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MONTHLY ACTIVITY REPORT

JANUARY 1976

PROJECT : 521-15-190-069

THE J.G. WHITE ENGINEERING CORPORATION

HAITI Irrigation 4792

I INTRODUCTION

On 16 January 1976 Mr. Henry Gembala, Irrigation engineer, arrived in Haiti to join The J.G. White Engineering Corporation team already in the field.

Mr. Joseph Argo for reasons of health did not return to the project after a Christmas holiday.

II GENERAL ACTIVITIES

An outline of the proposed report format was developed :

2.1 DEVELOPMENT OF IRRIGATION FOR SELECTED AREAS IN HAITI

I INTRODUCTION

A. Frame of reference

B. Brief history of irrigation in Haiti (Table - Hectares irrigated in selected years)

- 1. 1897-1803 French
- 2. 1804-1956 Haitian
- 3. 1957-1975 Recent, including development of Artibonite Valley

- C. Climate* (Tables and maps)
 - 1. Rainfall - amount and distribution. Limits crop growth in some areas throughout the year and in other areas during part of the year.
 - 2. Temperature - Crops can grow throughout the year if moisture is available ; multiple cropping.
 - 3. Sunshine
 - 4. Humidity
 - 5. Evaporation and evapotranspiration
 - 6. Plant ecology, as an indicator of the need for irrigation in various areas.
- D. Water available for irrigation * (Tables and maps)
 - 1. Amount in relation to need, by season
 - 2. Quality
- E. Soils * (Tables and maps)
 - 1. Kinds of parent materials (geology)
 - 2. Topography
 - 3. Environmental conditions and degree of weathering
 - 4. Broad groups of soils and their extent, with special reference to soils suitable for irrigation.

* See report of "Haiti Mission d'Assistance Technique Intégrée"
Secrétariat Général, Organisation des Etats Américains,
Washington, D.C. 1972

F. Agriculture (Tables)

1. Size of farms, land tenure, labor supply
2. Major crops - land use and production
3. Livestock - kinds and numbers
4. Marketing

G. Population and food supply in relation to the need for irrigation to increase agricultural production (Tables)

1. Population distribution (rural density and urban), age, sex, etc.
2. Nutrition

H. Social conditions (Tables)

1. Housing, water supply, etc.
2. Literacy, especially in relation to the introduction and use of improved agricultural methods.

I. Economic infrastructure (Tables)

1. Gross national product
2. Communications, especially roads to market products
3. Exports
 - a. Agricultural
 - b. Other
4. Imports
 - a. Agricultural
 - b. Other

II Rehabilitation of Dubreuil Irrigation System

III FEASIBILITY OF REHABILITATION AND IMPROVING THE JEAN RABEL
IRRIGATION SYSTEM

A. Existing system and the surrounding area

1. Location with respect to natural and cultural features.
Topographic map of the area showing roads, towns, streams, and the location of the existing Jean Rabel irrigation system in the Jean Rabel River valley (Map).
2. Detailed map of the existing irrigation system showing intake and distribution channels.
3. Current agricultural production and marketing (Tables)
 - a. Number and size of farms, land tenure, labor supply
 - b. Land use and crop yields
 - c. Livestock - kinds and numbers
 - d. Production retained for family subsistence
 - e. Market channels and prices
 - f. Gross (and net ?) returns
 - g. Agricultural processing industries

B. Resources in the area * *

1. Climate (Tables and maps)
 - a. Rainfall - amounts and distribution
 - b. Temperature and air movement
 - c. Sunshine
 - d. Humidity
 - e. Evaporation and evapotranspiration

* * See "Enquêtes sur les Terres et les Eaux dans la Plaine des Gonaïves et le Département du Nord-Ouest", United Nations FAO/SF : 45/HAI-3, 1963. Five volumes: I, Rapport général; II, Pédologie; III, Eaux; IV, Génie rural, and V, Socio-économie.

2. Geology and geohydrology of the Jean Rabel River watershed (Map and tables)
 - a. Geologic and hydrologic description of drainage basin
 - b. Amount of water available, by months
 - c. Quality of water
3. Soils
 - a. Soil map of the Jean Rabel River valley delimiting land suitable for irrigation
 - b. Characteristics (including profile descriptions, productivity, permeability, water-holding capacity, etc.) and management needs of the soil units shown on the map (Tables)
 - c. Grouping of the soil units according to their suitability for irrigation (area and distribution).
4. Population and living conditions (Map and tables)
 - a. Population distribution (density, age, sex, etc.)
 - b. Nutrition and health (diet, domestic water, medical facilities, malaria control, etc.)
 - c. Housing
 - d. Schools (location and enrollment) and literacy, especially in relation to the introduction and use of improved agricultural methods.
5. Local government administration
6. Economic infrastructure
 - a. Transportation (roads, water, air, and telecommunications)
 - b. Extension Services
 - c. Agricultural supplies (seeds, fertilizer, pesticides, etc.)
 - d. Agricultural credit

- C. Proposed Jean Rabel irrigation system
 - 1. Detailed map of the proposed irrigation system showing intake (s) and distribution system
 - 2. Detailed description of design (Drawings)
 - 3. Construction materials
 - 4. Manpower and equipment
 - 5. Supervision of work
 - 6. Cost estimates
 - 7. Operations, maintenance, and management

- D. Benefits from proposed irrigation system
 - 1. Number and size of farms and labor supply
 - 2. Land use, water use by crops, and crop yields
 - 3. Livestock - kinds, number, and production
 - 4. Management practices and inputs
 - a. Seeds and plants, fertilizers, pesticides, etc.
 - b. Equipment and power-hand, animal, and motorized (tractors and trucks)
 - 5. Production retained for family consumption
 - 6. Markets and prices
 - 7. Gross and net returns
 - a. Rents and value of land
 - 8. Economic infrastructure
 - a. Extension Services
 - b. Agricultural supplies
 - c. Agricultural credit
 - d. Agricultural processing industries
 - e. Transportation and communications
 - 9. Tangible irrigation benefits - economic, food supply, local employment, etc.

10. Intangible benefits - domestic water, improved living standards (health, housing, schools and literacy, etc.)
11. Attitude of local people toward improvement of irrigation system

E. Economic analysis

1. Costs
 - a. Construction
 - b. Operation and maintenance
2. Benefits
3. Charges for water
4. Economic justification
5. Environmental impact

IV PREFEASIBILITY STUDIES OF PROMISING AREAS FOR IRRIGATION OR IMPROVEMENT OF IRRIGATION.

- 2.2 As will be noted, the outline has four sections. The first section includes the assignment given to J.G. White, a brief status of irrigation in Haiti and background information concerning climate, water availability for irrigation, soils, agriculture, population and food supply, social conditions, and economic infrastructure. Section two will report work done in rehabilitating the Dubreuil irrigation system. Section three will report on the feasibility of rehabilitating and improving the Jean Rabel irrigation system. Section four will include reports of our prefeasibility studies of selected and promising areas in Haiti for new irrigation or improvement of existing irrigation. It is felt that this report outline will be a useful tool and furnish terms of reference for the team in data accumulation.

III OPERATIONS

TASK A

- 3.1 [The "hold order" on the Dubreuil Irrigation System Rehabilitation was rescinded by USAID and the J.G. White Engineering Corporation was instructed to proceed.

As the team work-schedule was established on a "hold" of work at Dubreuil, no plans to start the project in Januar, had been included. Start-up of Dubreuil is now scheduled for February first.)

TASK B

- 3.2 Jean Rabel Feasibility Study.

While the team did not return to the field on this task during the month of January, considerable progress was made in several areas.

Data concerning rainfall, humidity, temperature, mass radiation, insolation, evaporation and evapotranspiration, and winds in Haiti were secured and tabulated. This information is essential to adequately evaluate and to plan the Jean Rabel irrigation system.

The first results from soil samples taken in December were received and collated with visual field analysis.

Preliminary sketch maps based on aerial photography were made suggesting possible diversion sites and alternate canal locations.

TASK C

- 3.3 A possible list of selected Task C projects was received from USAID.

USAID PROPOSAL
COMMUNITY IRRIGATION SYSTEM
PRE-FEASIBILITY STUDIES

<u>AREA</u>	<u>NUMBER OF SYSTEMS</u>	<u>HECTARES</u>	
Jacmel	9	1040	
Thomazeau	5	880	
Nord-Ouest	2	150	
Aux Cayes	13	<u>4000</u>	
			6070

<u>AREA</u>	<u>SYSTEM NAME</u>	<u>HECTARES</u>	
<u>Jacmel</u>	Lavaneau	107	
	Orangers	72	
	Meyers	119	
	Cayes Jacmel	31	
	Marigot	98	
	Pedernales	342	
	Peredo	<u>37</u>	
			806
<u>Thomazeau</u>	Duthil	492	
	Manneville	110	
	Fond Parisien	<u>36</u>	
	(Lastic)		638

<u>AREA</u>	<u>SYSTEM NAME</u>		<u>HECTARES</u>
Nord-Ouest	Môle St. Nicolas	+	50
	Baie de Henne	+	<u>100</u>
			150
<u>Aux Cayes</u>	Moreau - Fonfrade		113
	Chantal		304
	Perigny (Torbeck)		800
	St Louis du Sud		93
	Port à Piment		208
	Les Anglais		895
	Avezac		<u>1290</u>
			3703

3.4 The team returned to the two projects in the Thomazeau area for additional field information, Duthil and Manneville it is the consensus of the team that these two projects are feasible but should be considered as one joined project and rated "A". A full report is being prepared and will be submitted in an advanced draft form for immediate consideration.

3.5 FOND PARISIEN - LASTIC

The soils and irrigation team members returned for a second visit to this interesting irrigation system. A full report on this project is being prepared and will be submitted in draft form.