

## VII WATERWORKS & SEWERAGE/WATER RESOURCES MANAGEMENT

Project Title: A PRELIMINARY STUDY ON APPROPRIATE DRAINAGE AND SEWERAGE SYSTEMS FOR A SECTION OF CEBU CITY

Name and Address of Principal Investigator: Engr. Fredesvinda B. Dura  
San Miguel Foundation Professorial  
Chairholder  
Chemical Eng'g. Dept.  
U S C, Cebu City

Project Description: This pilot study is designed in such a way as to allow the researchers to project environmentally and economically acceptable public sewerage and treatment systems in Cebu City and Mandaue which would accommodate not only domestic sewage but also industrial waste discharges and storm run-off. In order to be able to make these projections, the pilot study will ascertain the quality and quantities of industrial wastes, domestic sewage and storm run-off in the barrios of (Nasipit) Talamban, Kasambagan, Mabolo, Casuntingan, Banilad, Cabancalan, Maguikay, Subangdaku, Tipolo and Bakilid as well as the adequacy — or inadequacy — as the case realistically may be — for handling their present waste-discharge burden.

Project Cost: Estimated ₱ 15,000.00

Source of Funding: USC Water Resources Center  
Research and Faculty Development Office  
International Development Research Center -- Canada

Cooperating Agencies: Mandaue City Planning Office  
Delft University  
USC Chemical Eng'g. Dept.

Date Started: July 15, 1979

Expected Date of Completion: November 15, 1980

Present Status of Project: on the stage of preparing the report

Project Title: WATER MANAGEMENT IMPROVEMENT IN THE PHILIPPINES

Name and Address of Principal Investigator: Sebastian L. Julian  
NIA Central Office

Cooperating Agencies: National Irrigation Administration (NIA)

Date Started: August 31, 1976

Date of Completion (for completed projects): 1979

Project Title: INTEGRATED WATER MANAGEMENT STUDIES IN THE  
SELECTED NIA FIELD SITES

Name and Address of Principal Investigator: Sebastian L. Julian  
NIA CENTRAL OFFICE

Cooperating Agencies: National Irrigation Administration (NIA)

Date Started: 1974

Date of Completion (for completed projects): 1975

Project Title: MAN-LAND RELATIONS AS BASIS FOR SOIL AND WATER  
RESEARCH AND EXTENSION STRATEGIES

Name and Address of Principal Investigator: Mauricio D. Leonor Jr.  
College of Agriculture

Cooperating Agencies: University of the Philippines at Los Banos (UPLB)

Date Started: July 1, 1974

Date of Completion (for completed projects): 1976

Project Title: WATER MANAGEMENT STUDIES FOR UPLAND CROPS

Name and Address of Principal Investigator: Honorato Angeles

Cooperating Agencies: Central Luzon State University

Date Started: March 1975

Date of Completion (for completed projects): 1979

Project Title: CHARACTERIZATION OF WATERSHEDS IN THE PHILIP-  
PINES

Name and Address of Principal Investigator: Romeo C. Bruce  
UP College of Engineering

Cooperating Agencies: UP System (Diliman)

Date Started: January, 1974

Date of Completion (for completed projects): March 1975

Project Title: WATER MANAGEMENT STUDIES FOR UPLAND CROPS

Name and Address of Principal Investigator: Abraham A. Caoili  
College of Agriculture

Cooperating Agencies: University of the Philippines at Los Banos (UPLB)

Date Started: July 1974

Date of Completion (for completed projects): 1977

Project Title: WATER RESOURCES AND WATER RELATIONS

Name and Address of Principal Investigator: Abraham A. Caoili

Cooperating Agencies: University of the Philippines at Los Banos (UPLB)

Date Started: March 1974

Duration or Expected Date of Completion: 1977

Project Title: WATER MANAGEMENT ON CROPPING SYSTEMS

Name and Address of Principal Investigator: Wilfredo P. David

Cooperating Agencies: University of the Philippines at Los Banos (UPLB)  
Date Started: March 1975  
Date of Completion (for completed projects): 1976

Project Title: LOW-COST DRILLING OF DEEP WELLS BY LOW SPEED ROTARY DRILL

Name and Address of Principal Investigator: James F. Adams, FMS  
Notre Dame of Marbel College.  
Koronadal, South Cotabato

Description of the Project: Adaptation of a US-made rotary drilling apparatus to local needs. It includes fabrication of drill bits and arms from local materials and drilling 1 or 2 wells 4" x 300' at operational cost of ₱ 1.50 / foot.

Project Cost and Source of Funding: ₱ 10,000 — Notre Dame of Marbel College  
Cooperating Agencies: United States Peace Corps, Government of Australia, Government of Canada

Date Started: October 1, 1980

Duration or Expected Date of Completion: Feb. 1, 1981

Present Status of Project: 75 % complete

Other Relevant Information: Local well drillers are already requesting assistance / technical guidance in the fabrication of similar low-cost rotary drills.

Project Title: MANILA SILTATION INVESTIGATION STUDY

Name and Address of Principal Investigator: The Study is being executed by Philippine Posts Authority engineers and surveyors under the supervision and direction of: Dr. Ing. Wilhelm Dursthoff — as the Expert  
Capt. Serafin S. de Guia — Investigation Supervisor

Description of the Project: The Study involves mainly the following:

- a) establishment of survey control stations and benchmarks
- b) float tracking for surface current (wind-induced)
- c) under-current measurement using current meter
- d) hydrographic surveying with an echo-sounder
- e) wind velocity and direction measurement
- g) retrieving and analyses of water and soil samples

The areas to be investigated are: 1) the harbor basin, including the channel entrances of the Manila International Port (MIP), 2) the mouth of the Pasig River offshore as far as the western entrance to MIP, and 3) other areas proximate to MIP which may influence the objectives of the Study, the aforementioned measurements shall be executed on these areas for a period of one year.

The Study shall provide answers to the following:

- a) What hydraulic phenomenon causes siltation in the Manila International Port?
- b) What rate of siltation will be expected?
- c) What will be the annual volume of maintenance dredging to be done?
- d) Whether to close or leave open the breakwater gaps?

**Project Cost and Source of Funding:** The Study is being partly financed under a DM 300,000 Grant extended by the Kreditanstalt fuer Wiederaufbau (KfW) of West Germany. PPA provides the local peso counterpart fund which is estimated at P 1.40 million.

**Cooperating Agencies:** PPA is being supported in the execution of the Study by the following:

- a) Consultants — Salzgitter Consult GmbH (SCG) of W. Germany and Basic Technology and Management Corporation (BASICTEAM) of the Philippines. The Expert is from SCG while the investigation Supervisor comes from BASICTEAM.
- b) Ministry of Public Works — provides one (1) surveyor and a survey boat.
- c) Bureau of Coast and Geodetic Survey — helps in providing some of the survey instruments and past records on tides currents.

**Date Started:** The Study officially started on 22 March 1980.

**Duration or Expected Date of Completion:** The Study shall be completed within sixty-six (66) weeks under normal condition from commencement of work.

**Present Status of Work:** Actual field survey work started during the third week of May 1980 and shall continue for a full-year cycle.