains such as corn, sorghum and rice.

INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES (IICA)

The IICA acts as executing agency in many of the technical assistance projects financed by the IDB and CIDA such as the integrated project of the Artibonite Valley, the technical assistance in commercialization and seed improvement, and the Unité de Programmation's planning project. Finally, for many years, it has assisted the Department of Agriculture in developing the Haitian-funded Ilots de Développement program which provides intensive technical assistance to a few localized areas of the country.

THE FEDERAL REPUBLIC OF GERMANY

The Federal Republic of Germany is sponsoring the construction of thirty irrigation wells in the region of the Plaine des Gonaives. The project also includes aspects of agricultural planning, cadastral survey, and a program of wells' maintenance for the Cul de Sac and the Artibonite Valley. Presently, four experts are assigned to the project and it is expected that about US$4 million will be spent between 1977 and 1981. In addition, the Federal Republic of Germany participates in the HACHO project with food contributions and the technical assistance provided by four experts. This program is renewed every year at an annual cost of approximately US$400,000. Finally, a modest contribution in the form of three experts for three years is being provided to the integrated development project of the World Bank in the northern region.

THE ORGANIZATION OF AMERICAN STATES

The OAS has few projects in the agricultural sector. It is cofinancing with Israel a technical assistance program for the creation of agricultural cooperatives in the Bas Boen region. This project involves three experts

at a cost of US$70,000 a year, and will terminate in 1979. A research project for the recuperation of alcaline soils in the region of the Cul de Sac has been recently started with a modest budget of US$40,000 a year.

REPUBLIC OF CHINA

The Republic of China has maintained since 1972, a program of technical assistance for rice cultivation in the Artibonite Valley. Eighteen experts are currently engaged in the extension aspects of the program. A similar technical assistance project is being formulated for the cultivation of bamboo. Its scope will be defined early in 1978.

ISRAEL

Israel has three experts working in the agricultural sector. One is stationed in the Bas Boen area of the Cul de Sac; the second provides technical assistance to the Ilots the Développement program, and the third, an expert in sorghum cultivation, is attached to the Department of Agriculture. These three projects terminate in 1978 and, thereafter, Israel plans to concentrate its limited technical assistance of at most three-man years in the Cul de Sac region as part of the IDB project.

A summary of the principal investment projects by foreign donor agencies is presented below.

TABLE I

PRINCIPAL INVESTMENT PROJECTS BY FOREIGN DONOR AGENCIES
(Million US$)

	FY 77	FY 78	FY 79	FY 80	FY 81	Approximate number of families benefited
Integrated Development project AID	0.2	0.3	1.9	1.9	2.2	23,000
Development project of the North IBRD	1:2	1.3	1.4	1.3	1.3	4,000
Integrated project of Petit-Goave and Petit Trou de Nippes CIDA	0.3	0.4	0.3	0.3	0.3	13,000
Development of the Artibonite Valley I IDB	0.1	0.3	0.3	0.2		20,000
Development of the Cul de Sac IDB		0.2	0.3	0.3	0.3	1,800
Small Coffee Plantations AID	1.7	1.0	1.0	0.2	0.2	12,000
Development of the Southern region I IDB				0.4	0.5	2,000
Development of the Jacmel Plain, French		0.2	0.2	0.2	0.2	1,000
Development of the Plan of Gonaives, German Federal Republic	0.2	0.2	0.2	0.2	0.2	1,000
Development of the Plateau Central IDB					0.4	2,000
Development of the Artibonite Valley II IDB				0.4	0.5	6,000
Cul de Sac II IDB					0.5	6,000
Rural Community Development HACHO/AID	0.2	0.3	0.3	0.3		-
Agriculture Development Support I		0.3	0.4	0.4	0.5	-
Environmental Preservation AID			1.0	1.0	1.0	11,000
Integrated Community Development AID			0.1	0.2	0.3	-
Vulgarization FAO		0.1	0.2	0.1	0.1	-
Institutional Strengthening CIDA	0.2	0.3	0.4	0.6	0.6	-
Institutional Strengthening Ecole Moyenne de Développement IBRD			0.2	0.3	0.3	-
Total	4.1	4.9	8.2	8.3	9.4	84,800

HUMAN RESOURCES REQUIREMENTS

MANPOWER DEMAND ESTIMATES

One important conclusion can be derived from the previous summary of the current and future activities of the various international organizations in Haiti: the vehicle for aid in the next five years will be principally the integrated development projects. These are multifaceted programs involving community organizations, infrastructure construction and maintenance, credit programs, institution building, rural education, and marketing. The success or lack of success of these ventures will, to a large extent, determine the type and amount of assistance that will be needed three or four years from now.

The Haitian counterpart financial and manpower requirements calculations will be based on the demands generated by these projects.

Manpower Requirements. The integrated projects will require many trained Haitians but less than would have been expected by looking only at the size of the programs. This is because each project concentrates at first on a relatively small area and progressively shifts to other regions. Two stages are usually foreseen. In the first stage, which is a demonstration period, large numbers of experts are needed to introduce the services of the program to the farmer and hopefully increase his food producing capacity substantially within two to three years. In the second stage, when conditions begin to improve, less supervision is needed and the project team can move on to another region. In this manner, the original staff of the project remains basically unchanged. The additional staff required is generated mostly internally through on-the-job training.

In order to derive specific numbers, it is necessary to estimate certain parameters. These estimates will be based on the experience registered so far in the first two integrated development projects: ODN, the Office de Développement du Nord, financed by the World Bank; and DRIPP, the Développement rural intégré de Petit Goave, financed by CIDA.

The employment schedule of these two projects as of January 1977 is offered in Table I. The employees have been classified under three general categories: administrative, professional and technical. The employees classified under administration are those in charge of the technical coordination, management and control of the resources applied in the development of the project. The second category includes high level technicians whose work require advanced training or academic studies at an institution of higher learning. The third group includes those that have practical skills directed towards practical and specific tasks and have been trained in specialized institutions, not requiring a university degree.

A number of ratios can be calculated on the basis of the information listed in Table II.

TABLE II

SCHEDULE OF EMPLOYMENT OF TWO INTEGRATED RURAL DEVELOPMENT PROJECTS (JANUARY 1978)

	Organisme de Développement du Nord (ODN)	Développement Rural Intégré de Petit Goave
Administration 1/	8	13
Professional 2/	21	56
Agronomist	6	15
Engineer	4	10
Accountant	8	8
Economist	2	5
Statistician	-	3
Sociologist	1	5
Lawyer	-	1
Topographer	-	2
Geographer	-	2
Technician	41	61
Agricultural technician	20	22
Assistant engineer	3	-
Surveyor	6	-
Animation agents	5	19
Agricultural credit agent	5	-
Interviewer	-	19
Veterinary assistant	2	5
Bookkeeper	-	1
Total	54	119
No. of families that benefit directly from the project	4,000	13,000
Estimated total investment (US$ millions)	13.3	16

1/ Administrative personnel is also listed under professional whenever necessary.

2/ Foreign experts were assigned a local counterpart of the same profession.

TABLE III

MANPOWER RATIOS

Families per:	ODN	DRIP
Administrative employees (A)	500	1,000
Professionals (P)	190	230
Technicians (T)	100	210
Agronomists	670	670
Agricultural technicians	200	590
Animation agents	800	680
Total APT employees	74	109

It is not advisable in a global study of this nature to project each expertise needed in the implementation of all integrated projects in Haiti in the next five years on the basis of the experience accumulated in only two projects. On the other hand, although the general classifications of administrative, professional, and technical employees may be enlightening conceptually, they are too general to permit the derivation of useful estimates of future supply of such skills. The logical compromise is, of course, to consider only certain skills. Yet, there are no known mechanisms for selecting the "right" skills. Consequently, the following criteria have been developed since they appear to be reasonable for use in making these selections:

- All important agricultural projects in terms of relative impact on the peasant must use such skills.
- The individuals from the chosen professions must play important roles in the development of these projects.
- The agricultural sector must be a primary user of these skills.

On the basis of these criteria, three categories of skills have been chosen for further analysis: agronomists, agricultural technicians, and animation agents. Although other professionals such as engineers, economists, and accountants are important in the development of the integrated development projects, they were not selected because, in general, their future availability depends heavily on demand from other sectors of the economy.

Before attempting to obtain manpower projections on the basis of future projects, it may be enlightening to perform similar projections on the basis of desirable total requirements for the country. The following ratios were derived on the basis of the ODN and DRIPP experiences. A conservative (A) and optimistic (B) alternatives are presented.

TABLE IV

RATIO OF FAMILIES PER TYPE OF EMPLOYEE 1/

Rural families per:	Alternatives A	Alternatives B
Administrative employee	500	1,000
Agronomist	700	1,000
Agricultural technician	200	500
Animation agent	650	800
Total APT employees	100	200

1/ These ratios are substantially similar to those postulated in two previous studies of human resources in the agricultural sector: I. Asmon, "Human resource requirement for the development of the agricultural sector of Haiti." December 1973 and Paul Saint Clair, "Situation actuelle des cadres agricoles de niveaux supérieurs et moyens et projection des besoins pour la période 1976-1985", December 1975. Azmond, for example, assumed 1 agronomist for 250-500 families and 1 extension agent for 100 families. Saint Clair assumed 1 agronomist for 1000 farmers and 1 agricultural technician for 250 families.

In 1971, there were about 596,000 rural families in Haiti, distributed as follows:

Regions	Rural families
North	99,000
Northwest	29,000
Artibonite	136,000
West	174,000
South	158,000

Source: Department of Statistics.

More recent information is not available. However, given the relative stability of land holding patterns in Haiti, it is safe to assume that these numbers have not changed markedly since that time. Applying the previous ratios to these numbers, the following results are derived.

TABLE V

HUMAN RESOURCE TARGETS IN THE AGRICULTURAL SECTOR OF HAITI

Manpower	Alternative A	Alternative B
Administrative employees	1,192	596
Agronomists	851	596
Agricultural technicians	2,980	1,192
Animation agents	993	745
Total APT employees	5,960	2,980

These numbers are useful because they represent upper bounds of manpower needs according to certain desirable goals in the agricultural sector of Haiti. They assume, of course, that existing conditions--in particular, the large number of small farms--will persist in the future.

A similar type of analysis can be performed on the basis of the number of farmers that the new integrated development projects will benefit directly in the next five years (see Table I). The results of these calculations are presented below.

TABLE VI

HUMAN RESOURCE NEEDS IN THE NEXT FIVE YEARS BASED ON THE IMPLEMENTATION SCHEDULE OF THE PRINCIPAL INTEGRATED DEVELOPMENT PROJECTS

Manpower	Alternative A	Alternative B
Administrative employee	170	85
Agronomist	120	85
Agricultural technicians	420	170
Animation agents	140	100
APT employees	850	420

MANPOWER SUPPLY ESTIMATES

This section will begin with a description of the institutions which train agronomists, agricultural technicians and animation agents. Then the gross and net increase in each skill category will be forecasted.

Institutions. Two institutions provide the majority of the trained professionals in the agricultural field. The Faculté d'Agronomie et de Médecine Vétérinaire and the Ecole Moyenne.

Faculté d'Agronomie et de Médecine Vétérinaire

This institution is located in Damien, outside of Port-au-Prince, in facilities that were constructed twenty years ago with USAID assistance. The Faculty itself is about sixty years old. It graduated its first agronomists in 1928. Since October 1977, the school has been undergoing profound reforms with the assistance of CIDA. The main objectives of this technical assistance are to improve the quality of teaching and to strengthen the administrative and managerial structure of the institution. In order to reach the first objective, the course curriculum is being modified to include a greater variety of subjects and more applied instruction and laboratory

work. In addition, the teaching staff will be strengthened with the hiring of ten Haitian teachers on a full-time basis within four years of the start of the program. To complement these reforms, a new laboratory and a modern library are being built and equiped which will be sufficient for the needs of the students. The second objective will be attained mainly by creating a faculty council in charge of the academic, administrative and financial management of the school. In addition, the Damien farm will become the property of the school, thus providing it with an additional independent source of income.

The Faculty has a four-year program, divided into semesters. Starting in 1981, it will graduate 40 agronomists-generalists per year. Beginning soon, these graduates, along with others from previous classes, will have the opportunity to begin a fifth year specialization program in rural engineering. This specialization program was conceived and will be financed by AID in order to meet the forecasted increase demand for technicians with a background in the engineering sciences.

Ecole Moyenne d'Agriculture

Agricultural and veterinary science technicians are mostly trained in the Ecole Moyenne which is also located in Damien. CIDA is currently preparing a restructuration program for the Ecole similar to the one that is being implemented in the Faculty. Already, as part of the technical and financial aid, various buildings are being repaired. It is expected that the Ecole will maintain its two-year curriculum largely intact, improving mainly the quality of teaching. The number of graduates will be doubled to about fifty annually, of whom ten will be specialized in the veterinary sciences. The next class will be recruited in September, 1978.

Ecole Moyenne de Développement

A new two-year school is to be built soon in the northern region with the assistance of the World Bank. The plans call for the formation of 50 agricultural technicians every year and 50 animation agents every two years. The school curriculum will be similar to that of the Ecole Moyenne and will incorporate all the improvements that are being considered by CIDA in Damien. All students will be required to study the same subjects during their first year. During their second year they will choose a specialization in agriculture or in community development. The new school will recruit its first students in 1981.

Institut Diocésien d'Education des Adultes

At the present time, rural animation is being taught mainly at the Institut Diocésien d'Education des Adultes (IDEA), a Catholic school which is located in Cap Haitien and belongs to the Catholic Church. Each year, the school prepares about 30 animation agents in a ten-month course. The program consists of introductory courses in community organization, agriculture, public health, sociology and religion. After their graduation, the students go to work for the community councils in their region or in the various religiously oriented community action programs in the northern area.

Centre de Formation d'Animateurs Polyvalents

On two occasions, ONAAC attempted to form a school to train animation agents. So far, these two attempts have been short-lived and so, for the most part, the agents employed by ONAAC receive on-the-job training.

Manpower projection: gross increase

Agronomists

The number of new agronomists that will be produced by the local institutions in the next five years can be accurately determined on the basis of the students presently enrolled in the Faculty and on the basis of the programs being implemented by CIDA. The students currently enrolled at the Faculty number 195, derived as follows: first year: 47, second year: 25, third year: 37, and fourth year: 39. It is expected that, as in past years, a selection process will take place during the first year of the program and, as a result, about 15 percent of the students will not go to the second year. After this initial selection, all remaining students usually graduate. Under these assumptions, the new graduates will enter the market according to the schedule presented in Table VII below.

Agricultural technicians and animation agents

Agricultural technicians will graduate from the Ecole Moyenne in Damien and the new Ecole Moyenne de Développement in the north. Since the new promotion at Damien will not be recruited until September 1978, no new graduates will enter the market in 1978 and 1979. The impact of the new school in the north should be felt in 1983. The production of animation agents will follow a similar pattern.

TABLE VII

NEW GRADUATES

Year	Agronomists	Agricultural technician	Animation agent
1978	39	0	30
1979	37	0	30
1980	25	40	30
1981	40	40	30
1982	40	40	30
1983	40	90	80

Manpower projection - Net increases

In order to calculate the net increase in each one of these professions annually, it is necessary to estimate an annual attrition rate. There is sufficient data to calculate an attrition rate for the agronomists. Similar but lower rates will be assumed for the agricultural technicians and the animation agents. The details of the calculation are presented in Annexes 1, 2 and 3. The results of the calculations are presented in Table VIII.

TABLE VIII

NET SUPPLY OF THREE TYPES OF PROFESSIONALS IN HAITI FOR THE NEXT FIVE YEARS

Year	Agronomists	Agricultural technician	Animation agent
1978	31	-4	29
1979	27	-4	28
1980	14	36	28
1981	28	35	27
1982	26	37	26
1983	25	84	76
Total increase at the end of 1981	100	63	112
Total increase at the end of 1983	151	184	214
Total in the sector 1/ at the end of 1983	388	383	280

1/ See Annexes 2 and 3.

When the total number of agronomists, agricultural technicians and animation agents available in the sector at the end of 1983 is compared with the targets shown in Table V, it becomes clear that a large deficit will continue to exist for many more years.

TABLE IX

SURPLUS AND DEFICIT (-) OF CERTAIN TRAINED PEOPLE BASED ON THE DEMAND GENERATED BY INTEGRATED PROJECTS

Type of employees	Alternative	
	A	B
Agronomists	-20	15
Agricultural technician	-350	-100
Animation agents	-30	10

MANAGEMENT REQUIREMENTS

The presence of an adequate number of experts is no guarantee that the development goals of the sector will be reached. These people must be placed in an environment which promotes change. In general, such an environment does not exist presently in the agricultural sector. Although the matter is not easily quantifiable, certain unmistakable signs are present.

At the end of 1977, 472 agronomists had graduated from the Faculty of Agronomie and Médecine Vétérinaire. Of this number, 57 are on studies abroad, deceased or their whereabouts unknown, 36 are working in the private sector and 147 or 35 percent have emigrated. See Annexes 4, 5 and 6. Such a high percentage of emigration among a group of technicians so sorely needed in their own country is unusual. It must be inferred that these people were not presented with an attractive alternative.

Less than half of the agronomists (42 percent) that are employed in the Department of Agriculture practice outside of Port-au-Prince (Annex 7). In other words, the scarce human resources available are not being used efficiently in areas where they are most needed.

From all accounts, the agronomists that are working in the countryside do so under very trying conditions and lack supplies, vehicles and even the bare minimum of office space. In these circumstances, their contribution towards agricultural development is minimal.

Although a detailed survey of all the administrative, professional and technical employees of the Department of Agriculture was not conducted, a large number of professionals were interviewed. A high proportion of those interviewed (especially the junior staff), expressed dissatisfaction with their work. Their reasons ranged from the lack of meaningful assignments (many were idle), the inertia of the bureaucratic machinery and its reluctance to introduce change, the lack of work incentives either in the form of rewards for good work or penalties for lack of performance, and arbitrariness in assignments of personnel to jobs for which they had not been trained properly. Although a certain amount of "grumbling" seems to be part of every large organization, the level of "grumbling" present at the Department of Agriculture appears to be high even though the new director draws high praises from his staff.

In the Department of Agriculture, a few people continue to hold a great deal of information in their power while keeping subordinates in the dark with respect to the details of many important programs. Such behavior may be useful in the short run because it decreases the chance that a junior staff will take a wrong initiative. It has also the added advantage of consolidating one's position in the power structure, although the latter result may occur at the expense of team spirit and efficient management. In the long run, however, this control of information leads to discouragement and a lack of initiative among Departmental employees.

Although important measures for the decentralization of decision making in the sector have been instituted recently, authority is still very centralized. As a consequence, decisions are often postponed because one person is absent or has not had the time to study the matter.

These observations do not adequately deal with very many significant positive changes instituted recently in the sector. Also the behavioral patterns discussed above are present to some degree in most institutions. Yet, their continued prominence in the sector, despite genuine ameliorative efforts by dedicated public servants, seems to suggest that a more fundamental phenomenon is at work.

These symptoms seem to indicate that the institutions in the agricultural sector and in particular the Department of Agriculture are experiencing a "change of phase" which will become more pronounced as more aid is provided. Before the recent aid infusion in the form of relatively complex integrated development projects, the institutions were functioning with a system of management based on centralized decision making, the absence of formal procedures and informal direction with the assistance of "helpers" instead of middle managers. The increase size and complexity of the sector calls for the coordination of a variety of tasks, the production of large amounts of information and the design of relatively sophisticated control mechanisms.

Unless the proper management structure is adopted, the institutions will be ineffective in reaching their goals even if the public sector employees are able and dedicated and the directors, persons of great abilities. However, the introduction of a better management structure is not easy. It calls for change in basic concepts, basic principles and individual values.

The type of situation that confronts the agricultural sector is not foreign to other sectors, other countries or private business organizations. It may be useful to indicate some of the strategies that have been adopted in the past to implement similar institutional changes.

1) The creation of a parallel organization. Perhaps the best known examples of such a scheme can be found among the various public and semi-public organizations of the Commonwealth of Puerto Rico. This alternative implicitly acknowledges that existing structures and vested interests are too solidly entrenched to be challenged openly. Therefore, institutional change is implemented with new programs. In addition, important tasks are increasingly assigned to staff members belonging to a parallel organization which in the case of Puerto Rico often functioned as a public company. A variant of this scheme has long been favored in the agricultural sector of Haiti. This is a relatively costly alternative since it chooses not to use available manpower, and in addition accepts the risk that the parallel institution will disappear when the new programs end.

2) The hiring of private firms to undertake most of the productive work of the agencies. This variant is used in many U.S. agencies. It allows a relatively small group of public employees to implement numerous and large projects. It also provides added flexibility in the hiring of individuals and often obtains excellent results. However, not all types of work can be passed on to the private sector. Although there are no set rules, it would seem that the more political the assignments, the less likely the private sector will perform them satisfactorily.

3) The modification of existing institutions. This variant tends to be more difficult to implement than the other two because it attempts to change

the mentality of people who have risen through the system, understand its intricacies, benefit from it, and, therefore, are unwilling to change it.

CONCLUSION AND RECOMMENDATIONS

In conclusion, the agricultural sector of Haiti will experience shortages of trained manpower in the next five years. The estimates derived for agronomists, agricultural technicians, and animation agents were calculated on the basis of limited data. In fact, the shortages are likely to be more pronounced when other projects are taken into consideration. Furthermore, these shortages will occur in the very basic professions for which there currently exist well-established training programs. The shortage will be even more pronounced in the more specialized professions.

However, these shortages need not imperil project implementation in the next five years for several reasons:

1) To a large extent, the need for local trained manpower may be met with the hiring of outside experts. This solution is not new in the international development community, and has worked successfully in many cases, at least during project implementation.

2) Shortages will occur in many professions for which university training is required and which, therefore, demand a long period of study. However, the particular skills needed to implement any one project often can be learned in brief training periods by most high school graduates. At least, in the case of the integrated projects, many of the skills required are relatively basic, requiring little advanced academic preparation.

3) In a market economy, when shortages occur the market price for the good rises, and additional sources of supplies surface and promptly fill in

the gap. A similar phenomenon will probably occur in Haiti for many professions. As the wages for trained people increase and working conditions improve, professionals from other areas or other sectors will be attracted to the public agricultural sector. It is not possible to quantify exactly the size of this potential pool of trained people. However, it is likely to be important given the size of the Haitian community abroad. In this case, a possible manpower limitation may turn out to be a financial limitation because of low government revenues.

A much more serious limitation results from the absence of proper management structure. The current management structure in the Department of Agriculture and in many of the semiautonomous institutions does not appear to be adequate to deal with the increasingly complex projects that are being launched. This lack of structure may imperil even the satisfactory resolution of the lack of properly trained people. Such a gap cannot be filled by outside experts. Modification of existing structures is a time-consuming, politically delicate process which demands changes in ideas and attitudes.

The management void is not caused by a lack of capable and dedicated men but rather by a lack of proper knowledge and adequate systems. The recommendations offered in the following sections deal with both aspects of the problem.

Constraint: Lack of proper knowledge.

Possible actions

1. Training programs in the management sciences at two levels: (a) high and middle level professionals, and (b) recent graduates from universities and colleges. Given the time limitation, in-house training within the Department is strongly recommended. Preferably, the courses should be

taught in the evenings over a number of semesters. The practical aspects of the program should be stressed and students encouraged to apply their new knowledge as soon as possible on problems they confront in the sector, as part of their regular class work. The members of the management team which will be hired as part of the AID technical assistance program to the Department of Agriculture should teach some of the courses in the program. The Commission Administrative, having conducted one similar course in the past, is the government institution which should accept the responsibility for directing the course. The presence of the Commission would contribute to making the course a permanent feature of public employees training and also would open the program to a wider audience.

Programs that contemplate sending one or two individuals abroad for a relatively long period of time are not recommended. Upon their return, these people may be resented by their colleagues who stayed home, and their contributions may be small because they do not constitute a large enough force to initiate changes within the institution. As a result, they are likely to become cynical, emigrate, or discourage other people from participating in more productive in-house training programs.

2. Hiring of proven managers to handle matters of direction, coordination, and control of an organization. Such people need not be agronomists since, in general, their jobs require managerial expertise rather than extensive technical knowledge in the field of agriculture.

Constraints: Lack of adequate systems.

Possible actions

1. Elaboration of a clear definition of the role of the Department of Agriculture within the changing conditions of the agricultural sector. What

will be the major focus of the Department in the next five years? Some of the possible answers are:

. providing technical assistance to the small farmers on the basis of applied research.

. coordinate the financial, personnel, and purchasing aspects of a large number of semiautonomous agencies.

. design price policies and marketing strategies, collect statistics, and perform development plans for the sector.

When a clear Departmental focus is determined, an improved organizational structure should be designed to facilitate its implementation. A management strategy for the most important tasks should then be developed. It is possible, for instance, that a far more decentralized institution should be created which gives major decision-making authority to a few regional managers.

2. Introduction of key management tools such as a modern accounting system tied to an annual budget, written procedures and job descriptions.

3. Creation of a new personnel department with specified personnel policies, including a uniform pay plan for the sector as well as incentive packages.

Persons in position of power in the sector have a difficult task ahead. They must judge how much change the public service system can absorb, given Haitian political realities, and how fast it can be imposed. It is, therefore, crucial that new policies be accorded continuous public and private endorsement by the chief executive of the Department.

CALCULATION OF THE ATTRITION RATE FOR AGRONOMISTS

(1) Year	(2) Accumulated years after graduation	(3) Total graduated	(4) Not working in public sector	(5) Attrition rate (4) / (3)	(6) Annual attrition rate (5) / (2)
1928	49	4	4	100	2.04
1943	43	31	27	87.1	2.03
1939	38	13	8	61.5	1.62
1942	35	19	11	57.9	1.65
1945	32	15	13	86.7	2.71
1947	30	21	13	61.9	2.06
1951	26	40	25	65	2.5
1955	22	33	19	57.6	2.62
1959	18	32	21	65.6	3.64
1963	14	33	22	66.7	4.76
1967	10	40	25	62.5	6.25
1971	6	59	27	45.8	7.63
1973	4	22	6	27.3	6.83
1974	3	24	7	29.2	9.73
1975	2	24	6	25	12.5
1976	1	29	6	20.7	20.7
1977	0	33	0	-	-
Average					5.58

NET SUPPLY OF AGRONOMISTS IN THE PUBLIC SECTOR

	1977	1978	1979	1980	1981	1982	1983
In the public sector	232	219	248	274	287	313	338
Annual attrition (5.58%) (retirement, deaths, etc.)		(13)	(15)	(16)	(17)	(19)	(20)
New graduates available to the public sector		39	37	25	40	40	40
New recruits from abroad and from private sector (assumption)		5	5	5	5	5	5
Total at the end of each year		263	290	304	332	358	383
Net increase		31	27	14	28	26	25

NET SUPPLY OF AGRICULTURAL TECHNICIANS IN THE PUBLIC SECTOR

	1977	1978	1979	1980	1981	1982	1983
In the public sector	199	195	191	187	222	255	293
Annual attrition (2%)		4	4	4	5	5	6
New graduates	0	0	0	40	40	40	90
Total		195	191	227	262	299	383
Net increase		-4	-4	36	35	37	84

NET SUPPLY OF ANIMATION AGENTS IN THE PUBLIC SECTOR

In the public sector	66	65	93	121	148	174	200
Annual attrition (2%)		1	2	2	3	4	4
New graduates		30	30	30	30	30	80
Total		95	123	151	178	204	280
Net increase		29	28	28	27	26	76

ANNEX 4

AGRONOMISTS

Graduation year	Total	DARNDR	FAMV	BCA	IHPCADE	ODN	DRIPP	ODVA	ODPG	CONADEP	IDAI	Private sector	Abroad	On studies abroad	Unknown	Deceased	IDAI	Not working
1928	4											2			1	1		
1934	31	2			2							6	6		1	9		5
1939	13	1								2		3	3			1	2	1
1942	19	5	1	1	1							3	5		2	1		
1945	15	1								1		3	8			2		
1947	21	8										2	9		1	1		
1951	40	11			2			1		1		5	15		2	3		
1955	33	9		2			1			1		2	16		1			
1959	32	4					1					1	20				6	
1963	33	4		3	3							4	18				1	
1967	40	4	1	2					1			1	19	1	3	1	7	
1971	59	14	2	3			2		1			2	14	4	7		10	
1973	22	9		1	2		1	2				1	3	2			1	
1974	24	9			3		1	3	1				3	3	1		1	
1975	24	9		1		1	1	2	1			1	3	2			3	
1976	29	8	2	2		2	4	2					5	1			3	
1977	33	19		2	1	3	2	3	1								2	
Total	472	117	6	17	14	6	13	13	5	5		36	147	13	19	19	36	6

Source: DARNDR - Programming Unit.

ANNEX 5

AGRICULTURAL TECHNICIANS

Graduation year	Total	DARNDR	FAMV	BCA	IHPCADE	DRIPP	ODVA	ODPG	IDAI	Private sector	Abroad	Unknown	Deceased	Not working
1965	39	10							1	1	10	17		
1967	29	3	1		1		2	1	2	1	15	3		
1969	40	12					1		2	2	15	7	1	
1971	27	4		1		1	1		11	2	5	2		
1973	23	9			2		2		4	-	3	3		
1975	21	5		1	2		1		9	-	2	1		
1977	20	5		6	1	2	3	1	3					
Total	199	48	1	8	6	3	10	2	32	6	50	33	1	0

Source: DARNDR - Programming Unit.

ANNEX 6

VETERINARY TECHNICIANS

Graduation year	Total graduates	DARNDR	ODN	DRIPP	ODPG	Abroad	Unknown
1973	19	13				2	4
1975	22	15	1	1	1	0	4
1977	13	8	3	2		2	4
Total	54	36	4	3	1	4	16

Source: DARNDR - Programming Unit.

ANNEX 7 UNIVERSITY TRAINED PROFESSIONALS EMPLOYED AT THE DEPARTMENT OF AGRICULTURE

	Central office				Provinces				
	Agronomists	Engineers	Others	Agricultural technicians	Agronomists	Engineers	Others	Agricultural technicians	Total
Agricultural credit	7				6		4	3	20
Chemistry	4								4
Marketing	3			1					4
Soil conservation	4			1	6			7	18
Livestock	6			1	1				8
Agricultural extension	12		1		42			33	88
Faculty of agronomy	9		1						10
Control and inspection	1								1
Irrigation	1	11	1			10		7	30
Equipment	1								1
Veterinary medicine	3			5				29	37
Weather		6	1	7					14
Fishing	5		2						7
Research	10			2	1				13
Statistics	4			1					5
Programming	7	1							8
Total	77	18	6	18	56	10	4	79	268

FINANCIAL RESOURCE REQUIREMENTS

The amounts of local funds which are made available to the agricultural sector in the next five years will depend primarily on the size of the government revenues, the priorities of the government and the size and distribution of foreign agencies contributions. It is possible to derive rough estimates of future government revenues. Similarly government priorities can be inferred from past expenditures. It is not possible however to predict how the government will react to the influx of foreign aid in any particular sector of the economy. A large infusion of foreign aid in one sector may permit the government to reduce its own contribution to that sector in favor of another less favored one.

Haitian government contributions to the agricultural sector will come by means of the Fiscal Budget and the Development Budget. The rest of this section examines how total government revenues can be apportioned between the two budgets and other expenditures. Finally a percentage of each budget is assigned to the agricultural sector. These processes are described next.

STEP 1. To some extent, government revenues are collected on activities which reflect the state of the economy such as the levels of imports and the consumption of certain goods such as flour, sugar, and cigarettes. Consequently to predict such tax revenues in the next five years, one must first predict how the economy will behave. For that purpose, a simple macroeconomic model was constructed. It establishes in mathematical terms how the Gross Domestic Product, Consumption, Investment, Imports, and Exports are related. Then, once a growth rate for GDP is postulated (5 percent) the size of the other variables can be determined from the model. Further details on the model's specifications are offered in Appendix 8. The estimates of Gross

Domestic Product, Consumption, Investment, Imports and Exports are presented in Table XI in constant 1955 and current prices. The transition from constant to current prices is accomplished by assuming a 7 percent rate of inflation during that period. The annual growth rates of GDP are then 5 percent in real terms and 12 percent in current terms (Table XII).

STEP 2. Linear regressions are derived for corporate and individual taxes, import duties, other taxes and non-tax revenues on the basis of data covering the period 1972-1976. A number of other taxes on property, motor vehicle, and exports of coffee are projected on the basis of a trend line. Finally the remaining taxes are assumed constant for the length of the period (Annex 9 and Table XIII). The estimates of total revenues are presented in Table XIV.

STEP 3. The percentage of current revenues which is directed to the Fiscal Budget has been decreasing steadily since 1972. It is estimated that it will remain at around 40 percent during the next five years. The Development Budget (net of PL-480 funds) is assumed to represent 31 percent of current revenues, leaving approximately 29 percent of current revenues to other expenditures. The percentage distribution of each budget among the various sectors of the economy is presented in Tables XVII and XVIII. On the basis of this information, it can be estimated that in the next five years the agricultural sector will obtain only about 8 percent of each budget (Table XIX).

CONCLUSIONS

The results of this brief analysis are presented in Table XIX. It is shown that Fiscal Expenditures can reach 32 million gourdes in the agricultural sector by 1982 compared with the 21 million of 1977. This increase

is negligible since the budget would have to increase to 28 million gourdes in 1982 just to keep pace with the projected rate of inflation. Consequently, in the next five years, the agricultural sector will likely obtain little additional resources for increasing its purchase of supplies and raising its employees salaries. Furthermore, revenues from the Development Budget will not be sufficient to cover the local counterpart expenditures of even the integrated projects listed in Table I. Therefore, if past patterns of government behavior continue in the future and the economy and the tax collecting capacity of the government follow past trends, Haiti will need substantial PL-480 funds in the next five years in order to implement its agricultural projects.

Although the government claims to give high priority to the agricultural sector, figures in Tables XVII and XVIII tell a different story. The agricultural sector is getting a substantially lower share of each budget (local funds) than many other sectors. For example in the Development Budget of 1975-76, Agriculture's share is lower than the shares of Transport, Telecommunications, Energy and Water. In the Fiscal Budget of 1976-77, Agriculture's share is lower than the share of the Armed Forces, Public Health, Education, Finance and Public Works. A change in priorities can increase the amount of resources going to Agriculture. For example, increasing the percentage of the total Development Budget that goes to agriculture from 8 percent to 10 percent, increases the development budget of the agricultural sector by approximately 6 million gourdes annually, or approximately 27 percent. Although important in relative terms, such a change will not significantly increase the level of resources in that sector.

RECOMMENDATIONS

The recommendations which are presented next are aimed at the Agency for International Development.

1. Substantial external financial resources (between 2-5 million dollars annually) must be directed to the agricultural sector in the next five years if the various integrated projects are to obtain the level of support expected. The manner by which such assistance should be channelled to the sector is a complex issue that cannot be addressed satisfactorily in this report.

2. AID's involvement in Haiti's agricultural sector must continue much beyond the next five years. The integrated development projects have started to provide or will provide in the future assistance to the farmers at a level and quality unknown so far in Haiti. This level of services cannot be maintained by the Haitian government with its meager financial resources after the projects are terminated in the next five to six years.

LIMITATIONS OF THE ANALYSIS

This financial analysis has serious limitations and does not pretend to be more than a first attempt to deal with an important question. The heart of the analysis is the revenues projections. Unfortunately, tax revenues data are very incomplete in Haiti. Roughly, half of the revenues are unidentified in the sense that their origins cannot be traced. In fact, a proportion of most taxes, such as on net income, is earmarked to several accounts and only a portion of the tax collected is listed under its name. In addition, some revenues are placed in the catch all account "unidentified revenues." Several months of work would be needed to trace all the revenues in that account to their original source. In the meantime, an important

source of revenue cannot be projected in any rational manner for lack of information on its sources. A similar difficulty exists on the expenditure side. It is not possible, for example, to inquire seriously as to whether certain unidentified expenses or special accounts could be reduced and the revenues allocated to the agricultural sector, since little information is available on these accounts.

MODEL USED TO DERIVE THE MACROECONOMIC PROJECTIONS OF GDP, CONSUMPTION, INVESTMENT, EXPORTS AND IMPORTS 1/

$(GDP)_t = (GDP)_{t-1} (1 + a)$

$Inv = B (GDP_t - GDP_{t-1})$

$Imp = A + b(GDP)$

$Exp = (Exp)_{t-1} (1 + c)$

$C = GDP + Imp - Inv - Exp$

The following assumptions were made:

1. $a = 5\%$

2. $c = 8\%$

The parameters of the investment and imports equations were estimated on the basis of past data (Table X).

$Imp = 0.8797 (GDP) - 1089$ (data from 74 to 76)

$Inv = 4.47 (GDP_t - GDP_{t-1})$

In addition, it was assumed that public consumption will increase at a rate of 2 percent annually for the next five years. Since 1965, it had increased at a rate of 1 percent annually. The rate of inflation was taken to be 7 percent annually for all variables during the period 1977-1982.

1/ This is a variant of the model used by the Department of Statistics in making the projections for the second five-year plan.

ASSUMPTIONS FOR THE CALCULATION OF REVENUES

Corporate taxes = 0.01164237 (GDP) - 12.2347

Individual taxes = 0.00240292 (GDP) - 2.467186

Taxes on property: trend line

Excise taxes: constant, highest value of the last three years

Motor vehicle tax: trend line

Import duties = 0.14297887 (private consumption) - 0.08797

Coffee export tax: trend line

Bauxite export tax: constant for the period = 1977 receipts

Other taxes on international trade = constant = average for 1972-76

Other taxes = 0.0024306 (GDP) + 2.971594

Municipal taxes = average between 1972-1976

Non-tax revenues = 0.00196588 (GDP) + 1.551

Unidentified revenues = constant = 1977 receipts

TABLE X

HAITI: TOTAL SUPPLY AND DEMAND

(Millions of 1955 gourdes)

	1972	1973	1974	1975	Estimate b/ 1976
TOTAL SUPPLY	2,209.0	2,356.0	2,405.0	2,545.0	2,684.0
Gross Domestic Product	1,773.0	1,826.0	1,888.0	1,912.0	1,994.0
Imports a/	436.0	530.0	517.0	633.0	690.0
TOTAL DEMAND	2,209.0	2,356.0	2,405.0	2,545.0	2,684.0
Consumption	1,621.0	1,744.0	1,771.0	1,890.0	1,894.0
Private	1,465.1	1,601.5	1,632.9	1,754.8	1,744.0
Public	155.9	142.5	138.1	135.2	150.0
Investment	210.0	245.0	272.0	299.0	410.0
Exports	378.0	367.0	362.0	356.0	380.0

(Millions of current gourdes)

TOTAL SUPPLY	2,722.0	3,470.0	4,145.0	5,157.0	6,144.0
Gross Domestic Product	2,316.2	2,992.8	3,427.0	4,332.6	5,155.8
Imports a/	406.0	477.0	657.5	824.5	989.0
TOTAL DEMAND	2,722.0	3,470.0	4,145.0	5,157.0	6,144.0
Consumption	2,193.6	2,357.3	3,293.8	4,129.6	4,705.0
Private	1,981.1	2,124.2	3,034.1	3,829.8	4,345.3
Public	212.5	233.1	259.7	299.8	359.7
Investment	220.4	274.5	382.2	489.9	795.0
Exports	308.0	361.0	469.0	537.5	644.0

a/ Goods and services excluding factor payments.
b/ These estimates were calculated by the Inter-American Development Bank.

TABLE XI

MACROECONOMIC PROJECTIONS AT CONSTANT PRICES

(Millions of 1955 gourdes)

Year ending September	GDP	Investment	Imports	Exports	Total consumption	Private consumption
1978	2,198	465	844	443	2,134	1,978
1979	2,308	492	941	479	2,278	2,119
1980	2,424	519	1,043	517	2,431	2,269
1981	2,545	541	1,149	558	2,595	2,429
1982	2,672	568	1,270	603	2,764	2,594

MACROECONOMIC PROJECTIONS AT CURRENT PRICES

(Millions of gourdes)

1978	6,531	1,024	1,368	852	6,023	5,597
1979	7,361	1,154	1,621	979	6,848	6,386
1980	8,303	1,299	1,909	1,126	7,787	7,286
1981	9,355	1,444	2,237	1,295	8,853	8,314
1982	10,899	1,617	2,255	1,489	10,048	9,461

TABLE XII

RATES OF GROWTH AT CONSTANT PRICES

(Percent)

Year ending September	GDP	Investment	Imports	Exports	Total consumption	Private consumption
1979	5	3.5	9.5	8	5.6	5.8
1980	5	4.7	8.3	8	5.3	5.8
1981	5	3.5	7.8	8	5.3	5.5
1982	5	4.3	7.8	8	5.3	5.5

RATES OF GROWTH AT CURRENT PRICES

(Percent)

1979	12	12.8	18.5	15	13.7	14.1
1980	12	12.5	17.8	15	13.7	14.1
1981	12	11.2	17.2	15	13.7	14.1
1982	12	12	17.5	15	13.5	13.8

TABLE XIII

(In millions of gourdes)

	Fiscal year ended September 30						October-August
	1972	1973	1974	1975	1976	1977 3/	1976/77
Current revenue	278.8	303.6	334.7	463.4	546.6	807.0	742.7
Tax revenue 1/	175.3	200.5	206.4	278.4	325.9	387.0	356.2
Taxes on net income and profits	19.0	27.6	32.8	44.4	59.5	67.0	62.5
Corporate	(15.5)	(23.3)	(27.0)	(36.5)	(49.4)	(54.5)	(50.8)
Individuals	(3.5)	(4.3)	(5.8)	(7.9)	(10.1)	(12.5)	(11.7)
Taxes on property	4.0	4.9	6.0	6.9	7.8	8.3	7.6
Real estate	(1.7)	(1.6)	(1.9)	(1.9)	(2.2)	(2.4)	(2.2)
Mortgage registration	(2.3)	(3.3)	(4.1)	(5.0)	(5.6)	(5.9)	(5.4)
Taxes of goods and services	38.7	45.7	35.0	34.2	39.5	44.9	40.0
Excise tax on flour	(13.6)	(19.1)	(11.0)	(7.0)	(7.1)	(9.7)4/	(8.6)
Excise tax on sugar	(8.3)	(8.3)	(5.6)	(6.9)	(7.7)	(6.1)4/	(4.7)
Excise tax on cigarettes	(5.3)	(5.9)	(7.0)	(7.9)	(8.1)	(8.9)4/	(8.1)
Other excise taxes	(7.8)	(7.8)	(6.3)	(6.8)	(9.7)	(10.9)4/	(10.3)
Other	(1.4)	(1.6)	(1.7)	(1.9)	(2.9)	(3.5)	(3.1)
Motor vehicle taxes	(2.3)	(3.0)	(3.4)	(3.7)	(4.0)	(5.8)	(5.2)
Taxes on international trade	95.3	102.4	110.1	172.9	196.0	239.0	270.4
Import duties	(64.1)	(70.4)	(76.1)	(81.2)	(105.0)	(125.0)	(117.8)
Coffee export taxes	(26.7)	(27.6)	(28.7)	(25.0)	(53.4)	(76.7)4/	(75.3)
Bauxite export taxes	(1.2)	(1.2)	(1.2)	(53.8)	(35.5)	(35.2)4/	(25.2)3/
Other export taxes	(1.5)	(0.9)	(1.3)	(9.5)	(1.2)	(1.2)	(1.2)3/
Other	(1.8)	(2.3)	(2.8)	(3.4)	(0.9)	(0.9)	(0.9)3/
Other taxes	8.5	9.8	12.1	13.7	15.2	18.8	17.2
Identity card tax	(2.7)	(3.0)	(3.5)	(4.1)	(4.2)	(6.0)	(5.5)
Stamp duties	(4.1)	(5.0)	(6.5)	(7.4)	(8.4)	(10.0)	(9.1)
Solidarity tax	(1.7)	(1.8)	(2.1)	(2.2)	(2.6)	(2.8)	(2.6)
Municipal taxes	9.8	10.1	10.4	6.3	7.9	9.0	8.5
Non-tax revenue 1/	6.4	6.5	9.0	10.3	11.5	13.0	12.4
Fees	4.3	4.4	6.9	8.2	9.4	10.9	10.4
Contributions by autonomous agencies	2.1	2.1	2.1	2.1	2.1	2.1 4/	2.0
Unidentified revenue 2/	97.1	96.6	119.3	174.7	209.2	407.0	374.1

Sources: National Bank of Haiti; Internal Revenue Administration; Customs Administration; Ministry of Finance and Economic Affairs; and Coffee Institute.

1/ To the extent, it could be identified; most of these revenue items are earmarked to the budget with the exception of the coffee export taxes and the bauxite export taxes which are partly earmarked to the budget and partly to the extrabudgetary accounts.

2/ Consists of various taxes and non-tax revenue largely earmarked to extrabudgetary accounts; quantitative information about the nature of this revenue was not available. Does not include revenue of the Régie du Tabac.

3/ Estimate.

4/ Actual.

TABLE XIV

ESTIMATES OF REVENUES

(Millions of current gourdes)

	Fiscal year ending September				
	1978	1979	1980	1981	1982
Corporate taxes on net income and profit	63.8	73.5	84.4	96.7	114.7
Individual taxes on net income and profit	13.2	15.2	17.5	20.0	23.7
Taxes on property	9.8	10.7	11.7	12.6	13.7
Excise taxes	42.7	42.7	42.7	42.7	42.7
Motor vehicle taxes	5.8	6.4	7.0	7.6	8.2
Import duties	119.8	134.0	148.0	163.0	181.0
Coffee export taxes	72.0	81.0	91.0	100.0	109.0
Bauxite export taxes	35.2	35.2	35.2	35.2	35.2
Other taxes on trade	5.0	5.0	5.0	5.0	5.0
Other taxes	19.0	21.0	23.0	26.0	29.0
Municipal taxes	9.0	9.0	9.0	9.0	9.0
Non-tax revenues	14.0	16.0	18.0	20.0	23.0
Unidentified revenues a/	407.0	407.0	407.0	407.0	407.0
Total revenues	816.3	856.7	899.5	945.0	1001.2
Percentage increase		4.9	5.0	5.1	5.9

a/ Does not include revenues from the Régie du Tabac.

TABLE XV

EXPENDITURES OUT OF REVENUES 1/

(Millions of gourdes)

	Fiscal year ended September 30					October-August
	1972	1973	1974	1975	1976	1976/77
Total receipts	316.8	348.6	398.2	558.5	716.1	...
Current revenue	278.8	303.6	334.7	463.4	546.6	742.7
Budgetary revenue	173.5	191.5	205.7	225.0	285.3	336.6
Customs revenue	(83.7)	(89.8)	(100.7)	(111.5)	(148.3)	(187.2)
Internal revenue	(84.0)	(97.5)	(100.9)	(112.1)	(140.5)	(145.9)
Contributions by autonomous agencies	(2.1)	(2.1)	(2.1)	(2.1)	(2.1)	(2.0)
Other	(3.7)	(2.1)	(1.8)	(-0.7)	(-5.6)	(1.5)
Extrabudgetary revenue	105.3	112.1	129.0	238.4	261.3	406.1
Development budget	(30.5)	(28.4)	(26.5)	(36.9)	(37.2)	(99.2)
Special accounts	(55.0)	(63.4)	(82.8)	(177.4)	(180.1)	(280.2)
Other revenue	(19.8)	(20.3)	(19.7)	(24.1)	(44.0)	(26.7)
Grants	38.0	45.0	63.5	95.1	169.5	...
Total expenditure	341.5	343.2	450.0	635.3	816.1	...
Expenditure net of grants	303.5	298.2	386.5	540.2	646.6	795.4
Budgetary expenditure	169.1	182.5	187.9	204.3	231.7	245.3
Fiscal expenditure	(145.5)	(155.2)	(161.2)	(176.6)	(201.4)	(207.8)
Expenditure from earmarked funds	(23.6)	(27.3)	(26.7)	(27.7)	(30.3)	(37.5)
Extrabudgetary expenditure	134.4	115.7	198.6	335.9	414.9	550.2
Development budget	(31.6)	(29.4)	(27.9)	(107.8)	(174.3)	(230.0)
Special accounts	(55.6)	(63.7)	(82.6)	(183.2)	(178.8)	(247.8)
Other expenditure	(47.2)	(22.6)	(88.1)	(44.9)	(61.8)	(72.4)
Expenditure financed by grants	38.0	45.0	63.5	95.1	169.5	...
Surplus/deficit (-)	-24.7	5.4	-51.8	76.8	-100.0	-52.7

1/ On cash basis.

Source: National Bank of Haiti.

TABLE XVI

USES OF LOCAL REVENUES

(Millions of gourdes)

	Year ending September				
	1978	1979	1980	1981	1982
Total current revenues	816	857	900	945	1001
Fiscal expenditures a/	325	343	360	378	400
Development budget b/	253	266	279	293	310
Other expenditures and special accounts	238	248	261	274	291

a/ Fiscal expenditures as a percentage of total current revenues were 61% in 1972, 60% in 1973, 56% in 1974, 44% in 1975 and 42% in 1976. It was decided to use 40% for the next five years.

b/ The percentage of total current revenues that will be assigned to the development budget is not as predictable because the development budget has registered large increases in recent years. The ratio will be calculated on the basis of the 1977-78 budget. The total budget figure has been reduced by the amounts of PL-480 funds, giving: 300.7 - 50 = 250.7. The estimate of current total revenues is the one presented in Table XIV. The ratio is: 250.7/816.3 = .31.

TABLE XVII

DISTRIBUTION OF EXPENDITURES BY SECTORS. FISCAL BUDGET

(Percentage)

Sector	1973-74	1974-75	1975-76	1976-77
Finance	8	8	8	12
Agriculture	9	8	6	8
Public Works	6	6	5	9
External Affairs	5	5	4	5
Education	14	12	9	12
Social Affairs	1	1	1	1
Commerce	2	2	1	.2
Culture	1	1	1	.1
Justice	3	2	2	3
Coordination	2	2	2	4
Interior	5	5	4	5
Public Health	15	13	12	16
Armed Forces	26	21	17	22
Unidentified	2	15	28	-

TABLE XVIII

DISTRIBUTION OF EXPENDITURES BY SECTORS. DEVELOPMENT BUDGET a/

(Percentage)

Sector	1973-74	1974-75	1975-76
Energy	18	14	11
Transport	16	32	30
Telecommunication	32	25	22
Agriculture	12	8	9
Industry	1	4	6
Tourism	1	-	-
Health	3	2	2
Water	1	1	11
Education	3	4	1
Community Development	4	1	2
Urban Development	-	-	-
Research Planning	9	7	7

a/ Expenditures are from local funds including PL-480 funds. The ratios excluding PL-480 funds are lower. For the 1977-78 budget, the ratio for the agricultural sector without including PL-480 funds is 19.7/250.7 = .08.

TABLE XIX

PROSPECTIVE BUDGETS OF THE AGRICULTURAL SECTOR IN THE NEXT FIVE YEARS

(Millions of gourdes)

	Year ending September				
	1978	1979	1980	1981	1982
Fiscal expenditures a/	26	27	29	30	32
Development budget b/	20	21	22	23	25
Local counterpart funds needed for projects in Table I	21	24	41	42	47

a/ The fiscal budget for agriculture was calculated as 8% of the total fiscal budget of the government.

b/ Similarly, the portion of the total development budget assigned to agriculture was assumed to be 8%. This figure does not include PL-480 funds.