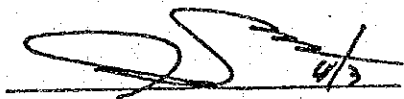


2. 1/A

IMPLEMENTING ARRANGEMENT
ON
THE TECHNICAL COOPERATION
BETWEEN
THE JAPAN INTERNATIONAL COOPERATION AGENCY
AND
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
FOR
THE STUDY OF ILOG-HILABANGAN RIVER BASIN FLOOD CONTROL PROJECT

REPUBLIC OF THE PHILIPPINES

AGREED UPON BETWEEN
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
AND
JAPAN INTERNATIONAL COOPERATION AGENCY



MANUEL M. BONOAN
Assistant Secretary
for Planning
Department of Public Works
and Highways (DPWH)



SHIGEHIRO FURUI
Team Leader
Preliminary Study Team
The Japan International
Cooperation Agency (JICA)

03 November 1989

I. INTRODUCTION

In response to the request of the Government of the Republic of the Philippines (hereinafter referred to as "GOP"), the Government of Japan (hereinafter referred to as "GOJ"), has decided to conduct the Study on the Ilog-Hilabangan River Basin Flood control (hereinafter referred to as "the Study"), and exchanged the Note Verbales with GOP concerning the implementation of the Study.

The Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programs of GOJ, will undertake the Study, in accordance with the relevant laws and regulations in force in Japan.

On the part of GOP, the Department of Public Works and Highways (hereinafter referred to as "DPWH") shall act as counterpart agency to the Japanese Study Team and also as coordinating body in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.

The present document constitutes the Implementing Arrangement between JICA and DPWH under the above-mentioned Note Verbales exchanged between the two governments.

II. OBJECTIVE OF THE STUDY

The objectives of the study are:

- 1) To formulate the Master Plan on flood control in the Ilog-Hilabangan River Basin and to identify priority projects.
- 2) To conduct the Feasibility Study on the selected flood control project.

III. STUDY AREA

The study area shall cover the Ilog-Hilabangan River Basin with an area of approximately 2,100 sq. km., as shown in Annex I.

IV. SCOPE OF THE STUDY

The Study shall include followings:

(1) DATA COLLECTION AND REVIEW OF PREVIOUS STUDIES

- 1) topographic maps and related maps
- 2) national and regional socio-economic data
- 3) data on meteorology and hydrology
- 4) soil and geological data
- 5) existing riparian facilities and other relevant facilities
- 6) river and its water utilization
- 7) present land use and assets
- 8) past floods and their damages
- 9) other related data and information

(2) FIELD SURVEY

- 1) field reconnaissance
- 2) longitudinal and cross sectional river survey
- 3) construction material test
- 4) topographic mapping of selected areas

(3) STUDY AND ANALYSIS

- 1) hydrological and hydraulic analysis
- 2) flood damage analysis
- 3) sedimentation study
- 4) water resources potentials study

(4) FORMULATION OF MASTER PLAN

- 1) formulation of master plan on flood control in Ilog-Hilabangan River Basin
- 2) identification of a flood control project to be urgently implemented

(5) FEASIBILITY STUDY ON AN URGENT FLOOD CONTROL PROJECT

- 1) supplementary survey and analysis for feasibility study
- 2) alternative study
- 3) preliminary design of the required facilities
- 4) estimation of construction cost
- 5) project evaluation (cost and benefit)
- 6) social and environmental impact

V. STUDY SCHEDULE

The Study will be executed in accordance with the attached tentative schedule Annex II.

VI. REPORTS

JICA shall prepare and submit the following reports in English to GOP:

- 1) Inception Report
Thirty (30) copies at the commencement of the field survey
- 2) Progress Report I
Thirty (30) copies within ten (10) months after the commencement of the Study
- 3) Interim Report
Thirty (30) copies within fourteen (14) months after the commencements of the Study
- 4) Progress Report II
Thirty (30) copies within sixteen (16) months after the commencement of the Study
- 5) Draft Final Report
Twenty (20) copies within twenty (20) months after the commencement of the Study

GOP will provide JICA with its comments on the Draft Final Report within thirty (30) days after the receipt of Draft Final Report.

- 6) Final Report
Fifty (50) copies within two (2) months after JICA's receipt of the said comments on the Draft Final Report.

VII. UNDERTAKING OF GOP

In accordance with the Note Verbales exchanged between GOJ and GOP, shall accord privileges, immunities and other assistance to the Japanese Study Team and, through the authorities concerned, take necessary measures to facilitate the smooth conduct of the Study.

1. a) GOP shall be responsible for dealing with claims which may be brought by third parties against the members of the Japanese Study Team and shall hold them harmless in receipt of claims and liabilities arising in the course of, or otherwise connected with the discharged of their duties in the implementation of the Study, except

When such claims or liabilities arise from gross negligence or willful misconduct of the above-mentioned members.

- b) GOP shall secure the safety of Study Team during the implementation of the Study.
2. DPWH shall, at its own expense, provide the Japanese Study Team with the following, if necessary, in cooperation with other agencies concerned:
- a) Available data and information related to the Study,
 - b) Counterpart personnel and support staff necessary for the Study,
 - c) Suitable office space in the Metro Manila and study area,
 - d) Credential or identification cards to the members of the Japanese Study Team.
3. DPWH shall make necessary arrangements with other governmental and non-governmental organizations concerned for the following:
- a) To secure the safety of the Japanese Study Team;
 - b) To permit the members of the Japanese Study Team to enter, leave and sojourn in the Philippines for the duration of their assignment therein;
 - c) To exempt the members of the Japanese Study Team from taxes, duties, fees and other charges on equipment, machinery and other materials brought into the Philippines for the conduct of the Study;
 - d) To exempt the members of the Japanese Study Team from income tax and other charges of any kind imposed on or before in connection with any emolument or allowance paid to the members of the Japanese Study Team for their services in connection with the implementation of the Study;
 - e) To provide necessary facilities to the Japanese Study Team for remittance as well as utilization of the funds introduced into the Philippines from Japan in connection with the implementation of the Study;
 - f) To secure permission for entry into private properties or other areas for the conduct of the Study;
 - g) To secure permission to take all data and documents (including photographs) related to the Study out of the Philippines to Japan by the Japanese Study Team.
 - h) To provide medical services as needed and its expenses will be chargeable on the members of the Japanese Study Team.

VIII. UNDERTAKINGS OF GOJ

In accordance with the Note Verbales exchanged between GOJ and GOP, through JICA, shall take the following measures for the implementation of the Study.

1. To dispatch, at its own expense, a Study Team to the Philippines
2. To pursue technology transfer to the Philippine counterpart personnel in the course of the Study, by way of trainings in the Philippines and in Japan.

IX: CONSULTATION












JICA and DPNH shall consult with each other in respect of any matter that may arise from or in connection with the Study.

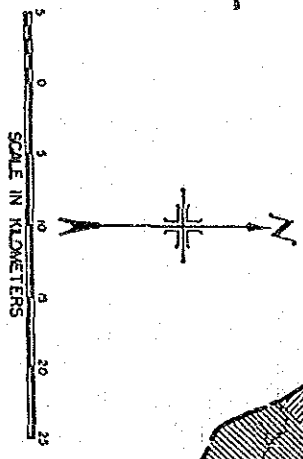
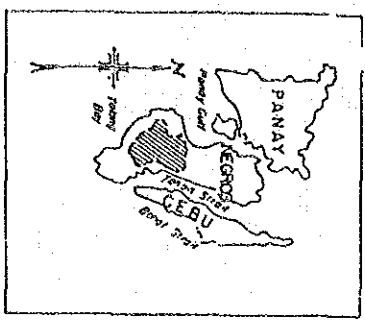
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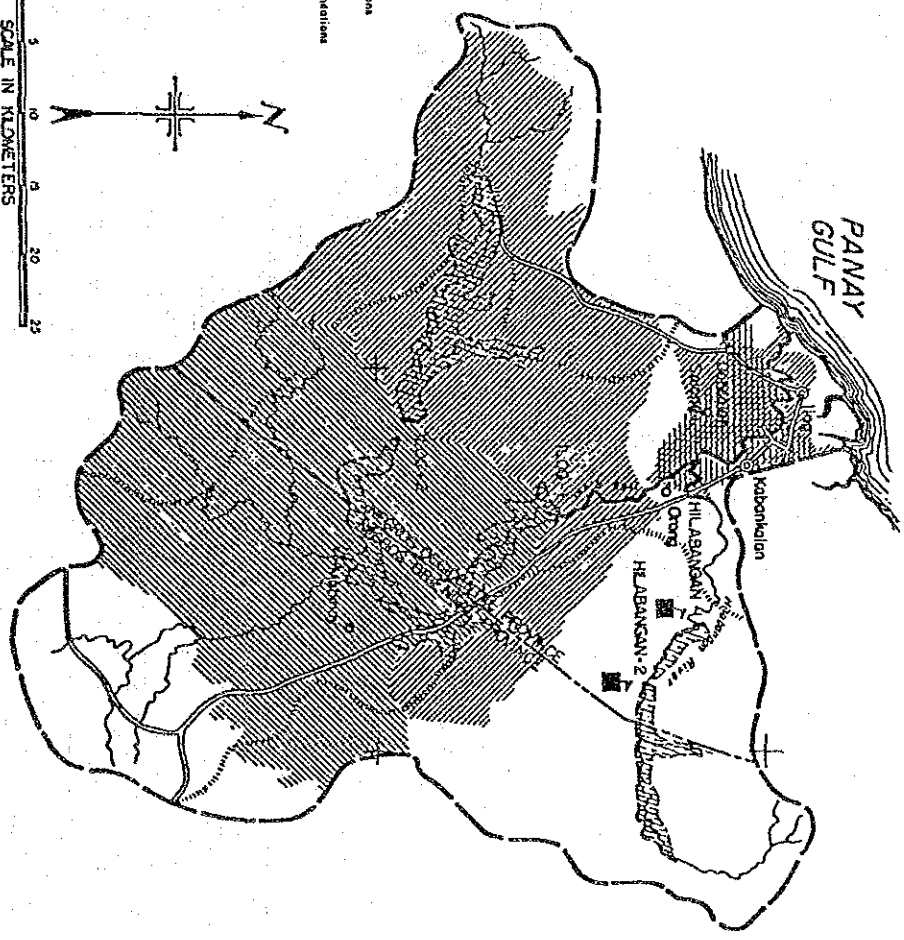
ANNEX I

EXPLANATION:

-  River Basin Boundary
-  Provincial Boundary
-  Road
-  Administrative Feasibility
-  Potential Hydropower Site
-  Potential Dam and Reservoir Site
-  Soils suitable for irrigation
-  Soils not suitable for irrigation due to soil limitations
-  Soils not suitable for irrigation due to topographic limitations
-  Soils not suitable for irrigation
-  Proposed National Irrigation System



ILOG - HILABANGAN RIVER BASIN
GENERAL MAP



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ANNEX - II

TENTATIVE SCHEDULE

MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
STUDY IN PHILIPPINES	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
STUDY IN JAPAN	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
REPORTS	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
IC/R																						
P/R-I																						
IT/R																						
P/R-II																						
DF/R																						
F/R																						

(Remarks) IC/R : Inception Report
 IT/R : Interim Report
 @ : Comments

P/R : Progress Report
 DF/R : Draft Final Report
 F/R : Final Report





(10)

3 . M / M

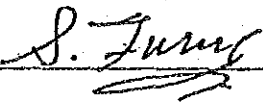
MINUTES OF MEETING
FOR
THE STUDY ON ILOG-HILABANGAN RIVER BASIN
FLOOD CONTROL PROJECT

IN
THE REPUBLIC OF THE PHILIPPINES

AGREED UPON BETWEEN
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
AND
JAPAN INTERNATIONAL COOPERATION AGENCY



MANUEL M. BONOAN
Assistant Secretary
for Planning
Department Of Public Works
and Highways (DPWH)



SHIGEHIRO FURUI
Team Leader
Preliminary Study Team
The Japan International
Cooperation Agency (JICA)

03 NOVEMBER 1989

In connection with the Implementing Arrangement of the Study on Ilog-Hilsbangan River Basin Flood Control Project (hereinafter referred to as "the Study"), the following major issues were discussed between the Preliminary Study Team (hereinafter referred to as "The Team") and DPWH:

1. For the hydrological observation, the Team pointed out the necessity of establishing stations, namely nine (9) stations for hourly rainfall gauge, three (3) stations for gauge water level and some stations (to be identified later) for flood discharge observation.

JICA will provide the hydro-meteorological equipment such as automatic rainfall gauge, water level staff gauge and/or automatic recorder, and bear the necessary expenses for their installation (civilworks). In case the existing hydro-meteorological facilities are not operational, JICA will, in addition, provide the necessary replacements.

DPWH shall bear the necessary expenses for the observations and maintenance and take responsibility for the measurement thereof.

2. The following required topographic surveys and construction materials investigation for the Study shall be borne by JICA.

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MASTER PLANNING STAGE:

- a. Aero-photo-mapping including establishment of ground controls
- b. Longitudinal profile and cross-section river surveys
- c. Construction materials investigation including laboratory test

FEASIBILITY STAGE:

Additional surveys and investigations that maybe required at this stage, such as:

- a. Topographic and river surveys including selected major structure sites;
- b. Necessary geologic sub-surface investigations including field sampling and laboratory test

3. DPWH agreed to provide the Study Team with the following, in cooperation with other relevant organizations:

- a. Preparation of data and documents specified in the questionnaire submitted by the Team before the Study begins.
 - b. Counterpart personnel for each member of the Study Team.
4. DPWH requested the Team to provide at least four (4) four-wheel drive type vehicles and necessary equipments for the Study.

DPWH expressed that they will provide drivers, fuel, and maintenance of the new vehicles.

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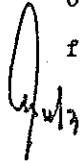
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5. The Team strongly requested DPWH to bear the necessary expenses for the sending of security officers to Tokyo Japan as required in the preparation of topographic maps. However, due to the budgetary constraints on the part of DPWH, DPWH requested the Team that the subject expenses shall be borne by JICA.

6. In reference to technology transfer, DPWH requested the Team to receive participants for technical training in Japan during the course of the Study.

7. The Team answered that the above request (Items 4,5 and 6) of DPWH will be presented to the JICA Tokyo Head Office for consideration.







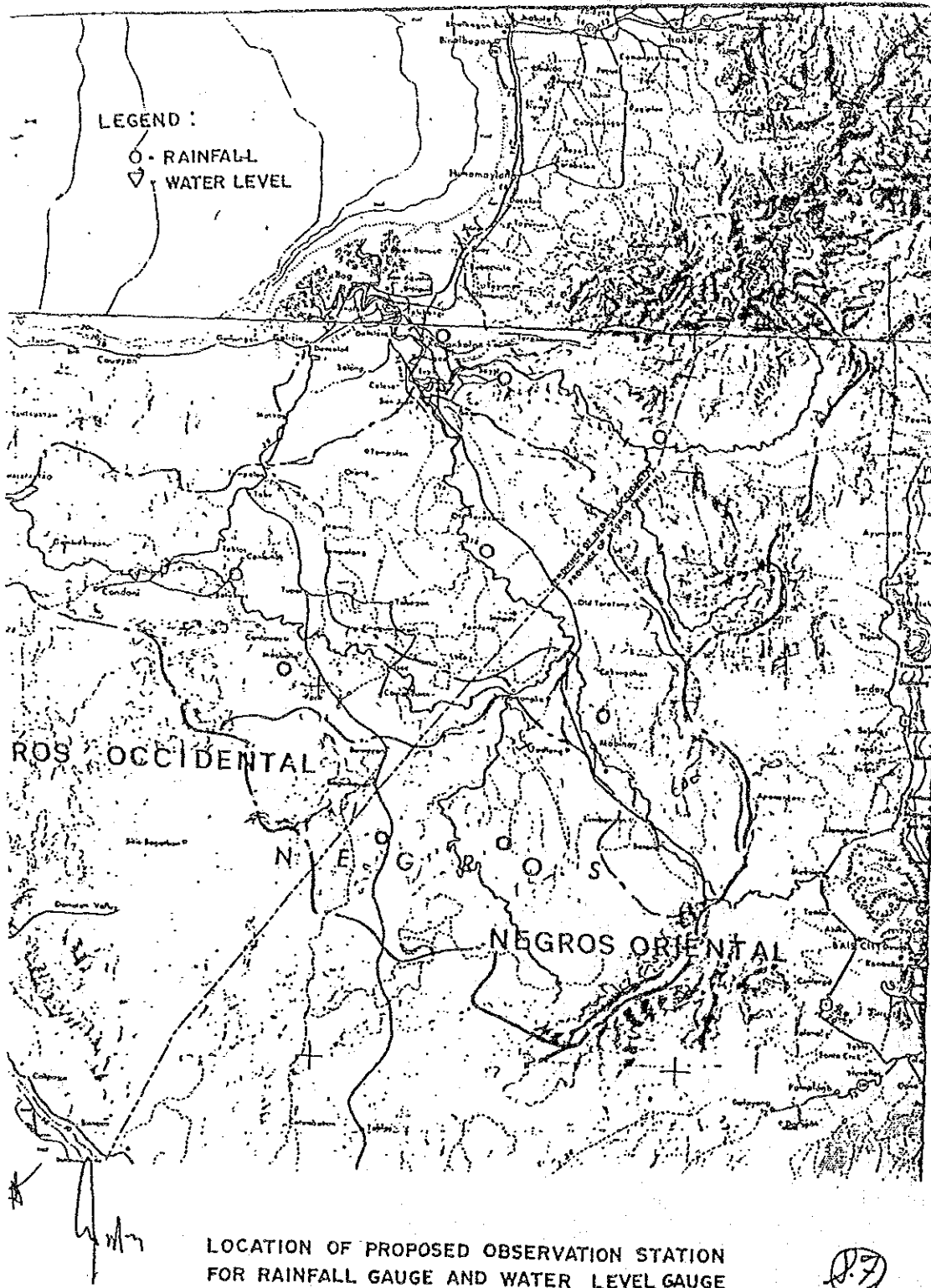
LIST OF ATTENDANTS

1. Philippine Side:

MANUEL M. BONOAN	- Asst. Secretary for Planning, DPWH
ANTONIO A. ALFASAN	- Project Manager V PMO- Major Flood Control Projects, DPWH
ROGELIO A. FLORES	- Project Manager III PMO-Major Flood Control Projects, DPWH
MANUEL S. ALCONIS	- Officer-In-Charge PED, Planning Service DPWH
CRISPIN B. BANAAG JR.	- Senior Project Planning Specialist PED, Planning Service DPWH
TOSHIKI KARAKAMI	- JICA Expert, DPWH

2. Japanese Side:

SHIGEHIRO FURUI	- Team Leader of the Preliminary Study Team JICA
TAKASHI SHINODA	- Flood Control Planning
AKIRA YAHAMOTO	- Hydrology, Hydraulics
KAZUHIKO TODA	- Cooperation Planning
MITSUAKI FURUKAWA	- Project Planning
TOYOTAKA NIWA	- Facility Planning



4. 収集資料リスト

4. 収集資料リスト

(1) 一般

- ① A Report on The Ilog-Hilabangan River Basin, Negros Island Philippines, Section. II General, Dec. 1966 USDIR
- ② Institution and Organization (PAGASA, DPWH, 3rd Dist. Offi./DPWH, NWRB NAMRIA, NIA)
- ③ Framework Plan ; Ilog-Hilabangan River Basin Chapter II. General. Chapter V. Existing and Future Development NWRC June 1979
- ④ Infrastructure Projects / Annual Budget by Category (1986-90) DPWH Oct. 1989
- ⑤ Organization Manual, DPWH 1989
- ⑥ Operation and Maintenance in 3rd Dist. Offi.
- ⑦ National Development Program (1987-1992)
- ⑧ Description of National Water Resources Board, NWRB
- ⑨ Description of National Economic and Development Authority, NEDA
- ⑩ Description of National Irrigation Administration, NIA
- ⑪ Annual Budget of NWRB in 1989, NWRB
- ⑫ Annual Budget of NEDA in 1989, NEDA
- ⑬ Annual Budget of NIA in 1989, NEDA
- ⑭ Profile of Kabankalan Municipality, Kabankalan Municipality Offi.
- ⑮ Comprehensive Development Plan 1983-1993, Ilog Municipality Offi.
- ⑯ Socio-Economic Profile of Negros Occidental, Pro. Offi.
- ⑰ The 15-Year Master Plan for The Province of Negros Occidental
- ⑱ Executive Summary of The Province of Negros Occidental
- ⑲ Steps and Prosedure for Project Funding, DPWH

(2) 地形・地質

- ① 流域地形図 縮尺 1:50,000 (1950年代撮影) 13枚組、NAMRIA
- ② ネグロス全島地形図 縮尺 1:50,000 (1950年代撮影) 3枚組、NAMRIA
- ③ A Report on The Ilog-Hilabangan River Basin, Negros Island Philippines, Section II. General, Dec. 1966 USDIR
- ④ Framework Plan ; Ilog-Hilabangan River Basin Chapter IV. Water and Related Land Resources, NWRC June 1979

(3) 気象・水文

- ① A Report on The Ilog-Hilabangan River Basin, Negros Island Philippines, Section -II. General, Section - IV Hydrology Section- V. Future Program Dec. 1966 USDIR
- ② Meteorological and Hydrological Station at or near The Ilog-Hilabangan River Basin of PAGASA 1989 PAGASA
- ③ Destructive Typhoons (1982-1988) PAGASA
- ④ Daily Rainfall at Himamaylan in 1984 PAGASA
- ⑤ Framework Plan ; Ilog-Hilabangan River Basin Chapter IV. Water and Related Land Resources, NWRC June 1979
- ⑥ List of Stream Gaging Station
- ⑦ Daily Discharge Data at eight Stations along Ilog-Hilabangan River

(4) 洪水防御及び関連資料

- ① A Report on The Ilog-Hilabangan River Basin, Negros Island Philippines, Section -III. Potential Development, 1966 USDIR
- ② Framework Plan ; Ilog-Hilabangan River Basin Chapter II. General, Chapter V. Existing and Future Development (G. Flood Control) NWRC June 1979
- ③ List of Existing Communal Irrigation System as of June 1987, NIA
- ④ Project Profile of Hilabangan River Irrigation Project, NIA

(5) 図面

- ① 掌管地区道路網図 公共事業道路省ネグロスオキシデンタル州第3地区事務所
- ② General Topographic Layout Map of Hillabangan Communal Irrigation Project Map, Neg. Occ. Prov'l Irrigation Offi. 縮尺 1:20,000
- ③ Plan of Ilog Cut-off Channel No.1,2 & 3, 縮尺 1:4,000, June 1988 公共事業道路省ネグロスオキシデンタル州第2地区事務所
- ④ Map of Kabankalan & Ilog Municipalities showing Various Existing Proposed Construction of Infra Project of Ilog-Hilabangan River Control, 縮尺 1:20,000, 公共事業道路省ネグロスオキシデンタル州第2地区事務所

5. 基礎資料の賦存状況
(気象・水文，地形・地質，社会・経済，関連計画等)

5. 基礎資料の賦存状況

REQUIRED DATA AND QUESTIONNAIRE

1. General

1.1. National development plan (existing long-term plan or five year plan)
収集資料 (1)-⑦参照。

1.2. Regional development plans related to the Study
NEDA 又は PS/DPWH で入手可能。

1.3. National census related to the Study
NSO 又は PS/DPWH で入手可能。

1.4. Provincial Profile
収集資料 (1)-⑭⑰⑱参照。、Prov'l. Offi., HLRB, NEDAで入手可能。

1.5. Socio-economic conditions in and around the Ilog-Hilabangan

(1) Administrative district (city, town and village)

(2) Population and household

(3) Land use

(4) Infrastructure

a) Road condition

b) Transportation

c) Electricity

d) Telecommunication / postal service

e) Potable water supply

f) Wells

(5) Industry

(6) Agriculture (irrigation)

(7) Tourism and historical area

収集資料 (1)-⑭⑮⑯⑰⑱参照。 Municipality, Prov'l. Offi., HLRB, NEDAで入手可能。

1.6. Budget in the last five years

(1) National budget

(2) Flood control / Dam construction / Erosion control / Forestation (whole country)

(3) - ditto - (Ilog-Hilabangan river basin)

(4) Maintenance cost for road, bridges, flood control facility and etc.

収集資料 (1)-④参照。

(5) Annual Report of the DPWH
DPWHで入手可能。

1.7. Institution and Organization

(1) Structures and key function of the following organizations, their interrelations and their relations with other government agencies. A diagram shown interrelation of the organizations and other government agencies.

- a) National Economic and Department Authority (NEDA) NEDA
- b) Department of Public Works and Highway (DPWH) DPWH
- c) National Irrigation Administration (NIA) NIA
- d) National Power Corporation (NAPOCOR) NAPOCOR
- e) National Water Resources Board (NWRB) NWRB
- f) PAGASA PAGASA

(2) Their capitalization, budgeting and funding and their recent summarized financial statements

(3) Function and/or job-description of each division, section, and sub-section of the above organizations including the number of staff. For what work for project implementation, they are involved and how.

(4) Other agencies concerned with the projects, if any. Their key functions and government financial supports they receive.

(5) Any involvement of local government, their key functions and financial supports by government.

以上 收集資料 (1)-②④⑤⑧⑨⑩⑪⑫⑬参照。

(6) Budgetary system of the DPWH

Procedures required for project planning, budget preparation, internal screening and final approval.

收集資料 (1)-⑨参照。

1.8. Operation and Maintenance

(1) Organization structure for operation and maintenance

- a) Organization structure in the DPWH for O/M work
- b) Number and status of staff in charge, and their job-description in the district office of the DPWH
- c) Routine maintenance work done by the district office

(2) Operation and maintenance by the district office

- a) List of tools and equipment owned by the office
- b) Procedures taken to provide spare part when needs arise
- c) Who and how to repair the damaged parts of the facilities
- d) Inventory of the stock yards and work shops
- e) Number of motor vehicles owned by the office

以上 收集資料 (1)-⑥参照。

2. Topography and Geology

2.1. Topographic maps including the Ilog-Hilabangan river basin

- (1) Scale 1:250,000
- (2) Scale 1: 50,000 3449 I II, 3548 I IV, 3549 I II III IV,
3550 II III, 3649 III IV, 3650 III

以上 収集資料 (2)-①②参照。

- (3) Scale 1: 25,000
- (4) Scale 1: 5,000
- (5) Available maps related to the basin and effective for the study

以上 収集資料 (5)-①②③④参照。

2.2. Geological maps including the Ilog-Hilabangan river basin

- (1) Scale 1:250,000
- (2) Available maps related to the basin and effective for the study

DENR/BNG で入手可能。

2.3. Design drawings of the completed / on-going / proposed river improvement projects DPWH

- (1) Plan of river improvement
収集資料 (5)-③④参照。
- (2) Longitudinal profile and cross-section of river improvement
- (3) River width in major reaches or points
- (4) Channel depth in major reaches or points
- (5) Variations of river course and river bed in the past

DPWHは1950年代の地形図からの情報以上のものは整理していない。
「イログ・ヒラバンガン洪水防御及び水資源開発計画調査（昭和62年8月国際建設技術協会が実施）報告書」に概略河川諸元がまとめられている。

2.4. Aerophotographs (the latest photos)

- (1) Photographing year
- (2) Scale of photographs
- (3) Scope of drawing
- (4) Scale of drawing
- (5) Interval of counter line
- (6) Control point (location and altitude)

- (7) Triangulation station
- (8) Permission for the Study Team to take them out of the Philippines to Japan

航空写真測量は、未だ実施されていない。

2.5. Soil mechanical data at major river structures

- (1) Boring log data
- (2) Ground-water survey
- (3) Permeability test
- (4) Seismic prospecting

DPWH/BRSの管管事項であるが、本事業に関係する土質関係の資料は残っていない。

2.6. Land use maps including the Ilog-Hilabangan river basin

- (1) Investigation / Publication year /
- (2) Scale: 1:25,000

HLRB/NEDA で Municipality毎の土地利用図が入手できる。

3. Climatic and Hydrological Data

3.1. Location map of meteorological and hydrological observation stations

- (1) Rain gauge stations 収集資料 (3)-②⑤参照。
- (2) Stream flow gauging stations 収集資料 (3)-⑤⑥参照。
- (3) Tide gauge stations ネグロス島では観測していない。
- (4) Flood warning stations 警報システムはない。

3.2. List of meteorological and hydrological observation stations

- (1) Station name
- (2) Location / address
- (3) Code number of station
- (4) Observation items
- (5) Period of observation
- (6) Authorities concernd

収集資料 (3)-②⑤⑥参照

3.3. General climate at major stations

- 3.4. Specific climate on rainfall, wind and tide ever recorded at major stations

以上の資料は、PAGASAで入手可能であるが、整理が必要。

- 3.5. Hyetograph of storms which caused major historical floods in the Study Area

DPWH

- (1) Hourly rainfall of major storm at major stations
- (2) Hourly hydrograph of major flood flow at major stations
- (3) Probable rainfall intensities for the duration of 1, 2, 3, 4, 6, 12, 18 and 24 hours
- (4) Isohyetal maps

ネグロス島で時間雨量が観測されているかどうかについては、未確認。

- 3.6. Water level and discharges at major stations

- (1) Monthly runoff
- (2) Annual maximum water level and discharge, and their frequencies
- (3) Hourly water level and discharge of major flood observed
- (4) Rating curve
- (5) Method of discharge observation
- (6) Authorities concerned

収集資料 (3)-⑦参照

過去に8か所の水位流量観測所があったが現在は水位観測所が1か所残っているだけである。

4. Flood Control and Relevant Information

- 4.1. Report, record and information on the past flood damage in the Basin

- (1) Occurrence year (2) Cause
- (3) Inundation area and damage to farm land and properties
- (4) Damaged flood control facilities and other infrastructure such as bridges, roads, railway, dams and irrigation weirs
- (5) Extent of damage

以上 収集資料 (3)-③、(4)-①②参照。

- 4.2. Fundamental policy for flood control program in the Basin
特に決まっていない。

- 4.3. Present condition of existing flood control facilities in the Basin
収集資料 (5)-②③参照。
- 4.4. Information regarding the completed / ongoing / proposed flood control projects in the Basin
(1) Project name
(2) Title and contents of project reports
収集資料 (5)-②③参照。
- 4.5. Information regarding the completed / ongoing / proposed dam construction projects in the Basin
(1) Project name
(2) Title and contents of project reports
収集資料 (5)-②③参照。
- 4.6. Information regarding the completed / ongoing / proposed river intake structures in the Basin
(1) Project name
(2) Title and contents of project reports
収集資料 (4)-④参照。
- 4.7. Reservoir operation rule for flood of existing dams in the Basin
流域内にダムはない。
- 4.8. Schematic diagram of river system showing design flood discharge and the catchment area in the Basin
河川改修計画は立案されていない。
- 4.9. Existing flood warning / evacuation system in the Basin
洪水警報システムはない。
- 4.10. Sediment observation record in the Basin
(1) Suspended sediment
(2) Silt sediment
(3) Riverbed material analysis
DENR/BFD及びDPWH/BRSが調査を実施しているようであるが、詳細は未確認。
- 4.11. Land conservation of the Basin
(1) Forestation
(2) Erosion control
(3) Record of landslides

DENR/BFDにて入手可能。

5. Others

5. 1. Environmental quality standard, especially for landscape, water quality and pollution
DPWH/BRSにて入手可能。
5. 2. Record of water quality
水質調査が実施されているか未確認。
5. 3. Seismological observation data PHILVOKSにて入手可能。
5. 4. Currency exchange rate CBPにて入手可能。
5. 5. Unit price and wages of construction workers
5. 6. Ability of contractors on the construction of hydrometeorological station or similar work
 - (1) Business record during the past 5 years
 - (2) Contract cost
5. 7. Ability of contractors on river survey
 - (1) Business record during the past 5 years
 - (2) Contract cost

以上の資料はDPWHにて入手可能。

6. 面談者リスト

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1. DPWH (Department of Public Works & Highway) Manila

Mr. Mannuel M. Bonoan	Asst. Secretary for Planning
Mr. Trino-Trinidad G Meris	Chief, Planning Service
Mr. Antonio A. Alpasan	Project Manager IV, Project Management Offi. (PMO)-Major Flood Control Project
Mr. Rogelio A. Flores	Project Manager III, PMO-Major Flood Control Project
Mr. Mannuel S. Alconis	OIC. Project Evaluation Div. (PED) Planning Service
Mr. Oscar L. Astravillo	Principal Architect, PED, Planning Service
Mr. Tony Alejo	Supv'g. C.E. II, PED, Planning Service
Mr. Napoleon s. Famadico	Supv'g. C.E. II, PED, Planning Service
Mr. Crispin B. Banaag, Jr.	Sr. Project Planning Specialist PED, Planning Service
Mr. Jess Arerilla	Sr. Economist, PED, Planning Service
Mr. Jose Savares	Exec. Sec. of the office of Mr. Bonoan

2. 3rd Engineering District, DPWH, Kabankalan, Negros Occidental

Mr. Marcial H. Arak	District Engineer (D.E.)
Mr. Florante Galvan	Asst. D.E.
Mr. Felipe A. Alilain, Jr.	Supv'g. Civil Engineer
Mr. Marcelino D. de los Reyes	Supv'g. Civil Engineer

3. NIA (National Irrigation Administration) Queson

Mr. Avelino S. Rivera	Director Project Development Department (PDD)
Mr. Clemente T. Alanano	Project Manager SRIP-PMO & WBIIP PDD
Mr. Abelardo Y. Armentia	Head Feasibility Studies & Environmental Section PDD
Mr. Rogelio dela Rosa	PDD
Mr. Jovito Navvarro	PDD
Mr. Romeo Gonzalyo	PDD

4. NIA Bago

Mr. Genaro V. Cacho, Jr.	Provincial Irrigation Officer Provincial Irrigation Office (PIO) Bago, Negros
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|---|--|
| Mr. Jerry E. Gigare | Irrigation Engineer, P10 |
| Mr. Ramon M. Faltiguera | Surveyer P10 |
| 5. NWRB (National Water Resources Board) | |
| Mr. Melchor G. Baltazar | Chief Water Resources Staff Officer |
| 6. BRS (Bureau of Research and Standards) DPWH | |
| Mr. Jose H. Espiritu | Director |
| Mr. Anacleps P. Espiritu | Head Civil Engineer, Hydrology Section |
| Mr. Felipe S. Ramos | Head Civil Engineer, Geotechnical Sec. |
| 7. NEDA (National Economic and Development Authority) | |
| Mr. Gevarado C. Villarino | Specialist Infrastructure Staff
Economic Division |
| 8. NAMRIA (National Mapping and Resource Information Authority) | |
| Mr. Col Mariaus N. Aquiler | Director, Administrative Division |
| 9. HLRB (Housing and Land Use Regulatory Board) | |
| Ms. Baby Pascasio | Secretary to the Commissioner |
| 10. PAGASA | |
| Dr. Leoncio A. Amadore | Chief, Flood Forecasting Branch
Dept. of Meteorology & Oceanography (DMO) |
| Ms. Margaret Bautista | Meteorologist II, DMO |
| 11. Negross Occ. Provincial Office | |
| Mr. Daniel L. Lacson, Jr. | Governor, Negros Occidental |
| 12. Munincipality | |
| | Mayor, Ilog Munincipality |
| | Vice Mayor, Ilog Munincipality |
| MR. Rogelio Diaz | Municipal Engineer, Kabankalan, Neg. Occ. |
| Mr. Macario L. Zafra, Jr. | Municipal Engineer, Ilog, Neg. Occ. |
| Mr. Higinio S. Garaygay | Liaison of Cong. Smarke Bacolod, Neg. Occ. |
| 13. Japanese Office / Expert Concerned | |
| Mr. Kouji Kaminaga | First Secretary, Embassy of Japan |

Mr. Moriya Miyamoto

Mr. Katuhiko Ozawa

Mr. Toshiki Kawakami

Mr. Sumio Ohoishi

General Manager, JICA Manila Office

Asst. Resident Representative

JICA Manila Office

JICA Expert, DPWH

JICA Expert, NIA

JICA