

Minutes of Discussions (March 6, 1997)

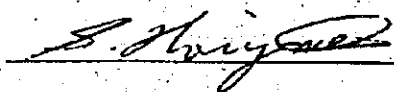
MINUTES OF DISCUSSIONS
ON
THE BASIC DESIGN STUDY ON THE PROJECT FOR
INFANTA IMPOUNDING IRRIGATION AND
ENVIRONMENTAL IMPROVEMENT
IN
THE REPUBLIC OF THE PHILIPPINES
(CONSULTATION ON DRAFT REPORT)

From October to November in 1996, the Japan International Cooperation Agency (JICA) dispatched a Basic Design Study Team on the Project for Infanta Impounding Irrigation and Environmental Improvement (hereinafter referred to as "the Project") to the Republic of the Philippines, and through discussions, field survey and technical examination in Japan, has prepared the draft report of the study.

In order to explain and to consult the Philippines side on the components of the draft report, JICA sent to the Republic of the Philippines a Basic Design Study Explanation Team, (hereinafter referred to as "the Team") which is headed by Mr. Shoshiro Horigome, Development Specialist, JICA with a schedule to stay in the country from February 26 to March 10, 1997.

As a result of the discussions, both parties confirmed the main items described on the attached sheet.

Lingayen, Pangasinan, March 6, 1997

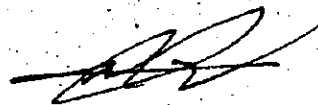


Mr. Shoshiro Horigome

Leader

Basic Design Study Explanation Team

JICA



Mr. Oscar M. Orbos

Governor

Province of Pangasinan

The Republic of the Philippines

ATTACHMENT

1. Components of the Draft Report

The Government of the Republic of the Philippines has agreed and accepted in principle the components of the draft report proposed by the Team.

2. Japan's Grant Aid System

- (1) The Government of the Republic of the Philippines has understood the System of Japan's Grand Aid explained by the Team, as described in ANNEX I.
- (2) The Government of the Republic of the Philippines will take the necessary measures described in ANNEX II, for smooth implementation of the Project on condition that the Grand Aid assistance by the Government of Japan is extended to the Project.

3 Further Schedule

The Team will make the final report in accordance with the confirmed items, and send it to the Government of the Republic of the Philippines by the end of April, 1997.

4. Other Relevant Issues

(1) Comments on the draft report from PGP(the Provincial Government of Pangasinan) :

The Team submitted some copies of the draft basic design study report and explained the contents. After discussion by exchanging the questions and answers, PGP agreed about all the project components (see Appendix 1 : Project Component), the basic design, and the implementation plan.

(2) ECC (Environmental Compliance Certificate)

PGP explained that EIS (Environmental Impact Statement) was already submitted to EMB (Environmental Management Bureau) of DENR (Department of Environment and Natural Resources) on Feb.14, 1997 and it is on the way of procedure for the issuance of ECC. The Team requested PGP to obtain ECC before the end of March. PGP agreed to follow up and secure the issuance of ECC in time.

ICC (Investment co-ordination Committee)

as confirmed for PGP to get the ICC approval through the NEDA as early as possible before the middle of April, 1997.

Relocation and Land acquisition

- 1) PGP explained that the field survey for confirming the actual areas of the proposed reservoir area (EL. 60m) and the proposed resettlement area was already completed.
- 2) PGP confirmed that the number of inhabitants to be relocated due to the Project implementation should be clarified and all the written agreements of them should be gotten until the end of March, 1997 by PGP. PGP promised to send the all written agreements to the Team through JICA Philippines office.
- 3) Written agreements for relocation obtained until March 6, 1997 is shown in Appendix 2. PGP recognised that the great more efforts should be made to get the remaining written agreements.
- 4) The Team answered, if the written agreements can not be obtained by the due time, the procedure of the Project will be delayed.
- 5) The Team reminded that some families have to relocate somewhere before the preparation of the resettlement area. For example, 4 or 5 houses located downstream side of the dam site have to be removed in the first year of dam construction. PGP answered that a special arrangement and care for the temporary resettlement houses would be taken in such cases.

) Number of Resettlers.

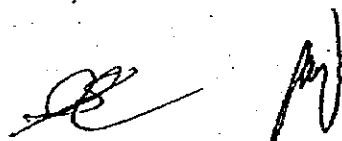
GP estimated the number of families to be resettled in the proposed resettlement area is as follows:

- | | |
|---|--------------|
| (a) from the reservoir area and surroundings | :20 families |
| (b) from the Pinatubo victims already living in the municipality of Infanta | :20 families |
| (c) from the Pinatubo victims in the refugee camp | :30 families |

(6) Operation and Maintenance

In regard to the operation and maintenance of structures/facilities, it is confirmed for PGP to take appropriate responsibility especially on the following points:

- 1) The existing three IA (Irrigators' Association) will be reorganized to a new IA which will be in charge of O & M (Operation and Maintenance) for irrigation facilities of the Project.
- 2) A competent person from PGP will be assigned for O & M of dam & reservoir. NIA or the other experienced agencies will assist in the guidance and training for O & M.
- 3) The maintenance of road will be carried out by the municipality of Infant aspects.
- 4) PGP entrusted PENRO (Pangasinan Environment and Natural Resources Office) to be the responsible agency for O & M for the nursery as well as the afforestation (see Appendix 3: Memorandum between PGP and PENRO). However the O & M activities will be carried out by the cooperative organization by PGP and PENRO/DENR. Both agencies will arrange the reliable staffing and budget preparation in accordance with the recommended plan. The agencies such as the municipality and PSU (Pangasinan State University) will occasionally join in the activities.
- 5) PGP will take special care for the successful resettlement activities by providing pertinent budget and manpower services.
- 6) PGP will submit a periodical (quarterly) report of O & M to the JICA Philippines office.



for at least two years after the completion of the project based on the O & M manual for the irrigation facilities which will be prepared during the construction period.

7) Implementation or procurement by PGP

The implementation or procurement to be carried out by PGP confirmed as follows:

- 1) Construction of the secondary and tertiary irrigation canals simultaneously with main canals.
- 2) Construction of some facilities and procurement of some equipment for the tree nursery simultaneously with the construction of main structure & facilities.
(See Appendix 4 share for the nursery preparation).
- 3) Afforestation activities based on the schedule recommended by the Team in the report for the whole catchment area of the proposed dam.
- 4) Construction of houses in infrastructure including power supply for the resettlement area simultaneously with the construction of road, water supply facilities and distribution canals for the area.
- 5) Construction of secondary and tertiary canals and fanning land preparation in the resettlement area simultaneously with the main and distribution canals for the area.
- 6) Construction of a garage for the equipment to be procured for the maintenance of the roads in the Project area.

(8) Others

- 1) PGP requested the Team to dispatch a Japanese Volunteer for the technical guidance to the reliable implementation of afforestation activities. The Team answered that the request will be transmitted to the JICA head office.
- 2) The Team reminded in regard to the resettlement that necessary guidance would be provided not only for the communication and cooperation between the resettlers coming from the other provinces and local people but also for the technical assistance for those who would not have sufficient experience of agriculture and irrigation.
- 3) The Team reminded that the budget preparation by PGP of the implementation and



O & M would be a key factor for the successful results of the project. PGP answered that the sufficient budget will be prepared on time in accordance with the expenses estimated by the Team.

- 4) The organization for the implementation as well as for O & M was already established by PGP and the cooperative agencies. The Team reminded that it is necessary for PGP to re-establish a functionable coordination in the organization and follow up the effective operation as some cooperative agencies do not show any positive activities yet. PGP answered that the organization will be reviewed, strengthened if necessary, and arranged to be more functionable & practical one.
- 5) PGP asked about the training, especially for O&M of dam facilities, in Japan requested in last October. The Team informed that the JICA head office did not decide yet.
- 6) The Team requested again that the project manager of PGP should have corresponding authority for taking responsible and prompt action for the smooth progress of the project implementation. PGP answered that some improvement will be taken soon and inform the matter to the Team.

Appendix 1 : Project Component (Main Features)

Dam & Reservoir

Reservoir	Total Volume	8,411,000m ³
	Effective Volume	8,000,000m ³
	Design Flood W. L.	EL 59.0m
	Normal High W. L.	EL 57.0m
	Low W. L.	EL 37.0m
Dam	Type	Center Core Fill Type Dam
	Dam Height	40.0m
	Crest Length	330.0m
	Crest Width	7.0m
	Dam Volume	423,000m ³
	Crest Elevation	EL 61.0m
Floodway	Type	Ungated side channel type
	Design Discharge	350m ³ /s
Intake	Type	Inclined type
	Gate	Diameter 600mm, 4Nos.
	Energy Dissipater	Sluice Valve Diameter 600mm, 2 Nos.
	Conduit	Steel Pipe 1,800 mm in diameter

Irrigation Canal

Irrigation Area	1,280 ha (Including 100 ha of resettlement area)
Main Canal	9 System, 21.6 km in total (New canal 14.5 km and improved canal 7.1 km) With Inspection road (4m wide, gravel pavement of 3m wide)
Appurtenant structures	Canal Structure (Open canal, Conduit pipe, Drop, Road crossing) Diversion/Gauging Structure (Large diversion , small diversion, Gauging stru.) Energy Dissipater Inspection & maintenance (Inspection road, Aqueduct) Others (Washing step, Drainage conduit)

Road & Bridge

Barangay Road	7.2 km in total length (Improvement road : 3 routes, 5.3 km in total)
---------------	--

and New road: 1 route, 1.9 km in total)
 Appurtenant stru.: Road bridge (Span 18 m , 2 locations. ,
 2nd class bridge box culvert type) and
 Submerged bridge (Crossing Sanfelipe river, 2 locations)
 Reservoir surrounding road 16.8 km in total length
 (Newly constructed section : 13.4 km,
 Improvement section: 3.4 km)
 Appurtenant structure (Submerged bridge : 3 locations.
 and Crossing culvert : approxi. 10 locations)

Resettlement Area

Area Approx. 220 ha
 (Rainfed area: 100 ha, Irrigated area : 100 ha, and Residential area : 20 ha)
 Appurtenant Stru./Works Access Road (400 m in length, 5 m wide gravel road)
 Road in the housing area (2,090 m in length, 5 m wide concrete road)
 Water Supply Facility (Intake, Conduit pipe, Purification facilities,
 Distribution pipe, water supply tap)
 Canals (Diversion gate : 4 Nos., Canal : 3.25 km in total)

Tree Nursery

Area 2.35 ha
 Nursery Facility Pot Nursery Bed : Area 8,160 m² (Pot nursery net area 4,320m²)
 Irrigation water facility (Objective Area 4,320 m²)
 Water Storage
 Road : 672 m in total length (5 m wide with side ditches)

Post - Harvest Facilities

Solar Dryer Yard Area 875 m² (25m x 35m), 8 Locations
 Concrete Pavement (15 cm thick),
 With Store house (5m x 8m)

Maintenance Equipment

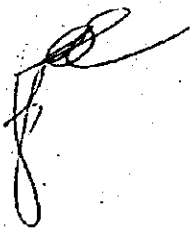
Motor grader (3.7m Class) 1 No.
 Dump truck (11t Class) 1 No.



Appendix 2 : Agreement for Relocation

1. Agreement of Land Owners for Main Canal Construction
2. Agreement of Land Owners to provide their lands in the proposed Resettlement Area
3. Agreement for Resettlement from the Inhabitants in the proposed Reservoir Area

Note : The number of people signed in each agreement is more than the necessary number estimated at present because some additional people also signed on the paper in consideration of future necessity.

A handwritten signature in black ink, appearing to be a stylized name or set of initials, located in the lower-left quadrant of the page.



Republic of the Philippines
Province of Pangasinan
MUNICIPALITY OF INFANTA



OFFICE OF THE MUNICIPAL MAYOR

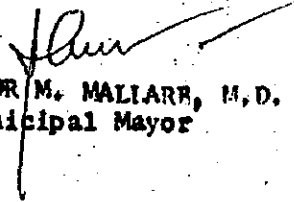
A G R E E M E N T

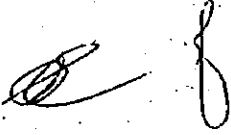
WE, the undersigned land owners to be affected by the construction of the main canals of the Infanta Water Impounding and Environmental Project at Barangay Bamban, Infanta, Pangasinan, are very willing to give our lands provided, however, that we will be compensated accordingly.

Beatriz M. Mucano
Eloilo M. Monte
Edna Mae M. Mone
Elza M. Mayo
Fernando Ballado
Lilimar Maje
Isidoro Bernabe
Lea Fanoche
Florinda Bernabe
Elisa Lopez
Florencia Melgar

Arnel Ballado
Clemencia Ballado
Jessie Mador
Edmar Mayo
Sebastian Bonel
Salvador Bonel
Arnold Mayo
Eduin Madero
Robert Mayo
Penilda Mayo

Witnesses:


MELCHOR M. MALIBAR, M.D.
Municipal Mayor


ANACLETO M. MONTERO, SR.
Barangay Captain



Republic of the Philippines
Province of Pangasinan
MUNICIPALITY OF INFANTA

—o—o—

OFFICE OF THE MUNICIPAL MAYOR


AGREEMENT

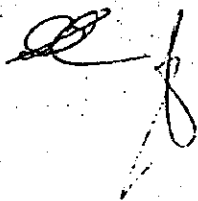
WE, the undersigned land owners to be affected by the establishment of the Resettlement Area due to the Construction of the Infanta Water Impounding and Environmental Improvement Project at Barangay Bamban, Infanta, Pangasinan, are very willing to give our lands provided, however, that we will be justly compensated.


Cynthia M. Mirador
Juan S. Flores
Beatriz M. Pians
Pedro Trinidad
Teopilo Moier
Barbara M. Miano
Blasius Maitan
Roligo M. Lero
Anacleto Montero
Arnelo M. Mendi
Melina Mervilla

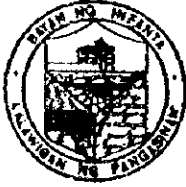
Leticia M. Melanio
Jose M. Modelo
Antonio M. Lopez
Porlito Modelo
Domingo Miano
Pioquinto Mendiola
Natividad M. Montero

Witnesses:


 MELCHOR M. MALLARE, M.D.
 Municipal Mayor




 ANACLETO M. MONTERO, SR.
 Barangay Captain



Republic of the Philippines
Province of Pangasinan
MUNICIPALITY OF INFANTA



OFFICE OF THE MUNICIPAL MAYOR


A G R E E M E N T
PROPOSED SUBMERGED RESERVOIR AREA

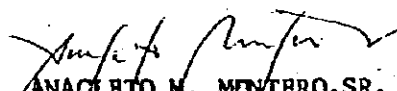
WE, the undersigned Heads of families to be affected by the construction of the Infanta Water Impounding and Environmental Improvement Project at Barangay Bamban, Infanta, Pangasinan, are very willing to be resettled at the Resettlement Area provided we will be justly compensated.

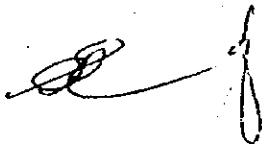
1 Carlos Amelio
Quiracido / Amelio

Liberato Parina

Witnesses:


MELCHOR M. MALLARE, M.D.
Municipal Mayor


ANACLETO N. MENTERO, SR.
Barangay Captain



Appendix 3 : Memorandum between PGP and PENRO

MEMORANDUM OF AGREEMENT

KNOW ALL MEN BY THESE PRESENTS:

THIS MEMORANDUM OF AGREEMENT ENTERED BY AND BETWEEN:

The Department of Environment and Natural Resources (DENR), a government agency with principal address at Visayas Avenue, Diliman, Quezon City, represented by its Provincial Environment and Natural Resources Officer (PENRO) for the province of Pangasinan, **ELPIDIO R. FABIAN** hereinafter referred to as the DENR;

- and -

The **PROVINCIAL GOVERNMENT OF PANGASINAN** with principal address at Lingayen, Pangasinan, represented by its **GOVERNOR, OSCAR M. ORBOS** hereinafter referred to as PGP.

- WITNESSETH -

WHEREAS, it is the mandate of the state to protect, develop and maintain an ecologically sound environment for the welfare of every Filipino being,

WHEREAS, the Provincial Government of Pangasinan (PGP) in cooperation with the Japan International Cooperation Agency (JICA) has prepared a project design for the implementation thru grant of an Impounding Irrigation and Environmental Improvement Project at Infanta, Pangasinan;

WHEREAS, the reforestation of idle, open areas of the public domain and environment improvement activities is the primary functions of the DENR;


NOW, THEREFORE, for and in consideration of the foregoing premises and of mutual covenants hereinafter set forth, the parties hereby agree on the following:

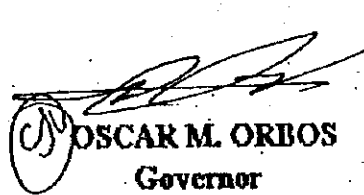
1. The DENR shall directly supervise and implement the reforestation and environmental improvement activities of the Infanta Impounding Irrigation and Environmental Improvement Project.

2. Creation of a joint DENR-PGP project management Group that shall establish guideline and oversee and harmonize the implementation of the said undertaking.
3. To explore jointly other awareness for cooperative efforts to facilitate the implementation of the project.
4. The DENR will provide the funds for the reforestation and environmental improvement undertakings starting in 1998.
5. The PGP shall undertake the implementation of the engineering works on the project.

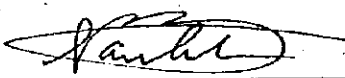
This Agreement shall take effect immediately and shall remain in force until the completion of the project or unless terminated by any of the parties.

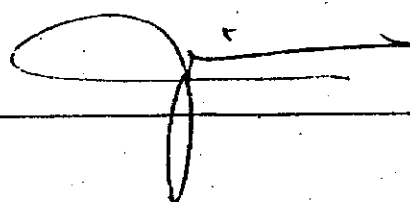
IN WITNESS WHEREOF, the parties hereunto affixed their signature this 6th day of March, 1997.

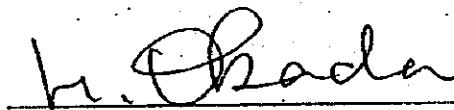

ELPIDIO R. FABIAN
 PENR Officer

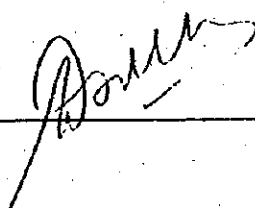

OSCAR M. ORBOS
 Governor
 Province of Pangasinan

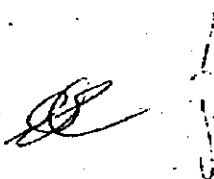
SIGNED IN THE PRESENCE OF :











ACKNOWLEDGEMENT

REPUBLIC OF THE PHILIPPINES)
DAGUPAN CITY)S.S.

BEFORE ME this 6th day of March, 1997
personally appeared:

ELPIDIO R. FABIAN

OSCAR M. ORBOS

Comm. Tax Cert. No. 8629438
Issued at Tubao, La Union
Issued On January 21, 1997

Comm. Tax Cert. No. 2944114-F
Issued at LINGAYEN, PANGASINAN
Issued On JANUARY 29, 1997

known to me to be the same persons who executed the foregoing instrument and who
acknowledged to me that the same are their own free and voluntary act and deed.

IN WITNESS WHEREOF, I hereunto affix my seal on the place and date above
stated.

ATTY. NOLAN R. EVANGELISTA
NOTARY PUBLIC
UNTIL DEC. 31, 1998
NOTARY PUBLIC, 1-6-97
TIN 124-756-287
IBP 403659, 1-7-97

Doc. No. 769
Page No. 14
Book No. IX
Series of 1997.

Appendix 4 : Sahre for the Nursery Preparation

List of Equipment for the Nursery Site

Items	No.	Descriptions	Share
Sprayer	2	half-pressure, automatic 10 lit. spread of agricultural chemicals, and liquid fertilizers	Philippine
Incubator	2	automatic (temperature, humidity, light effect etc.)	Philippine
Tracter	1	with accesories for plow, harrow dozer, diesel fed 8 - 10 HP	Philippine
Kuliglig (Hand tractor) tractor and complete accessories	1	main body (3 - 4 HP) with accessories	Philippine
Grass Cutter	4	main body diamond teeth file	Philippine
Truck (1t, Small Size)	1	4WD, 1 ton transport of soil, saplings materials, machine and parts	Philippine
Pump (Small Size)	1	main body (2 inches, 3 HP) synthetic rubber hoses L = 100 m	Philippine
Soil sampling and tester	1		Philippine
Incinerator	1		Philippine

Note: Some items can be excluded from the list if considered to be not required.

List of Facilities for the Nursery Site

(A) Pot nursery site

Items	Descriptions	Share
Pot beds Passage	W.2m x L.60m x 36 line = 4,320 m ² , 10cm high mound W.2m x L.60m x 32 line = 3,840 m ²	Japan
Sun shade facility	bamboo materials, diameter of 5cm, L.6m x 20 poles x 36 sets L.2m x 11 poles x 36 sets L.1.8m x 22 poles x 36 sets palm leaves or reed screens 1 sets x 600 kg x 36 sets = 21,600 kg strings or ropes and others	Philippine
Water pool	Concrete structure, 10m x 10m x 1.5m = 150 m ³	Japan
Irrigation facility	1. Vinyl chloride Water flow adjustment Water valve one set Main pipe Vp 100 28m Sub pipe Vp 75 210m Pipe with a admin faucet Vp 50 60cm x 7 Water faucet Vp 25 7 2. Water sprinkler pipe Synthetic rubber hoses 100m x 2	Japan

(B) Buildings

Items	Descriptions	Share
Warehouse administrative office	90m ² Wooden flat buildings and roof with cogon (thach) or slate include of warehouse, administrative office and rest room	Philippine
Germination house	48m ² wooden flat and roof top will use a strong semi-transparent plastic material	
Work shop	250m ² Wooden flat building and roof with cogon (thach) or slate, the flooring concrete mortar.	

(C) Passage (Road)

	Descriptions	Share
Road	W.5m x L.672 m, banks of 30 cm high, gravel of 15 cm thickness.	Japan
Ditch	W.50cm, bottom width 30 cm, D.30cm	

ANNEX I

ON JAPAN'S GRANT AID PROGRAM

1. Japan's Grant Aid Procedures

(1) The Japan's Grant Aid Program is executed by the following procedures.

- **Application**
(request made by a recipient country)
- **Study**
(Preliminary Study / Basic Design Study conducted by JICA)
- **Appraisal & Approval**
(Appraisal by the Government of Japan and Approval by the Cabinet of Japan)
- **Determination of Implementation**
(Exchange of Notes between the both Governments)
- **Implementation**
(Implementation of the Project)

(2) Firstly, an application or a request for a project made by the recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to see whether or not it is suitable for Japan's Grant Aid. If the request is deemed suitable, the Government of Japan entrusts a study on the request to JICA (Japan International Cooperation Agency).

Secondly, JICA conducts the Study (Basic Design Study), using a Japanese consulting firm. If the background and objective of the requested project are not clear, a Preliminary Study is conducted prior to a Basic Design Study.

Thirdly, the Government of Japan appraises to see whether or not the Project is suitable for Japan's Grant Aid Program, based on the Basic Design Study report prepared by JICA and the results are then submitted for approval by the Cabinet.

Fourthly, the Project approved by the Cabinet becomes official when pledged by the Exchange of Notes signed by both Governments.

Finally, for the implementation of the Project, JICA assists the recipient country in preparing contracts and so on.

2. Basic design Study

(1) Contents of the Study

The purpose of the Study (Preliminary Study/Basic Design Study) conducted by JICA on a requested project is to provide a basic document necessary for appraisal of the project by the Japanese Government. The contents of the Study are as follows:

- a) to confirm background, objectives, benefits of the project and also institutional capacity of agencies concerned of the recipient country necessary for project implementation,
- b) to evaluate appropriateness of the Project for the Grant Aid Scheme from a technical, social and economical point of view,
- c) to confirm items agreed on by both parties concerning a basic concept of the project,
- d) to prepare a basic design of the project,
- e) to estimate cost involved in the project.

Final project components are subject to approval by the Government of Japan and therefore may differ from an original request.

Implementing the project, the Government of Japan requests the recipient country to take necessary measures involved which are itemized on Exchange of Notes.

(2) Selecting (a) Consulting Firm(s)

For smooth implementation of the study, JICA uses (a) consulting firm(s) registered. JICA selects (a) firm(s) through proposals submitted by firms which are interested. The firm(s) selected carry(ies) out a Basic Design Study and write(s) a report, based upon terms of reference made by JICA.

The consulting firm(s) used for the study is(are) recommended by JICA to a recipient country after Exchange of Notes, in order to maintain technical consistency and also to avoid possible undue delay in implementation caused if a new selection process is repeated.

(3) Status of a Preliminary Study in the Grant Aid Program

A Preliminary Study is conducted during the second step of a project formulation & preparation as mentioned above.

A result of the study will be utilized in Japan to decide if the Project is to be suitable for a Basic Design Study.

Based on the result of the Basic Design Study, the Government would proceed to the stage of decision making process (appraisal and approval).

It is important to notice that at the stage of Preliminary Study, no commitment is made by the Japanese side concerning the realization of the Project in the scheme of Grant Aid Program.

3. Japan's Grant Aid Scheme

1) What is Grant Aid?

The Grant Aid Program provides a recipient country with non reimbursable funds needed to procure facilities, equipment and services for economic and social development of the country under the following principles in accordance with relevant laws and regulations of Japan. The Grant Aid is not in a form of donation or such.

2) Exchange of Notes (E/N)

The Japan's Grant Aid is extended in accordance with the Exchange of Notes by both Governments, in which the objectives of the Project, period of execution, conditions and amount of the Grant etc. are confirmed.

3) "The period of the Grant Aid" means one Japanese fiscal year which the Cabinet approves the Project for. Within the fiscal year, all procedure such as Exchange of Notes, concluding a contract with (a) consulting firm(s) and (a) contractor(s) and a final payment to them must be completed.

4) Under the Grant, in principle, products and services of origins of Japan or the recipient country are to be purchased.

When the two Governments deem it necessary, the Grant may be used for the purchase of products or services of a third country origin.

However the prime contractors, namely, consulting, contractor and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means Japanese physical persons or Japanese juridical persons controlled by Japanese physical persons.)

5) Necessity of the "Verification"

The Government of the recipient country or its designated authority will conclude into contracts in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. The "Verification" is deemed necessary to secure accountability to Japanese tax payers.

6) Undertakings required to the Government of the recipient country

In the implementation of the Grant Aid, the recipient country is required to undertake necessary measures such as the following:

- (a) To secure land necessary for the sites of the project and to clear and level the land prior to commencement of the construction work,
- (b) To provide facilities for distribution of electricity, water supply and drainage and other incidental facilities in and around the sites,
- (c) To secure buildings prior to the installation work in case the Project is providing equipment,
- (d) To ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid,
- (e) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts,
- (f) To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the Verified Contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.

7) Proper Use

The recipient country is required to maintain and use facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for their operation and maintenance as well as to bear all expenses other than those to be borne by the Grant Aid.

8) Re-export

The products purchased under the Grant Aid shall not be re-exported from the recipient country.

9) Banking Arrangement (B/A)

- (a) The Government of the recipient country or its designated authority shall open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by Government of the recipient country or its designated authority under the contracts verified.

(b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an Authorization to Pay issued by the Government of the recipient country or its designated authority.

11..

ANNEX II

Necessary measures to be taken by the Government of the Republic of the Philippines on condition that Japan's Grant Aid is executed;

1. To provide necessary data and information for the Project.
2. To secure the site for the Project.
3. To bear two kinds of commissions to the Japanese foreign exchange bank for the banking services based on the Banking Arrangement (B/A), namely, (i) advising commission of Authorization to Pay (A/P) and (ii) payment commission.
4. To ensure prompt unloading tax exemption, and custom clearance at the disembarkation in the Philippines and prompt internal transportation therein of the material and equipment for the project under the Grant.
5. To exempt Japanese nationals or a staff from a third country engaged in the project from customs duties, internal tax and other fiscal levies which may be imposed in the Philippines with respect to the supply of the products and services under the verified contract.
6. To accord Japanese nationals or a staff from a third country, whose services may be required in connection with the supply of the products and services under the verified contracts, such facilities as may be necessary for their entry into the Philippines and stay therein for the execution of the Project.
7. To provide necessary permissions, licenses and other authorization for carrying out the Project.
8. To assign appropriate budget and staff members for smooth construction works and proper and effective operation and maintenance of facilities constructed and equipment provided under the Grant Aid.
9. To maintain and use properly and effectively equipment purchased under the Grant.
10. To bear all the expenses other than those covered by the Grant, necessary for execution of the Project.

List of Participants in the Discussions

Japanese Side

1. Shosiro HORIGOME
Leader
Development Specialist, Institute for International Cooperation, JICA
2. Shokichi SAKATA
Project Coordinator
First Basic Design Study Division, Grant Aid Study and Design Department, JICA
3. Hiroshi OKADA
Project Manager/Operation and Management Planner
I.N.A. Corporation
4. Sumio SHINDOU
Agricultural and Irrigation Planner
Naigai Engineering Co., Ltd.
5. Akihiro IRIE
Dam and Reservoir Planner/Hydrologist
I.N.A. Corporation
6. Akira NAKAMURA
Assistant Resident Representative
JICA, Philippines Office
7. Yugi SAKAMOTO
JICA Expert for NIA

Pangasinan (Philippines) Side

1. Oscar M. ORBOS
Governor, Province of Pangasinan
2. Feliciano M. BAUTISTA
Provincial Administrator
3. Victoriano SEVILLEJA
Project Manager/Consultant, Office of the Governor
4. Melchor MALLARE
Municipal Mayor, Infanta Municipality
5. Leopoldo MERZO
Municipal Planning & Development Officer

6. Elpidio FABIAN
Provincial Environment & Natural Resources Officer
7. Alvin BIGAY
Chief, Provincial Housing & Urban Coordinating Center
8. Jose ALMENDARES
Asst. Provincial Agriculturist
9. Nestor QUIAMBAO
Provincial Assessor
10. Engr. Filipino G. SORIANO
Provincial Engr.
11. Mrs. Constanca F. DE GUIA
Provincial Social Welfare & Development Office
12. Dir. Manuel R. Casaclang (Ret.)
Consultant
Office of the Governor
13. Jesus Fernandez
Consultant
Office of the Governor



PDC RESOLUTION NO. 97-05

**ENDORING FAVORABLY THE INFANTA WATER IMPOUNDING
IRRIGATION AND ENVIRONMENTAL PROTECTION PROJECT TO
THE REGIONAL DEVELOPMENT COUNCIL.**

WHEREAS, presented for consideration to this body is the Infanta Water Impounding Project located in Infanta, Pangasinan;

WHEREAS, the impounding project is ranked as one of the top priority projects in the Northern Luzon Growth Quadrangle Plan for the Province of Pangasinan;

WHEREAS, the reservoir when completed will have a capacity of 9,500,000 cubic meter and would irrigate a total of 1,400 hectares benefiting 19,000 beneficiaries;

WHEREAS, the said project will require an amount of P 464.38 M and proposed to be funded by the Japan International Cooperation Agency;

WHEREAS, the project will contribute to increase in rice production, crop diversification, environmental protection in the area and improvement of the quality of life of the residents and neighboring populace;

NOW THEREFORE, on motion duly approved it was;

RESOLVED, as it is hereby resolved to endorsed to the Regional Development Council the Infanta Water Impounding Project as this will assume a major role in the improvement of agricultural sector and further improve the economic stability of the province;

RESOLVED FURTHER, that copies of this resolution be forwarded to Gov. Justo O. Orros, Jr., RDC Chairman thru Hon. Leonardo N. Quito, Jr., NEDA I Regional Director, San Fernando, La Union and the Japanese Embassy thru NEDA I for their information and appropriate action.

APPROVED UNANIMOUSLY.

CERTIFIED TRUE & CORRECT

Handwritten signature of Armi O. Nieto.

ARMI O. NIETO
PPDC and PDC Secretary

ATTESTED BY:

Handwritten signature of Oscar M. Orbos.

Hon. OSCAR M. ORBOS
Governor and PDC Chairman

MDC RESOLUTION NO. 97-003

**ENDORING FAVORABLY THE INFANTA IMPOUNDING
IRRIGATION AND ENVIRONMENTAL IMPROVEMENT PROJECT.**

WHEREAS, presented for consideration to this body is the Infanta Impounding Irrigation and Environmental Improvement Project involving a total project cost of P 464.38 M;

WHEREAS, Western Pangasinan particularly Infanta, a fifth class municipality, needs badly an environmental improvement to spur economic development in the area;

WHEREAS, an effective Irrigation Method would undoubtedly enhance development and promote farm households with opportunities towards a better quality of life;

WHEREAS, the reservoir when completed will have a total capacity of 9,500,000 cubic meter and would irrigate a total of 1,400 hectares benefiting 19,000 beneficiaries;

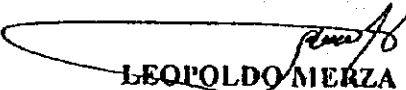
NOW THEREFORE, on motion duly approved it was;

RESOLVED, as it is hereby resolved to endorsed favorably the Infanta Impounding Irrigation and Environmental Improvement Project to the Provincial Development Council under the Grant Aid of the Government of Japan;


RESOLVED FURTHER, that copies of this resolution be furnished the Provincial Development Council for their information and appropriate action.

APPROVED UNANIMOUSLY.

CERTIFIED TRUE & CORRECT


LEOPOLDO MERZA
MDC Secretary

ATTESTED BY:


DR. MELCHOR MALLARE
Municipal Mayor & MDC Chairman

MINUTES OF DISCUSSIONS
ON
THE BASIC DESIGN STUDY ON THE PROJECT FOR
INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL
IMPROVEMENT
IN
THE REPUBLIC OF THE PHILIPPINES

Based on the results of the Basic Design Study from March 1996 to March 1997, the Japan International Cooperation Agency (JICA) decided to conduct a Basic Design Study on the Project for Infanta Impounding Irrigation and Environmental Improvement (hereinafter referred to as "the Project").

JICA sent to the Republic of the Philippines the Basic Design Study Team (hereinafter referred to as "the Team"), which is headed by Mr. SHOSHIRO HORIGOME, Development Specialist, Institute for International Cooperation, JICA, and is scheduled to stay in the country from June 16 to September 5, 1997.


The Team held a series of discussions with concerned officials of the Government of the Philippines and conducted field surveys at the study area.

In the course of discussions and field surveys, both parties have confirmed the main items described on the attached sheets. The Team will proceed to further works and prepare the Basic Design Study Report.

Pangasinan, June 23, 1997




Mr. SHOSHIRO HORIGOME
Leader
Basic Design Study Team
JICA



Mr. OSCAR M. ORBOS
Governor
Provincial Government of Pangasinan
The Republic of the Philippines

Placem Barte



ATTACHMENT

1. Objective

The objective of the Project is to enhance productivity of agricultural lands through the effective irrigation methods, to assist in the resettlement of Mt. Pinatubo eruption victims and to contribute to the environmental improvement in watershed through the development of the Infanta district area.

2. Project Area

The project area is located in the Municipality of Infanta, the Province of Pangasinan. (See ANNEX-1)

3. Responsible and Executing Organization

Responsible and executing organization for the Project is the Provincial Government of Pangasinan (hereinafter referred to as "the Provincial Government").

4. Items requested by the Provincial Government

After discussions with the Team, the following items were finally requested by the Provincial Government:

(1) Reservoir and dam construction including its appurtenances

Effective capacity of 8 MCM with the dam height of 40m and a length 330m

(2) Main irrigation canals with maintenance road

Unlined open canal of 21.6km in total length

(New canal 14.5km and improved canal 7.1km)

(3) Development of 220ha resettlement area with water supply facilities

(4) Tree nursery of 2.35ha with water supply facilities

(5) Road construction

Around reservoir 16.8km in total length (New road 13.4km and improved road 3.4km)

Barangay Road 7.2km in total length (New road 1.9km and improved road 5.3km)

(6) Post-harvest facilities 8 locations

- (7) Maintenance equipment
- | | |
|--------------|------|
| Motor grader | 1No. |
| Dump truck | 1No. |
| Bulldozer | 1No. |
| Backhoe | 1No. |

However, the figure of each component mentioned above will be subjected to further studies.

5. Japan's Grant-Aid System

- (1) The Provincial Government has understood the Japan's Grant-Aid system as described in ANNEX-II through the explanation by the Team.
- (2) The Provincial Government will take the necessary measures described in ANNEX-III for the smooth implementation of the Project, on the condition that the Japan's Grant-Aid is extended to the Project.

6. Schedule of the Study

- (1) The consultant members of the Team will proceed to conduct further studies in the Philippines until September, 1997.
- (2) After the results of the analyses in Japan are accepted, JICA will finalize the basic design study report and send it to the Government of the Pangasinan, the Republic of the Philippines, in December, 1997.

7. Other Relevant Issues

- (1) The Basic Design Study Team (the Team) informed that the Administrator of National Irrigation Administration (NIA) committed himself to provide necessary technical assistance to the project by dispatching NIA's engineers depending on the requirement. PGP answered that they would take necessary communication with NIA on this matter.
- (2) The Provincial Government of Pangasinan (PGP) submitted the Team " Answers to the Questionnaires " ("the Answers," as attached to this minutes) and explained verbally.
- (3) A representative from the NEDA head office informed PGP to send the list of necessary documents and procedures for the approval of ICC and assist in the earlier progress.
- (4) PGP explained that ECC approval was already at the final stage.
- (5) The Team reminded PGP about the earlier preparation of ICC, ECC, and all the written agreements on the resettlement & compensation. PGP informed the Team to make their best for completing the matters by the end of August at the latest.
- (6) The Team suggested if ICC, ECC and all the written agreements & compensation could not be obtained in due time, the procedure of the project would be delayed further.
- (7) The Team suggested to review the organizational structure (attached to "the Answers") and to have revised a part of responsible members. PGP answered to replace the head of "Watershed and Agro-forestry Group" to Mr. Fabian (PENRO) and to review the other parts as well. (See the attached revised "Organizational Structure": ANNEX-IV)
- (8) PGP informed that the "Memorandum of Agreement" between PGP and NIA and also PGP

and BSWM would be prepared to expect compliance or cooperation in the effective implementation, operation and maintenance. The Team suggested that the memorandum should include the allocation of budget and the contents of technical guidance.

(9) PGP explained that PGP had already secured the budget of 3.5 million peso which was approved through the Resolution of Provincial Board (SANGGUNIANG PAN LALAWIGAN) for 1997 fiscal year and surely drew up an annual budget of the equivalent amount continuously from 1998. The Team requested PGP to prepare a paper of the budgetary plan which included the financial source(s) for each item.

(10) PGP explained about the present status of resettlement plan. The Team commented that the plan was not yet appropriate at some points and requested PGP to prepare the definite plan which included the following matters:

- Reliable number of resettlers with its breakdown
- Means of living with definite income plan (for a long-term)
- Resettlement schedule
- Farmland preparation plan including soil improvement
- Power supply and housing plan

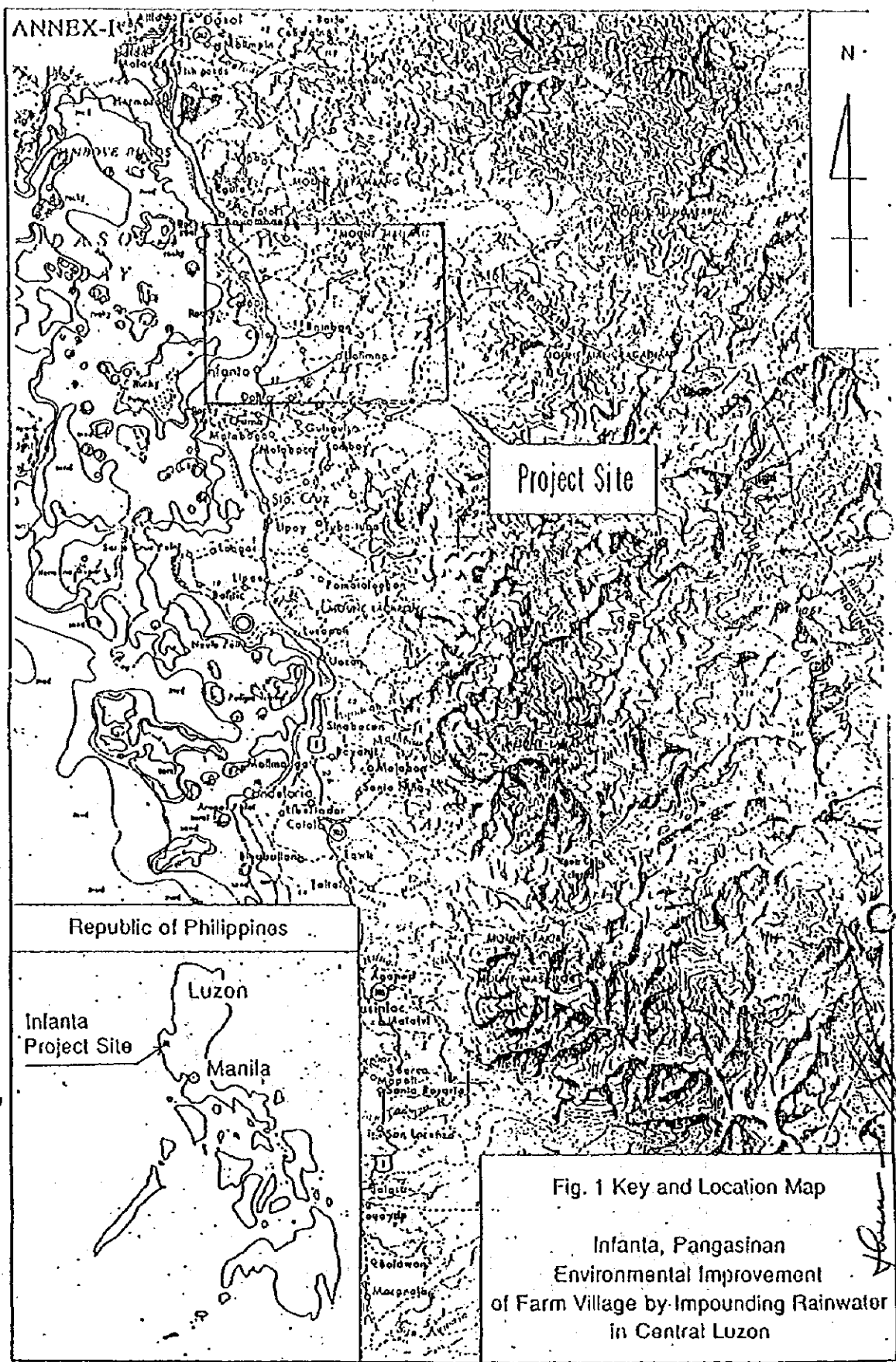
The Team suggested that the resettlement of Pinatubo victims had priority and it was necessary to prepare "Memorandum of Agreement" between PGP and Mount Pinatubo Committee (MPC) for the resettlement.

(11) The Team explained that the soil in the proposed resettlement area might be poor in quality for farming according to the evaluation by Japanese specialists for BSWM. PGP agreed to prepare an official letter to BSWM for requesting the study/analysis on the present soil conditions as well as the soil improvement measures. (See attached draft of official letter: ANNEX-V)

(12) PGP explained about the election law which would ban the project commencement in the period of 90 days before the general election day, that is May 12, 1998. The Team requested PGP to prepare a copy of the law and to explain the matter more in detail.

(13) A pick up was additionally requested by PGP in the "Answer to the Questionnaires". The Team explained the difficulty to allocate the item because it could be used as an ordinary car. PGP understood the difficulty of securing the approval of a pick up. Instead PGP submitted a letter requesting to allocate 1-unit of bulldozer and 1-unit of backhoe as the additional equipment for the maintenance of roads, canals and resettlement area. The Team answered that the request letter would be transmitted to the JICA head office in Tokyo. (See attached letter of additional request: ANNEX-VI)

(14) PGP requested the Team to arrange earlier commencement of the construction in consideration of the past some years of waiting period and also the probable change of government organization & staff due to the general election in 1998. The Team answered that the Team has been making effort in the past for the earlier commencement, however PGP could not complete some necessary preparation/duties in time. In addition, the Team advised PGP to complete their preparation/duties in due time for the official approval of project implementation.



ON JAPAN'S GRANT AID PROGRAM

1. Japan's Grant Aid Procedures

- (1) The Japan's Grant Aid Program is executed by the following procedures.
- Application (request made by a recipient country)
 - Study (Preliminary Study / Basic Design Study conducted by JICA)
 - Appraisal & Approval (Appraisal by the Government of Japan and Approval by the Cabinet of Japan)
 - Determination of Implementation (Exchange of Notes between both Governments)
 - Implementation (Implementation of the Project)
- (2) Firstly, an application or a request for a project made by the recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to see whether or not it is suitable for Japan's Grant Aid. If the request is deemed suitable, the Government of Japan entrusts a study on the request to JICA (Japan International Cooperation Agency).

Secondly, JICA conducts the Study (Basic Design Study), using a Japanese consulting firm. If the background and objective of the requested project are not clear, a Preliminary Study is conducted prior to a Basic Design Study.

Thirdly, the Government of Japan appraises to see whether or not the Project is suitable for Japan's Grant Aid Program, based on the Basic Design Study report prepared by JICA and the results are then submitted for approval by the Cabinet.

Fourthly, the Project approved by the Cabinet becomes official when pledged by the Exchange of Notes signed by both Governments.

Finally, for the implementation of the Project, JICA assists the recipient country in preparing contracts and so on.

2. Contents of the Study

(1) Contents of the Study

The purpose of the Study (Preliminary Study / Basic Design Study) conducted on a project requested by JICA is to provide a basic document necessary for appraisal of the project by the Japanese Government. The contents of the Study are as follows:

- a) to confirm background, objectives, benefits of the project and also institutional capacity of agencies concerned of the recipient country necessary for project implementation,
- b) to evaluate appropriateness of the Project for the Grant Aid Scheme from a technical, social and economical point of view,
- c) to confirm items agreed on by both parties concerning a basic concept of the project,
- d) to prepare a basic design of the project,
- e) to estimate cost involved in the project.

Final project components are subject to approval by the Government of Japan and therefore may differ from an original request.

Implementing the project, the Government of Japan requests the recipient country to take necessary measures involved which are itemized on Exchange of Notes.

(2) Selecting (a) Consulting Firm(s)

For smooth implementation of the study, JICA uses (a) consulting firm(s) registered. JICA selects (a) firm(s) through proposals submitted by firms which are interested. The firm(s) selected carry(ies) out a Basic Design Study and write(s) a report, based upon terms of reference made by JICA.

The consulting firm(s) used for the study is(are) recommended by JICA to a recipient country after Exchange of Notes, in order to maintain technical consistency and also to avoid possible undue delay in implementation caused if a new selection process is repeated.

(3) Status of a Preliminary Study in the Grant Aid Program

A Preliminary Study is conducted during the second step of a project formulation & preparation as mentioned above.

A result of the study will be utilized in Japan to decide if the Project is to be suitable for a Basic Design Study.

Based on the result of the Basic Design Study, the Government would proceed to the stage of decision making process (appraisal and approval).

It is important to notice that at the stage of Preliminary Study, no commitment is made by the Japanese side concerning the realization of the Project in the scheme of Grant Aid Program.

3. Japan's Grant Aid Scheme

(1) What is Grant Aid?

The Grant Aid Program provides a recipient country with non reimbursable funds needed to procure facilities, equipment and services for economic and social development of the country under the following principles in accordance with relevant laws and regulations of Japan. The Grant Aid is not in a form of donation or such.

(2) Exchange of Notes (E/N)

The Japan's Grant Aid is extended in accordance with the Exchange of Notes by both Governments, in which the objectives of the Project, period of execution, conditions and amount of the Grant, etc. are confirmed.

(3) "The period of the Grant Aid" means one Japanese fiscal year which the Cabinet approves the Project for. Within the fiscal year, all procedure such as Exchange of Notes, concluding a contract with (a) consulting firm(s) and (a) contractor(s) and a final payment to them must be completed.

(4) Under the Grant, in principle, products and services of origins of Japan or the recipient country are to be purchased.

When the two Governments deem it necessary, the Grant may be used for the purchase of products or services of a third country origin.

However the prime contractors, namely, consulting, contractor and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means Japanese physical persons or Japanese juridical persons controlled by Japanese physical persons.)

(5) Necessity of the "Verification"

The Government of the recipient country or its designated authority will conclude into contracts in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. The "Verification" is deemed necessary to secure accountability to

Japanese tax payers.

(6) Undertakings required to the Government of the recipient country

In the implementation of the Grant Aid, the recipient country is required to undertake necessary measures such as the following:

- a) to secure land necessary for the sites of the project and to clear and level the land prior to commencement of the construction work,
- b) to provide facilities for distribution of electricity, water supply and drainage and other incidental facilities in and around the sites,
- c) to secure buildings prior to the installation work in case the Project is providing equipment,
- d) to ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid,
- e) to exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts,
- f) to accord Japanese nationals whose services may be required in connection with the supply of the products and services under the Verified Contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.

(7) Proper Use

The recipient country is required to maintain and use facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for their operation and maintenance as well as to bear all expenses other than those to be borne by the Grant Aid.

(8) Re-export

The products purchased under the Grant Aid shall not be re-exported from the recipient country.

(9) Banking Arrangement (B/A)

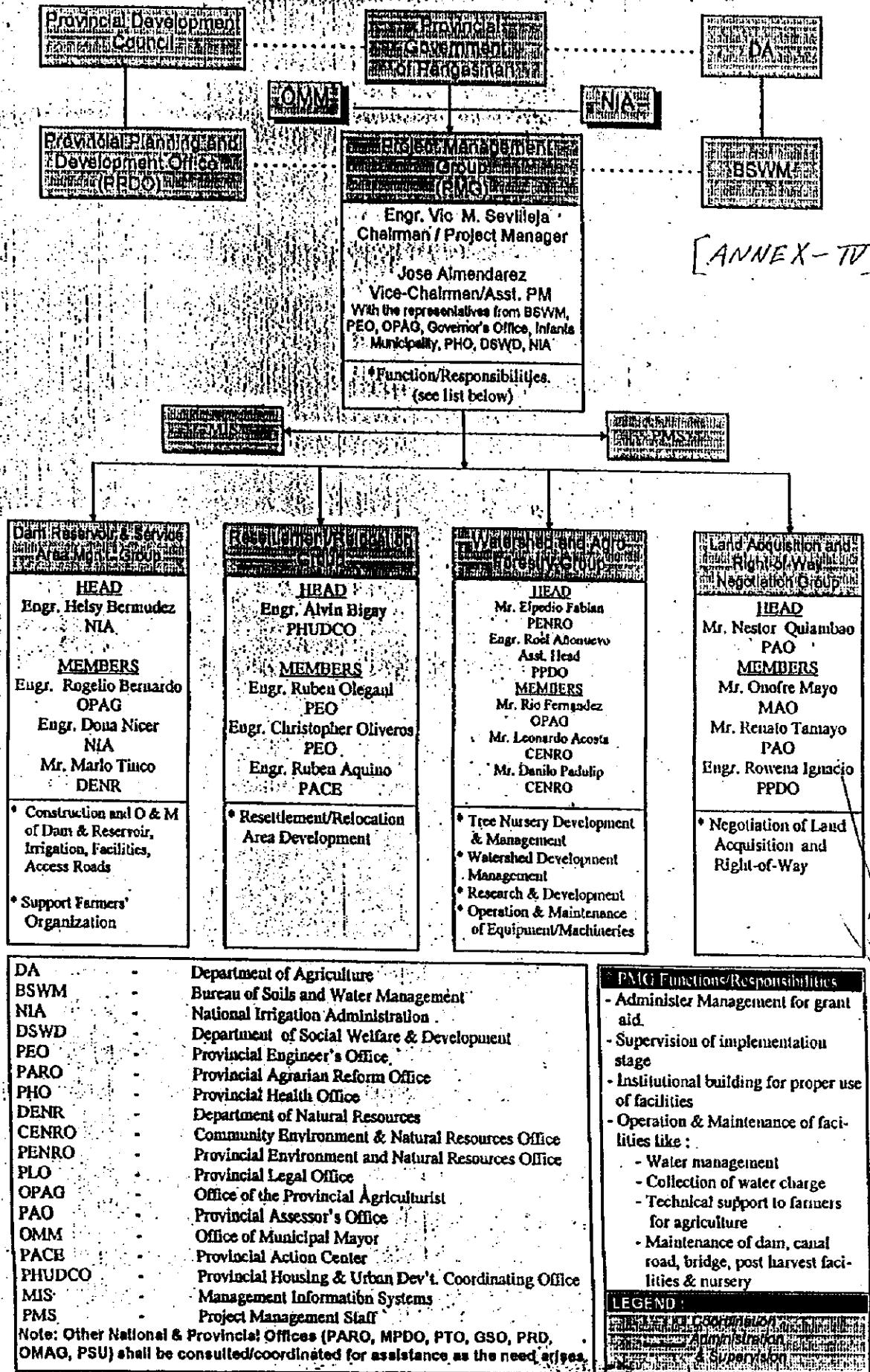
- a) The Government of the recipient country or its designated authority shall open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by Government of the recipient country or its designated authority under the contracts verified.
- b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an Authorization to pay issued by the Government of the recipient country or its designated authority.

NECESSARY MEASURES TO BE TAKEN BY THE GOVERNMENT OF THE PHILIPPINES IN
CASE JAPAN'S GRANT AID IS EXTENDED

1. To provide data and information necessary for the Project.
2. To secure the site for the Project.
3. To bear two kinds of commissions to the Japanese foreign exchange bank for its banking services based upon the Banking Arrangement(B/A) namely,
 - the advising commission of the "Authorization to Pay(A/P)" and
 - the payment commission.
4. To ensure prompt unloading, tax exemption, and customs clearance at the port of disembarkation in the Philippines and prompt internal transportation therein of the materials and equipment for the Project purchased under the Grant Aid.
5. To exempt Japanese nationals or a staff from a third country engaged in the Project from customs duties, internal taxes and other fiscal levies which may be imposed in the Philippines with respect to the supply of the products and services under the verified contracts.
6. To accord Japanese nationals or a staff from a third country whose services may be required in connection with supply of the products and services under the verified contracts, such facilities as may be necessary for their entry into the Philippines and stay therein for the performance of their work.
7. To provide necessary permissions, licenses and other authorization for implementing the Project, if necessary.
8. To assign appropriate budget and staff members for smooth construction works and proper and effective operation and maintenance of the facilities constructed and equipment provided under the Grant Aid.
9. To maintain and use properly and effectively the facilities constructed and the equipment provided under the Project.
10. To bear all the expenses other than those to be borne by the Grant Aid within the scope of the Project.

ORGANIZATIONAL STRUCTURE

Infanta Impounding Irrigation and Environment Improvement Project





Republic of the Philippines
PROVINCE OF PANGASINAN
Office of the Provincial Governor
Lingayen, Pangasinan



OSCAR M. ORBOS
Governor

June 23, 1997

Hon. SALVADOR ESCUDERO III
Secretary, Department of Agriculture
Elliptical Road, Quezon City

Dear Secretary Escudero:

The Japanese Government through Japan International Cooperation Agency (JICA) is presently undertaking the Basic Design Study of the Infanta Impounding Irrigation and Environmental Improvement Project in this Province.

One important component of this grant-aid Project is the resettlement area including farmlands where to accommodate the families who are to be rendered homeless on account of their expected displacements by the Project's implementation. Further, JICA desires to accommodate the victims of the Mount Pinatubo eruptions/disaster.

JICA noted with deep concern of the unsuitable soil of the farmlands which will greatly affect the agricultural livelihood of the expected resettlers. At this planning stage, we want to anticipate appropriate solutions to enhance agricultural productivity in the area.

In this connection, we respectfully request your technical assistance thru your BSWM to conduct soil studies/analysis at the resettlement farmlands and recommend appropriate measures to be undertaken. Your BSWM expertise will be assisted by the soil technicians of the Provincial Agriculturist's Office of Pangasinan.

Thank you and our best wishes and regards to your goodself.

Very respectfully yours,

For and By authority of the
Governor:


ATTY. FELICIANO M. BAUTISTA
Provincial Administrator

Copy furnished:

Mr. Filomeo O. Rosario
Provincial Agriculturist
Capitol Compound
Lingayen, Pangasinan



Republic of the Philippines
PROVINCE OF PANGASINAN
Office of the Provincial Governor
Lingayen, Pangasinan



OSCAR M. ORBOS
Governor

June 23, 1997

The Managing Director
Japan International Cooperation Agency (JICA)
Shinjuku Maynds Tower
2-1-1 Yogyo, Shinbuya-ku
Tokyo 151, Japan

Sir:

We thank you most sincerely of the on-going Basic Design Study by JICA for the Infanta Impounding Irrigation and Environmental Improvement Project in the Province of Pangasinan, Philippines.

Your grant-aid Program is a big bonanza for Pangasinan and its people. To maximize the utilization of this Project upon its completion, we wish to assure you that we will effectively and efficiently operate and maintain the whole irrigation project system to sustain its design life span. In furtherance to this commitment, we respectfully request your office to please allocate 1-unit Bulldozer and 1-unit truck-mounted backhoe in addition to the 2-units maintenance equipment (dump truck and motor grader) earlier requested, for the proper and adequate maintenance of the service roads, canals, and the resettlement area of the project.

Please accept our profound gratitude for greatly enhancing the social and economic life of our people in this north-west Province of the Philippines.

Very respectfully yours,

For and By authority of the
Governor:


ATTY. FELICIANO M. BAUTISTA
Provincial Administrator

INFANTA IMPOUNDING IRRIGATION & ENVIRONMENTAL
PROTECTION PROJECT MEETING, JUNE 18, 1997

ATTENDANCE

1. V. M. Sevilleja	PGO -Lingayen Capitol
2. Helsy S. Bermudez	NIA-Pang. PIO
3. Jose M. Almendares	PGO Lingayen
4. Bonifacio Casuga	NEDA
5. Joy Marie T. Tuazon	NEDA
6. Hakushi Hamaoka	JICA, Head Quarter
7. Cristina Santiago	NEDA-PIS
8. Teiichi Takahashi	Ministry of Agriculture
9. S. Horigomo	JICA
10. Akira Nakamura	JICA Philippine Office
11. Jesus F. Fernandez	PGO
12. Yoji Terazu	JICA
13. Masanobu Sakurai	JICA
14. Hiroshi Okada	JICA
15. Ruben Aquino	PAGE
16. Fidel C. Bautista	PPDO
17. Rowena V. Ignacio	PPDO
18. Elpedio R. Fabian	DENR, PENRO
19. Edigardo Domingo	INSA Corporation
20. Atty. Feliciano Bautista	Prov'l Administrator
21. Carlos E. Ganibe	Office of the Governor
22. Manuel R. Casaclang	Consultant PGO
23. Edwin B. Mendoza	PGO PGO
24. Ruben A. Abalos	PAGE
25. Atty. Alfonso V. Soriano	Consultant, PGO
26. Alvin L. Bigay	OIG PHVDCO
27. Tomas E. Teja	PAGE

QUESTION AND ANSWER

1. Yes. However, there is a need of additional basic design study due to the dam site relocation towards upstream from its original location as decided by JICA.
2. The allocation of 1-unit pick-up vehicle is necessary in addition to the 2-units maintenance equipment. This pick-up service vehicle will be used in going around the service roads at the reservoir area, along the irrigation canals, and the resettlement area including nursery site for routine maintenance activities. This service vehicle will also be used to transport maintenance tools and crews in the upkeep of the service roads including emergency works in the irrigation structures.
3. The ECC issuance by DENR will eventually be released upon submittal of additional information on the number of trees expected to be submerged in the reservoir area as requested by the Environmental Management Bureau (EMB). The consultant of the proponent province is attending to it. The social acceptability and environmental impact of the project were favorably endorsed by EMB after the public hearing conducted on April 25, 1997 at the Infanta project.
4. The ICC of the project has been favorably recommended to the National Economic ^{Development} Authority (NEDA) for approval by the NEDA Board after the May 5, 1997 presentation and deliberation in Manila. The ICC issuance/clearance will be issued momentarily.
5. The Memorandum of Agreement for the compensations of land properties including improvements and trees planted thereat within the project coverage between the landowners and the Provincial Government of Pangasinan is in progress. The coverage areas consist of the proposed reservoir area and dam site, resettlement area including nursery site, canal routes and service roads, and drier yards. The Memorandum of Agreement will be completed on or before June 30, 1997.
6. The acquisitions/compensations of the land involved, shall be started at the dam site and reservoir area upon approval by JICA of the project's start or implementation. Succeeding land acquisitions/compensations on the remaining areas be made by the 1998 Provincial Budget of Pangasinan.
7. Previously submitted Organizational Chart for the project execution, operation and maintenance, is slightly modified which includes personnel appropriately coming from Provincial and National Offices. Further modifications or updating will be made as the project implementation progresses. It is a fact that organization thrives on change.

Memorandum of Agreement (MOA) shall be executed between NIA/BSWM and the Provincial Government of Pangasinan to expect compliance or cooperation in the effective implementation of the project. A previously executed MOA between the DENR/PENRO and the Provincial Government of Pangasinan (Appendix "3" in previous JICA documentations), be similarly executed for NIA and other national agencies of the government.

8. Resettlement plan and schedule -

Upon completion by JICA of the resettlement site development including road networks and waterlines, the following concerns and issues are to be attended promptly:

- 1) The resettlement schedule must comply with the screening process criteria and come up with the total family settlers and be completed before actual start of resettlement site development.
- 2) The farmland preparation plan for the resettlement area shall be started immediately upon completion of the housing units by the Provincial Government of Pangasinan.
- 3) The power supply and housing plan for the resettlement area shall be started immediately after the final listings of qualified resettlers and be completed in time with the resettlement site development.
- 4) Care for the means of living for the resettlers especially for the first few years should be focused on their priority employment in the Infanta project construction, reforestation component programs at the watershed, and crop diversifications at the resettlement farmlands.

9. Construction Plan and Schedule of secondary/tertiary canals -

The construction plan shall be based on NIA standard design and practices. The construction schedule shall be implemented by the duly organized Irrigators' Association upon consultation and coordination with NIA. Funding requirements shall be advanced by the Provincial and Municipal Governments which shall be reimbursed in reasonable amortization installments by the Irrigators' Association from its collections of irrigation fees.

Maintenance roads for secondary/tertiary canals may not be necessary.

10. DENR/PENRO/CENRO shall be consulted and coordinated in the reforestation plan for the watershed area of the project. The planting of seedlings at the watershed to control erosion, prevent gully formation and land slides, and sustain watershed management in maintaining high level of water for potable and safe drinking water supply, shall be under the funding, management, direction and supervision of DENR/PENRO/CENRO under MOA arrangement. The operation, management/maintenance system in the reforestation plan and implementation shall, likewise be under the MOA arrangement between DENR/PENRO/CENRO and Provincial/Municipal Governments.

11. The technical guidance including appropriate training for the direct operation and maintenance of the project is necessary. By appropriate arrangement with NIA, BSWM and JICA, technical training with operation guidance including maintenance be extended to the Provincial Management Counterpart Group and Irrigators' Associations to familiarize them of the dam and irrigation operating structures and appurtenances in an efficient, effective and safe operation of the whole project system. During the early stages and for sometime operation and maintenance of the project, NIA technical assistance and supervision are very necessary.

12. Strengthening the Task Force/Project Manager -

Initially, Administrative Order No. 0049-97 dated May 20, 1997 issued by the Governor, copy hereto is attached, provides appropriate functions and authority of the Task Force/Project Manager, for the preparatory works prior to the actual implementation of the project. Administrative Order No. 0049-97 further provides better coordination and expeditious action on critical issues and concerns relative to the project's requirements. During the construction stages of the project necessary authority

corresponding to expanded functions and duties required in the future, may be sought for issuance/s by the Governor and the Provincial Board of Pangasinan, as the case maybe or so accordingly desired.

13. Hydrological observations -

The hydrological data are being submitted periodically for the Noyon River Weir and Bamnan Weir, to INA Corporation/JICA. The resulting analysis is at JICA's assessment and disposition.

14. Upon the projects' completion, a new Irrigators' Association is expected to be organized by integrating the existing Irrigators' Associations into one as effective and strong Association.

The collection of irrigation water fees with reasonable and realistic rates be institutionalized by the Provincial Management Group with the Irrigators' Association as its component arm in the matter of irrigation water fee collections and for water allocation purposes to the farmer beneficiaries of the project.

The Provincial Management Group shall, likewise, determine equitable amortization installments to pay the loan obligations on existing weirs constructed by the NIA, and on future funding obligations for the construction of secondary/tertiary irrigation canals.

15. The Provincial Government of Pangasinan and the Municipal Government of Infanta through their respective legislative bodies (Provincial Board and Municipal Council, respectively) may provide needed funding allocations or appropriations that are necessary to effectively implement the management and administration including operation and maintenance of the whole project system.



OSCAR M. ORBOS
 Governor

ADMINISTRATIVE ORDER No. 0049-97

In furtherance to Executive Order No. 95-0059 dated February 3, 1995, creating the Task Force on the Infanta Impounding Irrigation and Environmental Improvement Project, the herein Task Force prior to the actual implementation of said Project, shall perform the following preparatory functions:

1. General supervision over the personnel and functions of the Task Force;
2. Oversee and monitor the preparatory works and activities including documentations and validations of relevant data as may be required by the JICA grant-aid program;
3. May call on personnel of the various provincial departments/ offices, and national government offices/agencies in pursuance to Articles 55-56 of the implementing rules and regulations of R.A. 7160, for technical assistance including integration of programs and projects related to or that will enhance the implementation of said Infanta Project;
4. Recommend proposal/s for the organizational set up as provincial counterpart management group with JICA's management group for the implementation of the Infanta project;
5. Recommend changes in policies and objectives to appropriate authorities in the interest of the project's implementation; and
6. Keep custody of all plans, documentation and relevant papers/ correspondences for the project, with copies of the same to be furnished the Provincial Administrator.

The Task Force in its above functions shall be composed of the following:

- | | | |
|-----------------------------|-----|------------------------------|
| Engr. Victoriano M. Sevilla | --- | Project Manager |
| Mr. Jose Almendarez | --- | Asst. Project Manager (OPAO) |
| Engr. Roel Alfonso | --- | Staff Member (PPDO) |
| Engr. Roger Penuado | --- | Staff Member (OPAO) |
| Engr. Ruben Aquino | --- | Staff Member (PACE) |
| Engr. Rowena Ignacio | --- | Staff Member (PPDO) |
| Mr. Fidel Bautista | --- | Staff Member (PPDO) |
| Mr. Ruben Abales | --- | Staff Member (PACE) |

To effectively and expeditiously administer and manage the foregoing functions, the Task Force is expected to travel most often to the project site and other offices involved, and accordingly, is hereby assigned a government service vehicle with fuel and POL supply requirements and be given corresponding per diem, honorarium, etc. subject to the availability of funds, accounting and auditing rules and procedures.

Issued this 20th day of May, 1997 at Lingayen, Pangasinan.

OSCAR M. ORBOS
 Governor

CARMINDA C. FERRNIDE
 ADMINISTRATIVE OFFICER

MEMORANDUM OF AGREEMENT

KNOW ALL MEN BY THESE PRESENTS:

THIS MEMORANDUM OF AGREEMENT ENTERED BY AND BETWEEN:

The **Department of Environment and Natural Resources (DENR)**, a government agency with principal address at Visayas Avenue, Diliman, Quezon City, represented by its **Provincial Environment and Natural Resources Officer (PENRO)** for the province of Pangasinan, **ELPIDIO R. FABIAN** hereinafter referred to as the DENR;

- and -

The **PROVINCIAL GOVERNMENT OF PANGASINAN** with principal address at Lingayen, Pangasinan, represented by its **GOVERNOR, OSCAR M. ORBOS** hereinafter referred to as PGP.

- WITNESSETH -

WHEREAS, it is the mandate of the state to protect, develop and maintain an ecologically sound environment for the welfare of every Filipino being,

WHEREAS, the Provincial Government of Pangasinan (PGP) in cooperation with the Japan International Cooperation Agency (JICA) has prepared a project design for the implementation thru grant of an Impounding Irrigation and Environmental Improvement Project at Infanta, Pangasinan,

WHEREAS, the reforestation of idle, open areas of the public domain and environment improvement activities is the primary functions of the DENR;

NOW, THEREFORE, for and in consideration of the foregoing premises and of mutual covenants hereinafter set forth, the parties hereby agree on the following:

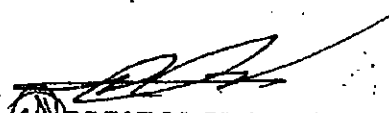
1. The DENR shall directly supervise and implement the reforestation and environmental improvement activities of the Infanta Impounding Irrigation and Environmental Improvement Project.

2. Creation of a joint DENR-PGP project management Group that shall establish guideline and oversee and harmonize the implementation of the said undertaking.
3. To explore jointly other awareness for cooperative efforts to facilitate the implementation of the project.
4. The DENR will provide the funds for the reforestation and environmental improvement undertakings starting in 1998.
5. The PGP shall undertake the implementation of the engineering works on the project.

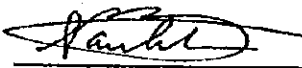
This Agreement shall take effect immediately and shall remain in force until the completion of the project or unless terminated by any of the parties.

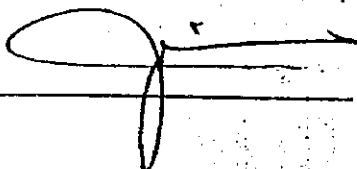
IN WITNESS WHEREOF, the parties hereunto affixed their signature this 6th day of March, 1997.

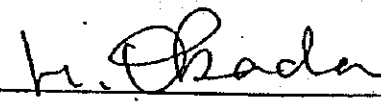

ELPIDIO R. FABIAN
 DENR Officer

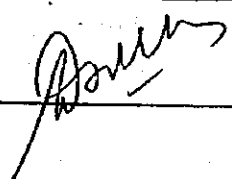

OSCAR M. ORBOS
 Governor
 Province of Pangasinan

SIGNED IN THE PRESENCE OF:









ACKNOWLEDGEMENT

REPUBLIC OF THE PHILIPPINES)
DAGUPAN CITY)S.S.

BEFORE ME this 6th day of March, 1997
personally appeared:

ELPIDIO R. FABIAN
Comm. Tax Cert No. 8629438
Issued at Tubao, La Union
Issued On January 21, 1997

OSCAR M. ORBOS
Comm. Tax Cert No. 294414-E
Issued at LINGAYEN, PANGASINAN
Issued On JANUARY 29, 1997

known to me to be the same persons who executed the foregoing instrument and who
acknowledged to me that the same are their own free and voluntary act and deed.

IN WITNESS WHEREOF, I hereunto affix my seal on the place and date above
stated.

ATTY. NOLAN R. EVANGELISTA
NOTARY PUBLIC
UNTIL DEC. 31, 1998
PTRONAL P. P. 1-8-97
TIN 124-756-287
IBP 403659, 1-7-97

Doc. No. 707
Page No. 14
Book No. IX
Series of 1997.

Letter from JICA Mission to PGP

Lingayen, 18 February, 1998

Honorable, Oscar M. Orbos,
Governor of Province of Pangasinan,

Re.: Result of Discussion on the Draft Report on the Project for Infanta Impounding Irrigation and Environmental Improvement in the Republic of the Philippines

In June 1997, the Japan International Cooperation Agency (JICA) dispatched the Basic Design Study Team on the Project for Infanta Impounding Irrigation and Environmental Improvement in the Republic of the Philippines (hereinafter referred to as "the Project") to the Republic of the Philippines. After the assessment of the data and information obtained through the study, JICA has prepared the Draft Basic Design on the Project.

In order to explain and consult with the officials concerned of the Government of the Republic of the Philippines on the components of the Draft Basic Design, JICA sent to the Republic of the Philippines our study team, which is scheduled to stay in the country from February 12 to 19, 1998.

The Team explained the principal components of the Draft Basic Design to the Philippine side. The Team also commented the followings as findings of the basic design study.

(1) Justification of The Project

The soil analysis on the resettlement area shows that soil is of poor quality and not suitable for agricultural activities. This fact means that it is not possible to provide Mt. Pinatubo victims with productive farming lands as the bases of their livings. Therefore, the Team cannot justify the Project since its major objective is to assist the resettlement of the victims.

(2) Other Relevant Issues

- 1) Highly permeable layers were found in the foundation of the dam site. The treatment of the layers is relatively difficult, and may affect the construction cost in a large scale. Its countermeasures and cost on basic design level have not been determined, due to insufficient information. More detailed and

extensive geological survey is required.

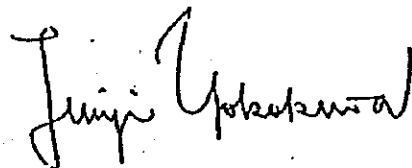
- 2) The Team is concerned about compensation for the landowners and displacement of the farmers from the proposed site of the dam. At this stage, there are still more than twenty of landowners who have not agreed the compensation and the displacement. It is probable that the project execution has a serious difficulty and induces a social problem even in case a family opposes to the agreement. The Team is not optimistic on this issue.

Against the above findings, the Philippine side mentioned that the Project benefited not only the Pinatubo victims but also the local farmers. For the benefits of the local farmers, the Philippine side still requests the realization of the Project in the original component, which includes a dam and irrigation structures, although its scale may be reduced.

Responding to this comment, the Team mentioned that priority as a grant aid project and justification of the Project were required to be confirmed even if its major object had been shifted from Mt. Pinatubo victims to the local farmers.

The Team regrets this unexpected findings of the Study. However, we really appreciate your close cooperation which has been extended to us, and are sure that our friendship will still remain in spite of the result of the Study.

Sincerely yours,



Junji YOKOKURA
Leader,
Draft Report Explanation Team,
JICA

Copy furnished:

1. NEDA, Manila
2. NIA, Manila
3. Embassy of Japan, Manila
4. JICA Philippine Office



OSCAR M. ORBOS

Governor

Letter from PGP
to JICA Mission

February 18, 1998

Mr. JUNJI YOKOKURA
Senior Assistant to Managing Director
Team Leader, JICA Mission
Shinjuku Maynds Tower Bldg.
1-1 Yoyogi, 2-Chome
Shibuya-ku, Tokyo 151-8558, Japan

Dear Mr. YOKOKURA :

In pursuance to the discussions on the Basic Design Study of the Infanta Impounding and Environmental Improvement Project with your Team and PGP side, I am submitting hereunder the following documentations, to wit :

1. PGP Justifications of the Project approval and eventual implementation contrary to JICA's position of possible cancellation or rejection of said project,
2. PGP Livelihood Assistance Program for the Resettlers at Project Resettlement Area,
3. Minutes of the Meeting dated February 16, 1998, between JICA Mission and PGP side, and
4. Copy of Infanta Mayor Melchor Mallare's letter giving assurance that the MOA for the farmers/landowners under the Project coverage, be signed and approved, soonest.

Please reconsider JICA's position and approve the Project with its planned components.

Thank you and best wishes for your goodself.

Very truly yours,
For & In Behalf
of the Governor :

V. M. SEVILLEJA
Project Manager
Infanta Irrigation Dam Project



JUSTIFICATIONS OF THE PROJECT BY PGP
(Infanta Impounding Irrigation & Environmental Improvement Project)

PGP would like to state that JICA explanation is unclear and not justified in rejecting the Project including its original components, under the following reasons/justifications:

1. The unsuitable area for rice production in the proposed resettlement area is only 12.44% according to the BSWM Report. PGP soil experts under OPAG including BSWM, and the farmers living nearby project considered that most of the resettlement area for farmlands can be improved with agricultural preparations and fertilizer applications to attain high suitability of the soil upon the supply of irrigation water, and the construction of irrigation canals which is not costly.
2. The Mt. Pinatubo victims numbering 70 identified families are very willing to be settled at the identified resettlement area of the project without irrigated farmlands. PGP will assist them in their livelihood as shown in the Livelihood Assistance Program for resettlers.
3. It is not justifiable at all to exclude the dam component of the project by reason of the cancellation of the resettlement area. The resettlement of the Pinatubo victims is only one of the components and objectives of the Project.
4. The JICA Mission stated that the Project cost may increase remarkably according to available geological surveys and explorations. JICA may scale down the cost of the project without changing the basic components as originally planned.
5. PGP side have to admit on some delays of particular preparatory documentations such as MOA with landowners concerned, EIS for the eventual ECC approval by DENR, ICC clearance by NEDA, and operation and maintenance plans, survey of required data of the Mt. Pinatubo Victims and the corresponding MOA with the Mt. Pinatubo Commission.

However, PGP have already made good progress on these matters, and presently, only few remaining documentations and concerns be completed soonest.

6. The preliminary surveys and studies of JICA Mission came to Pangasinan in November, 1995. Since then, this is the 6th JICA Mission to Pangasinan and to Infanta project site. During these 3 years, PGP have undertaken various activities and spent enormous amount of funds in streamflow measurements of 2-rivers for water availability, survey works at resettlement, dam site, reservoir areas, and necessary manpower deployments at project in pursuance to JICA's many requirements.
7. DENR has already approved the Environmental Compliance Certificate (ECC) and has given the go-signal to proceed in the implementation of the Project.

JICA's possible cancellation of the project is surprising and sudden without justifiable basis, after so long and tedious processes of activities and documentations have been undertaken by PGP. Japan through JICA is now bringing up this issue of possible cancellation of the project after almost 3 years which PGP considers it as not a good management and utterly lack of planning decision of JICA.



PGP LIVELIHOOD ASSISTANCE PROGRAM FOR RESETTLERS

(Infanta Impounding Irrigation & Environmental Improvement Project)

A. To be Employed as Laborers/Construction Workers, and other available Positions for:

1. The Actual Constructions of the 4-Components of the Project,
2. The 5-Year Reforestation Program of DENR at the Watershed Area/ Nursery Site of Project, particularly on:
 - a. Nursery building construction and site development.
 - b. Seedling propagations including preparation of back packs and baskets for transporting the seedlings for planting to watershed area.
 - c. Watershed site preparation including clearing and digging of holes at measured distances for the planting of the seedlings.
 - d. Planting of the seedlings and proper fertilizer applications.
 - e. Maintenance : Weeding out undesirable grasses and cultivation activities of planted seedlings for twice a year (before and after rainy season).

B. Credit Loans Assistance for :

1. Backyard livestock raising, and fishing at running rivers.
2. Diversified crop productions and fruit trees planting with ready market outlets.
3. Bamboo and rattan planting, and furniture making with bamboo/rattan materials and transport to market outlets.

C. Livelihood of the Mt. Pinatubo victims at the resettlement site would not be serious problem because people of their tribes survive life at any given situation or crisis. This is a fact of life of mountain people in the Philippines.

**MINUTES OF THE MEETING OF THE PROVINCIAL GOVERNMENT OF
PANGASINAN WITH THE JICA
URDUJA HOUSE, LINGAYEN, PANGASINAN**

DATE : February 16, 1998
TIME : 10:00 A.M.

PRESENT:

Jesus F. Fernandez	-	Consultant-PGO
Tomas E. Teja	-	PPDO/PACE
V.M. Sevilleja	-	Consultant-PGO
Manuel Casaclang	-	Consultant-PGO
Alfonso Soriano	-	Provincial Legal Officer
Melchor Mallare	-	Mayor, Infanta, Pangasinan
Filomeno O. Rosario	-	Provincial Agriculturist
Alvin Bigay	-	PHUDCO
Norma Untalan	-	PPDO/PACE
Benedicto L. Lacson	-	NEDA Reg. I
Hirosho Okada	-	JICA/Consultant
Tetsuji Iida	-	JICA Manila Office
Shoshiro Horigome	-	JICA Tokyo
Junji Yokokura	-	JICA Tokyo (Team Leader)
Hakushi Hamaoaka	-	JICA Tokyo
Masanobu Sakurai	-	JICA
Edigardo Domingo	-	INA Corporation Manila
Rowena V. Ignacio	-	PPDO
Ramon V. Claveria	-	OPAG
Edwin L. Bagay	-	OPAG
Nancy Fernandez	-	PGO
Arsenio Melanio	-	Brgy. Captain
Edwin P. Millano	-	DENR-PENRO Dagupan City

Before the meeting started, Mr. Fernandez introduced the officials present in the said meeting under the provincial government of Pangasinan and a representative from NEDA to the JICA Mission. Mr. Yokokura, JICA also introduced the representatives from JICA Mission which were present during the meeting. Mr. Yokokura said that they have prepared a final draft report and submitted copies of their Basic Study Report on the Project (Infanta Impounding Irrigation and Environmental Improvement Project). According to him, this

study was conducted by Joint Venture of INA Corporation and Naigai Engineering Co., Ltd. under a contract to JICA for the period October 2, 1996 to March 31, 1997 and also during the period from June 16, 1997 to March 1998. He said that in conducting the study, they have examined the feasibility and rationale of the project with due consideration to the present situation of the Philippines and formulated the most appropriate basic design for the project under Japan's grant aid scheme.

Mr. Okada gave the briefing on the Infanta Impounding Irrigation and Environmental Improvement Project General Plan drawn by an artist. In said plan, municipality of Infanta, Nayom River, Dam, Reservoir and Road can be seen. At the right side of path a new village can also be seen which is proposed as the resettlement area. Mr. Okada informed the body that in the said General Plan, there are six (6) components. First component is the dam construction which has 34 meters in height, second component is the irrigation area with total area of 1,180 hectares. New canal will also be constructed from the dam to said area. Third one is the roads. There are two (2) roads. The barangay road located on the northern part is approximately is approximately 7 kilometers. It includes also two new bridges and the rehabilitation of two bridges. This road is connected with the resettlement area. Another road is a road surrounding the proposed resettlement area approximately 17 kilometers which is new route but some portion is existing one. This road is expected to be used for restoration activities. Fourth component is the resettlement area approximately 70 families from Mt. Pinatubo victims will be accommodated. Fifth component is the Nursery Area which has 2.35 hectare. And the sixth component, for construction of roads and canals there are maintenance equipment needed like 1 unit each of motor grader, dump truck, backhoe and bulldozer.

Mr. Yokokura informed the body that the improvement of poor quality of soil condition in the resettlement area is difficult. Engr. Sevilleja said that only 12.44% at Resettlement is poor quality soil which can be improved. The irrigable area is about 1,180 hectares and there is no problem as to the suitability of the soil. As a matter of fact, it can even be seen and verified to the project site. He informed the body that ricegrains grow fast in said irrigable area. Mr. Yokokura said that the area of approximately 220 hectares which was proposed for the farming land would not be necessary due to poor soil conditions. In addition, he said that it is not possible to construct a dam on said site but before that, dam foundation should first be known as it may cost a lot. However, Engr. Sevilleja said that the National Irrigation Administration has conducted its investigation and they did not find any technical difficulty in the design of the dam. Mr. Yokokura also said that one of the major considerations for the project is the benefit that it will bring to the Pinatubo victims.

Mr. Horigome said that level of the dam foundation is very low compared with the original designed dam. So deep excavation is needed for the dam. Improving the highly permeability zone will increase the dam construction cost. In addition, he said that water volume of the dam is changed from 9.5 million cu. meter to 4.5 cu. million meter. He said that dam cost will increase due to the geological effect.

Furthermore, he informed that their mission decided to put an end to the project. Final decision will be made by the Japanese government. Engr. Sevilleja asked about the basis of their conclusion with regards to the possible cancellation of the dam project as the data available will show favorable data for design. He said that some technical experts from JICA were sent here like an expert for dam design, and geologist but they did not give negative findings.

Mr. Fernandez said that when this project was being designed, it was not properly amplified that one of the major considerations to JICA are the Mt. Pinatubo victims. The main consideration is the benefit that will redound to the residents not only in Infanta but also with the adjoining towns in western Pangasinan. He said that the provincial government really did concentrate on said aspect. It was only during the conference between JICA and Provincial Government of Pangasinan several months ago that such major consideration was stressed by JICA. He said that the body should come up with some levelling off the project. All their plans and efforts have been directed towards realization that this project will be beneficial to the population of 3 to 5 towns. He said that the provincial government of Pangasinan would like to continue the project to give some relief to our brothers from Tarlac who are victims of Mt. Pinatubo.

He further informed that Pangasinan government would like JICA to start from a wider point of view. He asked the JICA to consider a broader framework so as not to disregard the project. He said that they are appealing to the people who are in the decision making processes to consider it. With regards to the design of the dam which is only a secondary consideration whatever technical aspect that will be encountered, it could be addressed by competent people. The design could be revised. He asked JICA to consider that a lot of people will be on the same situation in the same level of under development or same level of poverty if the JICA project will not push through.

However, Engr. Sevilleja said that 12.44 % is unsuitable (according to the BSWM report) so the balance is a bigger area. He informed the body that the provincial government has the listing of 70 Mt. Pinatubo families for the resettlement area. Now, as to the area of the irrigation system, people are

harvesting their regular crop but not enough because of lack of water, so the province of Pangasinan will appeal strongly that the components of the project should remain intact including the dam irrigation system, reservoir and some resettlement area although reduced in its area.

Mr. Yokokura said that one time when they went to the Municipality of Infanta and they met several land owners and they are reluctant to move in that area. He said that they are very much concerned about the social program of the area. With regards to engineering matter, it is okay. Engr. Sevilleja informed the body that the Mt. Pinatubo victims to be resettled will be given employment as laborers, construction workers and other available positions for: actual construction of the components of the project, the five year reforestation program of the DENR, the seedling propagations including baskets for transporting the seedlings for planting to watershed areas. Aside from employment area, we have the credit loans assistance wherein settlers be coordinated in such a way they can organized into credit association which is being recognized by the law of the Philippines. The area of the resettlement for each family is 1,200 square meters, big enough to have backyard livestock like raising chicken. Second is the fruit trees planting with ready market outlets. Bamboo and ratan planting and they can make furniture making with bamboo and rattan materials and transport them to market outlets.

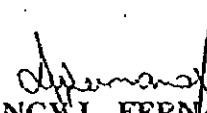
Engr. Bigay said that he has already gathered the list of the Mt. Pinatubo victims and there are three hundred people identified but only seventy families will be chosen for the resettlement area. He said that these seventy families are not aetas but they are upland and low land farmers. In addition, he said that said list was already submitted to the Mt. Pinatubo Commission for proper validation as these names will be incorporated in the Memorandum of Understanding.

Mr. Horigome said that construction of dam cost very high. Cost will be two times. Engr. Sevilleja informed that this is already the 6th mission from JICA which started last 1995 and since then several JICA trips with the JICA Consultants have been going to the project site and people were given serious commitment that the project will push through. And if the JICA will not push through with said project, everything will go to waste and it will be a big blunder on the part of JICA and the government of Japan. Only to decide or cancel the project and reaching a level up to three years is an irony against the management of Japan. Components can be possibly modified but not to remove entirely because that is a commitment to the people, the province and people of Infanta. Mr. Fernandez said that original design could be revised. Resettlement area can be reduced and also the Nursery area so it is already a big slash in terms of modification and money involved.

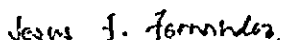
However, Mr. Fernandez asked the JICA representatives to reconsider their decision to cancel project as people are expecting it to push through.

Meeting adjourned at 11:30 A.M.

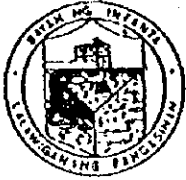
Prepared by:


NANCY L. FERNANDEZ
Administrative Assistant

NOTED BY:


JESUS F. FERNANDEZ
PGO-Consultant


V. M. SEVILLEJA
Project Manager
Infanta Project



Republic of the Philippines
Province of Pangasinan
MUNICIPALITY OF INFANTA

--000--

OFFICE OF THE MUNICIPAL MAYOR

17 February 1998

Gov. Oscar M. Orbos
Provincial Governor
Urduja House, Lingayen
Pangasinan

Attention: Engr. Vic M. Sevilleja
Consultant

Dear Gov. Orbos:

This is to report to you as of to date, the landowners at the reservoir site of the proposed Infanta Water Impounding Project are willing to sign the Memorandum of Agreement except the following:

1. Dr. Elpidio Licalde, Sr.
2. Mr. Dominador Miano

The two (2) are demanding higher pay for their lands and negotiations are still on-going.

Thank you and Mabuhay.

Very truly yours,


MELCHOR M. MALLARE
Municipal Mayor

Appendix 5. Cost Estimation borne by the Recipient Country

The Philippine's share in the expenses to implement the project are as follows.

	Items	Cost (pesos)
1.	Acquisition of land	1,800,000
	1) New irrigation canal and new road	
	2) Resettlement area and Nursery etc.	
	3) Dam and reservoir	
2.	Compensation for Resettler	1,000,000
	1) Farmers in submerged area	
	2) Farmers in the resettlement area	
3.	Construction of Secondary and Tertiary irrigation canal	1,000,000
4.	Seedling cost of the nursery	1,000,000
5.	Construction cost of the house in the resettlement area	5,000,000
6.	Construction cost of electric power distribution lines for the resettlement area	3,000,000
7.	Cost of supervision during implementation period (Philippines side)	1,000,000
8.	Payment of charges for the Japanese foreign exchange bank based on the bank agreement	1,000,000
	Total	14,800,000 Pesos

Appendix 6 Other Relevant Data

The relevant data are listed below and attached from the following page. The number of each data is arranged for a respective section/chapter for the easy reference.

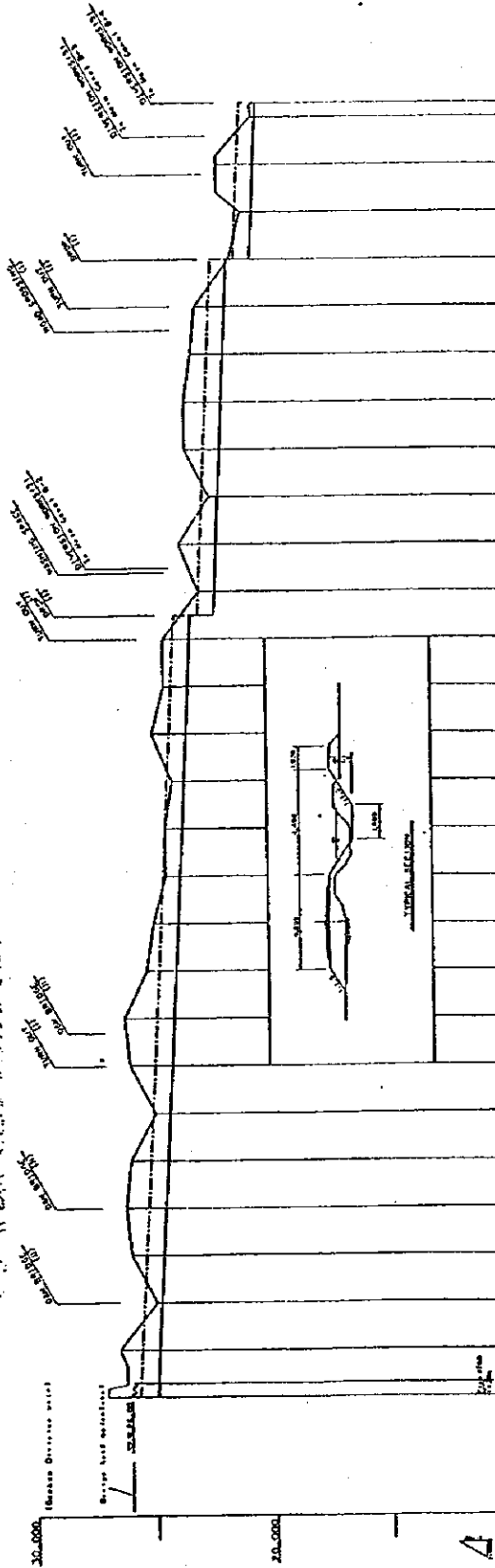
Data 2.3.2.1- 1	Profiles of Irrigation Canals (Drawings)
Data 2.3.2.1- 2	Water Balance Calculation
Data 2.3.2.2- 1	Selection of Dam Axis
Data 2.3.2.2- 2	Geology of the Project Area (The Results of Geological Survey)
Data 2.3.2.2- 3	Location map of Material Survey and Proposed Borrow Area & Quarry Site
Data 2.3.2.3- 1	Stability Analyses of Dam
Data 2.3.2.3- 2	Seepage Analyses of Dam
Data 2.3.2.3- 3	Study on Spillway
Data 2.3.2.6- 1	Soil and Land Resources Survey and Interpretation (Soil Survey in the Proposed Resettlement Area by BSWM)
Data 2.3.2.8 - 1	Implementation (Operation & Maintenance) Plan for Dam and Irrigation Facilities (prepared by PGP/NIA)
Data 2.3.2.8 - 2	Implementation (Operation & Maintenance) Plan for Forestation (prepared by PGP/DENR)
Data 2.3.2.8 - 3	Implementation (Operation & Maintenance) Plan for Resettlement (prepared by PGP)
Data 2.3.2.8 - 4	Memorandum of Agreement between PGP and NIA
Data 2.3.2.8 - 5	Memorandum of Agreement between PGP and BSWM (Draft)
Data 2.3.2.8 - 6	Memorandum of Understanding between PGP and MPC(Draft)
Data 2.3.2.8 - 7	ECC Approval
Data 2.3.2.8 - 8	Certification of Budget for 1998 (for Infanta)
Data 3.1- 1	Study on River Diversion

Data 2.3.2.1- 1 Profiles of Irrigation Canals (Drawings)

Data 2.3.2.1-1-1

Appendix 6

PLAN AND PROFILE OF MAIN CANAL B-1

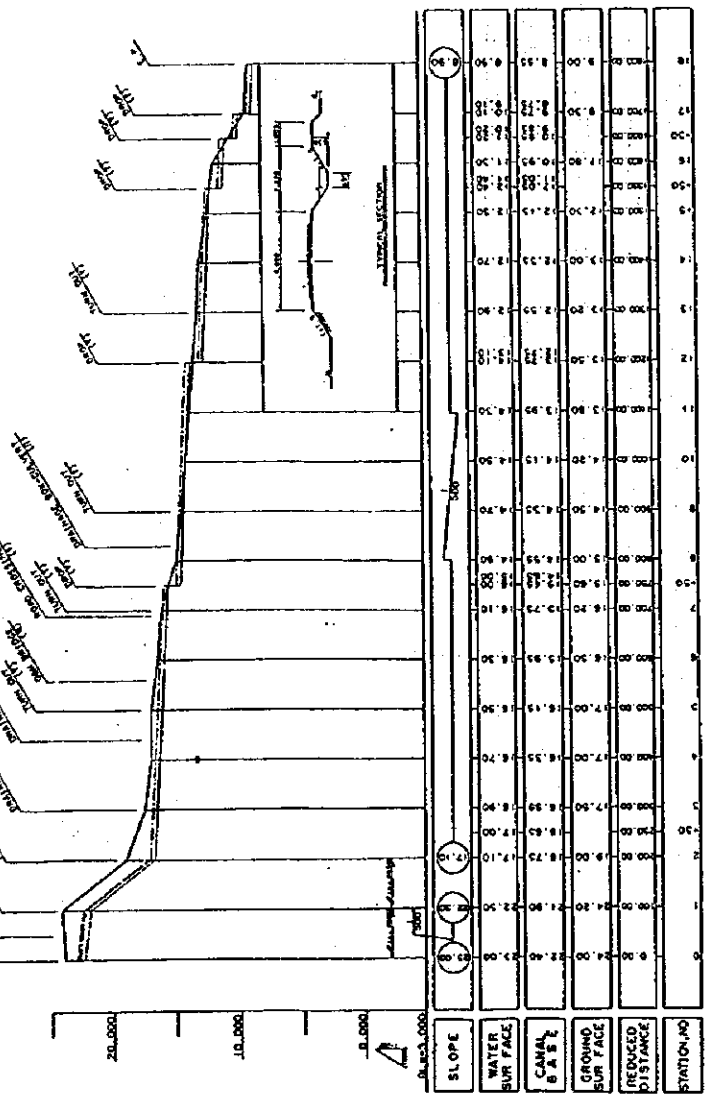
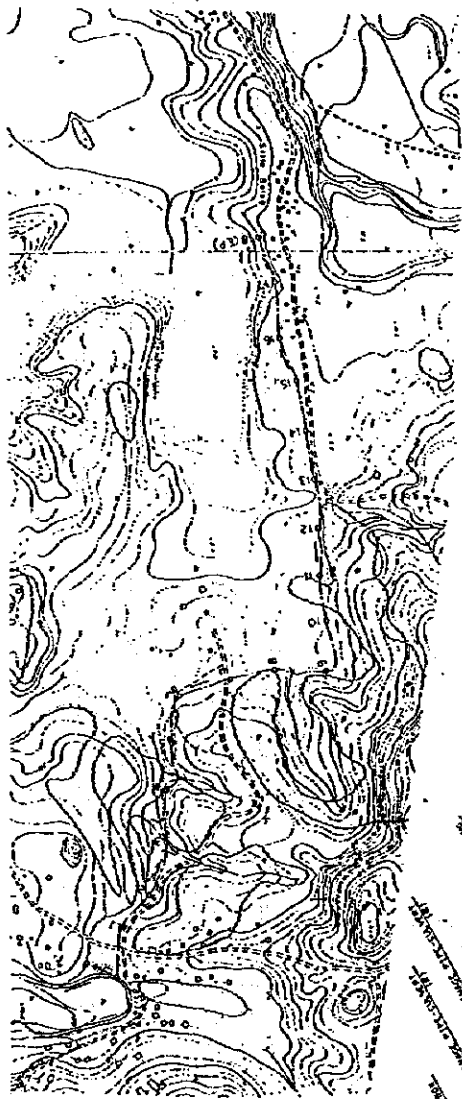


STATION NO.	REDUCED DISTANCE	GROUND SUR FACE	CANAL BASE	WATER SUR FACE	SLOPE
0	0.00	23.70	23.00	23.70	0.00
1	1.00	23.60	23.00	23.60	0.00
2	2.00	23.50	23.00	23.50	0.00
3	3.00	23.40	23.00	23.40	0.00
4	4.00	23.30	23.00	23.30	0.00
5	5.00	23.20	23.00	23.20	0.00
6	6.00	23.10	23.00	23.10	0.00
7	7.00	23.00	23.00	23.00	0.00
8	8.00	22.90	23.00	22.90	0.00
9	9.00	22.80	23.00	22.80	0.00
10	10.00	22.70	23.00	22.70	0.00
11	11.00	22.60	23.00	22.60	0.00
12	12.00	22.50	23.00	22.50	0.00
13	13.00	22.40	23.00	22.40	0.00
14	14.00	22.30	23.00	22.30	0.00
15	15.00	22.20	23.00	22.20	0.00
16	16.00	22.10	23.00	22.10	0.00
17	17.00	22.00	23.00	22.00	0.00
18	18.00	21.90	23.00	21.90	0.00
19	19.00	21.80	23.00	21.80	0.00
20	20.00	21.70	23.00	21.70	0.00
21	21.00	21.60	23.00	21.60	0.00
22	22.00	21.50	23.00	21.50	0.00
23	23.00	21.40	23.00	21.40	0.00
24	24.00	21.30	23.00	21.30	0.00
25	25.00	21.20	23.00	21.20	0.00
26	26.00	21.10	23.00	21.10	0.00
27	27.00	21.00	23.00	21.00	0.00
28	28.00	20.90	23.00	20.90	0.00
29	29.00	20.80	23.00	20.80	0.00
30	30.00	20.70	23.00	20.70	0.00
31	31.00	20.60	23.00	20.60	0.00
32	32.00	20.50	23.00	20.50	0.00
33	33.00	20.40	23.00	20.40	0.00
34	34.00	20.30	23.00	20.30	0.00
35	35.00	20.20	23.00	20.20	0.00
36	36.00	20.10	23.00	20.10	0.00
37	37.00	20.00	23.00	20.00	0.00
38	38.00	19.90	23.00	19.90	0.00
39	39.00	19.80	23.00	19.80	0.00
40	40.00	19.70	23.00	19.70	0.00
41	41.00	19.60	23.00	19.60	0.00
42	42.00	19.50	23.00	19.50	0.00
43	43.00	19.40	23.00	19.40	0.00
44	44.00	19.30	23.00	19.30	0.00
45	45.00	19.20	23.00	19.20	0.00
46	46.00	19.10	23.00	19.10	0.00
47	47.00	19.00	23.00	19.00	0.00
48	48.00	18.90	23.00	18.90	0.00
49	49.00	18.80	23.00	18.80	0.00
50	50.00	18.70	23.00	18.70	0.00
51	51.00	18.60	23.00	18.60	0.00
52	52.00	18.50	23.00	18.50	0.00
53	53.00	18.40	23.00	18.40	0.00
54	54.00	18.30	23.00	18.30	0.00
55	55.00	18.20	23.00	18.20	0.00
56	56.00	18.10	23.00	18.10	0.00
57	57.00	18.00	23.00	18.00	0.00
58	58.00	17.90	23.00	17.90	0.00
59	59.00	17.80	23.00	17.80	0.00
60	60.00	17.70	23.00	17.70	0.00
61	61.00	17.60	23.00	17.60	0.00
62	62.00	17.50	23.00	17.50	0.00
63	63.00	17.40	23.00	17.40	0.00
64	64.00	17.30	23.00	17.30	0.00
65	65.00	17.20	23.00	17.20	0.00
66	66.00	17.10	23.00	17.10	0.00
67	67.00	17.00	23.00	17.00	0.00
68	68.00	16.90	23.00	16.90	0.00
69	69.00	16.80	23.00	16.80	0.00
70	70.00	16.70	23.00	16.70	0.00
71	71.00	16.60	23.00	16.60	0.00
72	72.00	16.50	23.00	16.50	0.00
73	73.00	16.40	23.00	16.40	0.00
74	74.00	16.30	23.00	16.30	0.00
75	75.00	16.20	23.00	16.20	0.00
76	76.00	16.10	23.00	16.10	0.00
77	77.00	16.00	23.00	16.00	0.00
78	78.00	15.90	23.00	15.90	0.00
79	79.00	15.80	23.00	15.80	0.00
80	80.00	15.70	23.00	15.70	0.00
81	81.00	15.60	23.00	15.60	0.00
82	82.00	15.50	23.00	15.50	0.00
83	83.00	15.40	23.00	15.40	0.00
84	84.00	15.30	23.00	15.30	0.00
85	85.00	15.20	23.00	15.20	0.00
86	86.00	15.10	23.00	15.10	0.00
87	87.00	15.00	23.00	15.00	0.00
88	88.00	14.90	23.00	14.90	0.00
89	89.00	14.80	23.00	14.80	0.00
90	90.00	14.70	23.00	14.70	0.00
91	91.00	14.60	23.00	14.60	0.00
92	92.00	14.50	23.00	14.50	0.00
93	93.00	14.40	23.00	14.40	0.00
94	94.00	14.30	23.00	14.30	0.00
95	95.00	14.20	23.00	14.20	0.00
96	96.00	14.10	23.00	14.10	0.00
97	97.00	14.00	23.00	14.00	0.00
98	98.00	13.90	23.00	13.90	0.00
99	99.00	13.80	23.00	13.80	0.00
100	100.00	13.70	23.00	13.70	0.00

インファンタ地区式水渠
環境整備計画基本設計調査
国際協力事業団

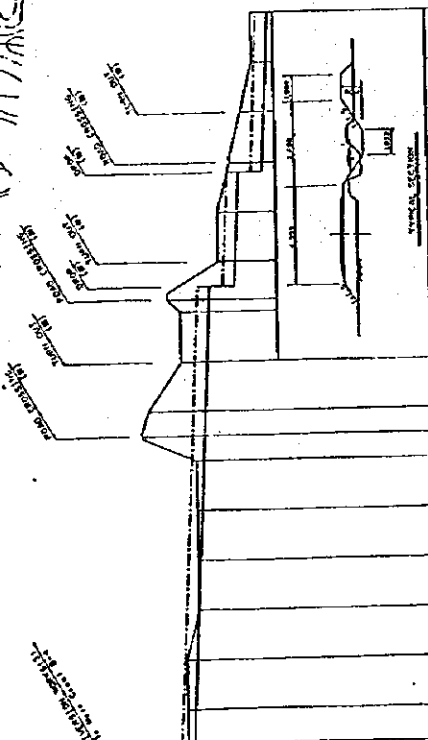
PLAN AND PROFIL OF MAIN CANAL B-1

PLAN AND PROFILE OF MAIN CANAL B-2



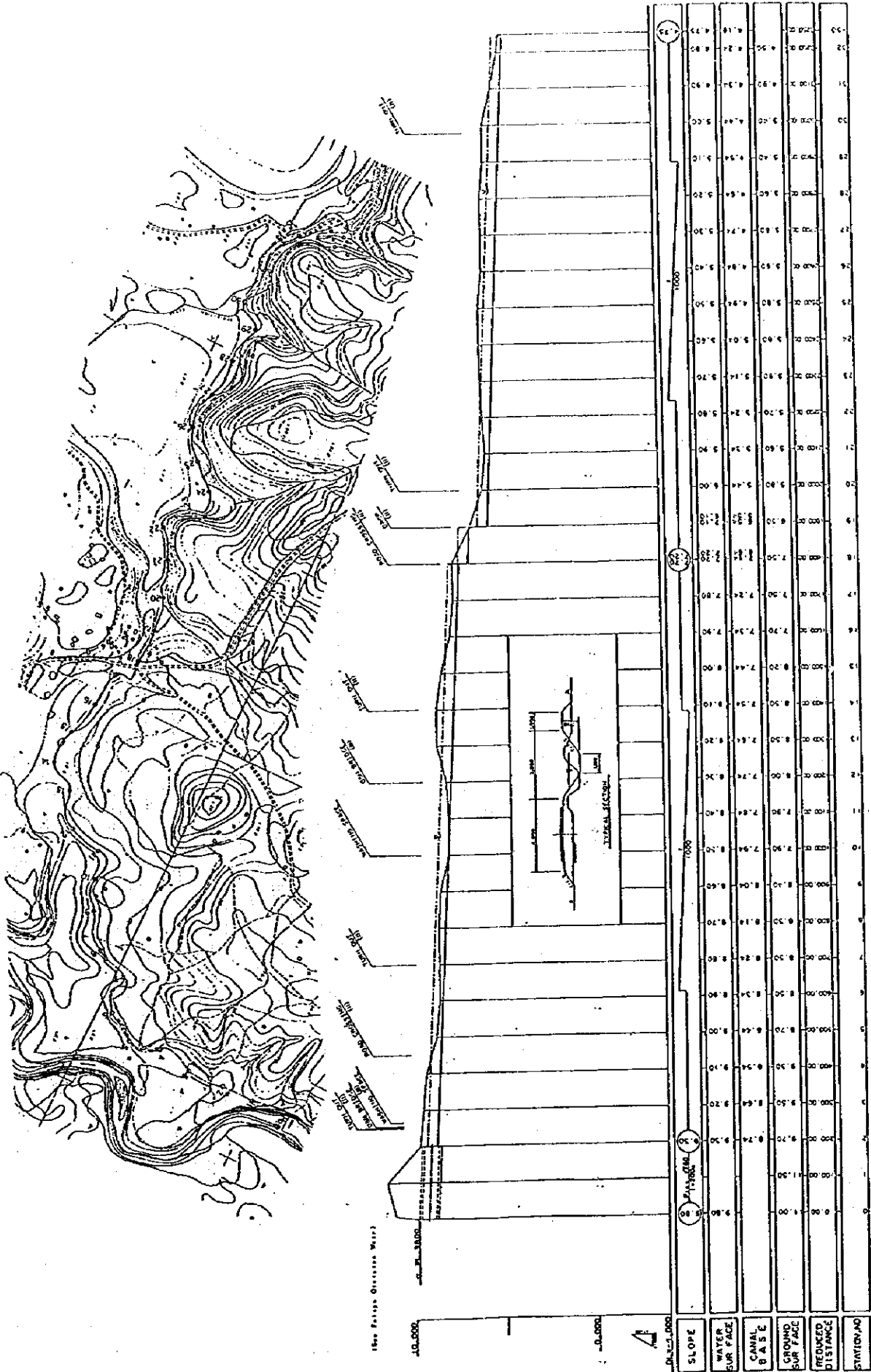
STATION NO	REDUCED SURFACE DISTANCE	GROUND SURFACE	CANAL BASE	WATER SURFACE	SLOPE
0	0.00	2.40	2.40	2.40	0.00
1	1.00	2.40	2.40	2.40	0.00
2	2.00	7.00	7.00	7.00	0.00
3	3.00	7.50	7.50	7.50	0.00
4	4.00	7.00	7.00	7.00	0.00
5	5.00	6.50	6.50	6.50	0.00
6	6.00	6.00	6.00	6.00	0.00
7	7.00	5.50	5.50	5.50	0.00
8	8.00	5.00	5.00	5.00	0.00
9	9.00	4.50	4.50	4.50	0.00
10	10.00	4.00	4.00	4.00	0.00
11	11.00	3.50	3.50	3.50	0.00
12	12.00	3.00	3.00	3.00	0.00
13	13.00	2.50	2.50	2.50	0.00
14	14.00	2.00	2.00	2.00	0.00
15	15.00	1.50	1.50	1.50	0.00
16	16.00	1.00	1.00	1.00	0.00
17	17.00	0.50	0.50	0.50	0.00
18	18.00	0.00	0.00	0.00	0.00
19	19.00	0.00	0.00	0.00	0.00
20	20.00	0.00	0.00	0.00	0.00
21	21.00	0.00	0.00	0.00	0.00
22	22.00	0.00	0.00	0.00	0.00
23	23.00	0.00	0.00	0.00	0.00
24	24.00	0.00	0.00	0.00	0.00
25	25.00	0.00	0.00	0.00	0.00
26	26.00	0.00	0.00	0.00	0.00
27	27.00	0.00	0.00	0.00	0.00
28	28.00	0.00	0.00	0.00	0.00
29	29.00	0.00	0.00	0.00	0.00
30	30.00	0.00	0.00	0.00	0.00
31	31.00	0.00	0.00	0.00	0.00
32	32.00	0.00	0.00	0.00	0.00
33	33.00	0.00	0.00	0.00	0.00
34	34.00	0.00	0.00	0.00	0.00
35	35.00	0.00	0.00	0.00	0.00
36	36.00	0.00	0.00	0.00	0.00
37	37.00	0.00	0.00	0.00	0.00
38	38.00	0.00	0.00	0.00	0.00
39	39.00	0.00	0.00	0.00	0.00
40	40.00	0.00	0.00	0.00	0.00
41	41.00	0.00	0.00	0.00	0.00
42	42.00	0.00	0.00	0.00	0.00
43	43.00	0.00	0.00	0.00	0.00
44	44.00	0.00	0.00	0.00	0.00
45	45.00	0.00	0.00	0.00	0.00
46	46.00	0.00	0.00	0.00	0.00
47	47.00	0.00	0.00	0.00	0.00
48	48.00	0.00	0.00	0.00	0.00
49	49.00	0.00	0.00	0.00	0.00
50	50.00	0.00	0.00	0.00	0.00
51	51.00	0.00	0.00	0.00	0.00
52	52.00	0.00	0.00	0.00	0.00
53	53.00	0.00	0.00	0.00	0.00
54	54.00	0.00	0.00	0.00	0.00
55	55.00	0.00	0.00	0.00	0.00
56	56.00	0.00	0.00	0.00	0.00
57	57.00	0.00	0.00	0.00	0.00
58	58.00	0.00	0.00	0.00	0.00
59	59.00	0.00	0.00	0.00	0.00
60	60.00	0.00	0.00	0.00	0.00
61	61.00	0.00	0.00	0.00	0.00
62	62.00	0.00	0.00	0.00	0.00
63	63.00	0.00	0.00	0.00	0.00
64	64.00	0.00	0.00	0.00	0.00
65	65.00	0.00	0.00	0.00	0.00
66	66.00	0.00	0.00	0.00	0.00
67	67.00	0.00	0.00	0.00	0.00
68	68.00	0.00	0.00	0.00	0.00
69	69.00	0.00	0.00	0.00	0.00
70	70.00	0.00	0.00	0.00	0.00
71	71.00	0.00	0.00	0.00	0.00
72	72.00	0.00	0.00	0.00	0.00
73	73.00	0.00	0.00	0.00	0.00
74	74.00	0.00	0.00	0.00	0.00
75	75.00	0.00	0.00	0.00	0.00
76	76.00	0.00	0.00	0.00	0.00
77	77.00	0.00	0.00	0.00	0.00
78	78.00	0.00	0.00	0.00	0.00
79	79.00	0.00	0.00	0.00	0.00
80	80.00	0.00	0.00	0.00	0.00
81	81.00	0.00	0.00	0.00	0.00
82	82.00	0.00	0.00	0.00	0.00
83	83.00	0.00	0.00	0.00	0.00
84	84.00	0.00	0.00	0.00	0.00
85	85.00	0.00	0.00	0.00	0.00
86	86.00	0.00	0.00	0.00	0.00
87	87.00	0.00	0.00	0.00	0.00
88	88.00	0.00	0.00	0.00	0.00
89	89.00	0.00	0.00	0.00	0.00
90	90.00	0.00	0.00	0.00	0.00
91	91.00	0.00	0.00	0.00	0.00
92	92.00	0.00	0.00	0.00	0.00
93	93.00	0.00	0.00	0.00	0.00
94	94.00	0.00	0.00	0.00	0.00
95	95.00	0.00	0.00	0.00	0.00
96	96.00	0.00	0.00	0.00	0.00
97	97.00	0.00	0.00	0.00	0.00
98	98.00	0.00	0.00	0.00	0.00
99	99.00	0.00	0.00	0.00	0.00
100	100.00	0.00	0.00	0.00	0.00

PLAN AND PROFILE OF MAIN CANAL B-5(1)



STATION NO	REDUCED DISTANCE	GROUND SURFACE	CANAL BASE	WATER SURFACE	SLOPE
0+00	0.00	10.00	9.00	9.00	0.00
0+10	10.00	9.80	8.80	8.80	0.00
0+20	20.00	9.60	8.60	8.60	0.00
0+30	30.00	9.40	8.40	8.40	0.00
0+40	40.00	9.20	8.20	8.20	0.00
0+50	50.00	9.00	8.00	8.00	0.00
0+60	60.00	8.80	7.80	7.80	0.00
0+70	70.00	8.60	7.60	7.60	0.00
0+80	80.00	8.40	7.40	7.40	0.00
0+90	90.00	8.20	7.20	7.20	0.00
1+00	100.00	8.00	7.00	7.00	0.00
1+10	110.00	7.80	6.80	6.80	0.00
1+20	120.00	7.60	6.60	6.60	0.00
1+30	130.00	7.40	6.40	6.40	0.00
1+40	140.00	7.20	6.20	6.20	0.00
1+50	150.00	7.00	6.00	6.00	0.00
1+60	160.00	6.80	5.80	5.80	0.00
1+70	170.00	6.60	5.60	5.60	0.00
1+80	180.00	6.40	5.40	5.40	0.00
1+90	190.00	6.20	5.20	5.20	0.00
2+00	200.00	6.00	5.00	5.00	0.00
2+10	210.00	5.80	4.80	4.80	0.00
2+20	220.00	5.60	4.60	4.60	0.00
2+30	230.00	5.40	4.40	4.40	0.00
2+40	240.00	5.20	4.20	4.20	0.00
2+50	250.00	5.00	4.00	4.00	0.00
2+60	260.00	4.80	3.80	3.80	0.00
2+70	270.00	4.60	3.60	3.60	0.00
2+80	280.00	4.40	3.40	3.40	0.00
2+90	290.00	4.20	3.20	3.20	0.00
3+00	300.00	4.00	3.00	3.00	0.00
3+10	310.00	3.80	2.80	2.80	0.00
3+20	320.00	3.60	2.60	2.60	0.00
3+30	330.00	3.40	2.40	2.40	0.00
3+40	340.00	3.20	2.20	2.20	0.00
3+50	350.00	3.00	2.00	2.00	0.00
3+60	360.00	2.80	1.80	1.80	0.00
3+70	370.00	2.60	1.60	1.60	0.00
3+80	380.00	2.40	1.40	1.40	0.00
3+90	390.00	2.20	1.20	1.20	0.00
4+00	400.00	2.00	1.00	1.00	0.00

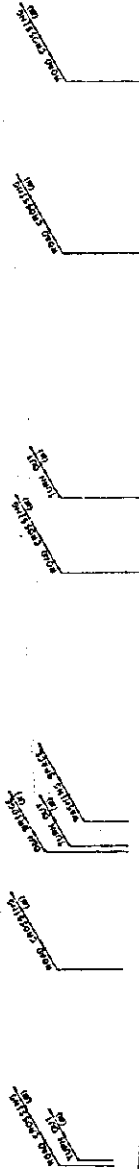
PLAN AND PROFILE OF MAIN CANAL S-1



インフアンタ地区天水農業
環境整備計画基本設計図面
国際協力事業団

PLAN AND PROFIL OF MAIN CANAL S-1

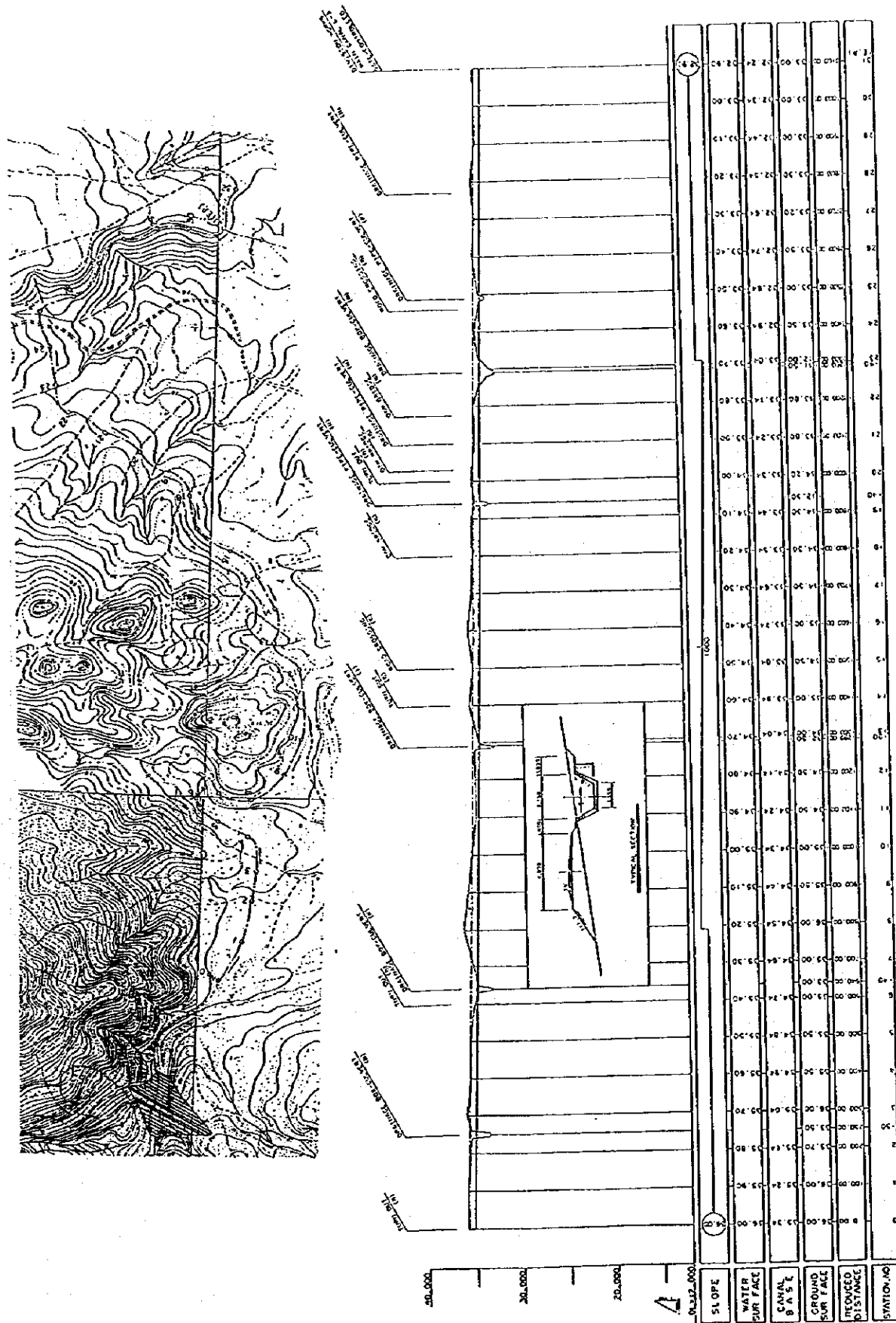
PLAN AND PROFILE OF MAIN CANAL S-2



STATION NO	REDUCED DISTANCE	GROUND SURFACE	CANAL S.A.S.E	WATER SURFACE	SLOPE
00	0.00	4.18	4.00	4.18	1:10
05	10.00	4.13	4.00	4.13	1:10
10	20.00	4.05	4.00	4.05	1:10
15	30.00	3.98	4.00	3.98	1:10
20	40.00	3.91	4.00	3.91	1:10
25	50.00	3.84	4.00	3.84	1:10
30	60.00	3.77	4.00	3.77	1:10
35	70.00	3.70	4.00	3.70	1:10
40	80.00	3.63	4.00	3.63	1:10
45	90.00	3.56	4.00	3.56	1:10
50	100.00	3.49	4.00	3.49	1:10
55	110.00	3.42	4.00	3.42	1:10
60	120.00	3.35	4.00	3.35	1:10
65	130.00	3.28	4.00	3.28	1:10
70	140.00	3.21	4.00	3.21	1:10
75	150.00	3.14	4.00	3.14	1:10
80	160.00	3.07	4.00	3.07	1:10
85	170.00	3.00	4.00	3.00	1:10
90	180.00	2.93	4.00	2.93	1:10
95	190.00	2.86	4.00	2.86	1:10
100	200.00	2.79	4.00	2.79	1:10
105	210.00	2.72	4.00	2.72	1:10
110	220.00	2.65	4.00	2.65	1:10
115	230.00	2.58	4.00	2.58	1:10
120	240.00	2.51	4.00	2.51	1:10
125	250.00	2.44	4.00	2.44	1:10
130	260.00	2.37	4.00	2.37	1:10
135	270.00	2.30	4.00	2.30	1:10
140	280.00	2.23	4.00	2.23	1:10
145	290.00	2.16	4.00	2.16	1:10
150	300.00	2.09	4.00	2.09	1:10
155	310.00	2.02	4.00	2.02	1:10
160	320.00	1.95	4.00	1.95	1:10
165	330.00	1.88	4.00	1.88	1:10
170	340.00	1.81	4.00	1.81	1:10
175	350.00	1.74	4.00	1.74	1:10
180	360.00	1.67	4.00	1.67	1:10
185	370.00	1.60	4.00	1.60	1:10
190	380.00	1.53	4.00	1.53	1:10
195	390.00	1.46	4.00	1.46	1:10
200	400.00	1.39	4.00	1.39	1:10
205	410.00	1.32	4.00	1.32	1:10
210	420.00	1.25	4.00	1.25	1:10
215	430.00	1.18	4.00	1.18	1:10
220	440.00	1.11	4.00	1.11	1:10
225	450.00	1.04	4.00	1.04	1:10
230	460.00	0.97	4.00	0.97	1:10
235	470.00	0.90	4.00	0.90	1:10
240	480.00	0.83	4.00	0.83	1:10
245	490.00	0.76	4.00	0.76	1:10
250	500.00	0.69	4.00	0.69	1:10
255	510.00	0.62	4.00	0.62	1:10
260	520.00	0.55	4.00	0.55	1:10
265	530.00	0.48	4.00	0.48	1:10
270	540.00	0.41	4.00	0.41	1:10
275	550.00	0.34	4.00	0.34	1:10
280	560.00	0.27	4.00	0.27	1:10
285	570.00	0.20	4.00	0.20	1:10
290	580.00	0.13	4.00	0.13	1:10
295	590.00	0.06	4.00	0.06	1:10
300	600.00	0.00	4.00	0.00	1:10

インファンタ地区天水農業
環境整備計画基本設計調査
国際協力事業団

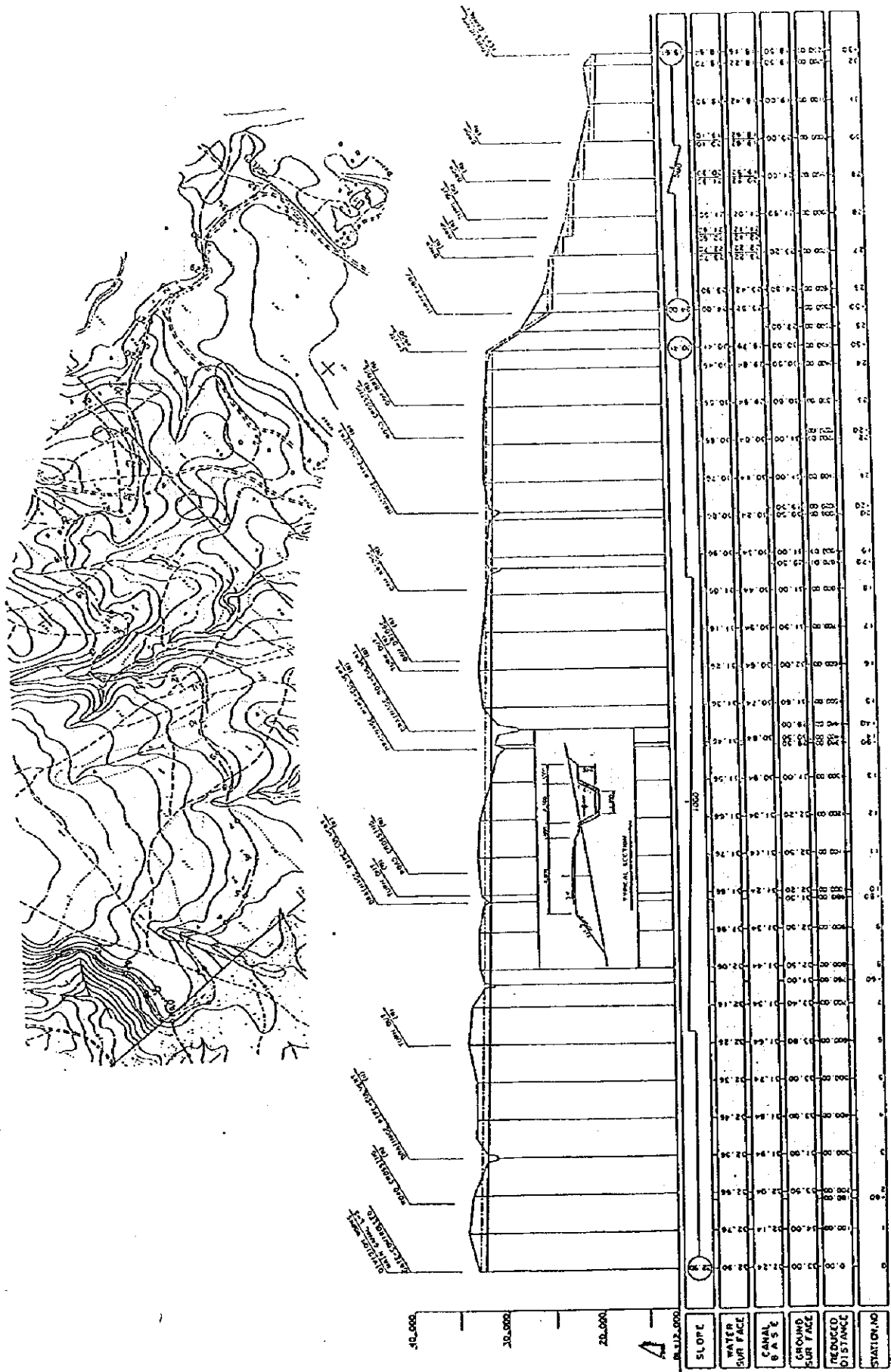
PLAN AND PROFILE OF MAIN CANAL L-1



PLAN AND PROFIL OF MAIN CANAL L-1

インフアンタ地区天水農業
環境整備計画基本設計調査
国際協力事業団

PLAN AND PROFILE OF MAIN CANAL L-2



インファンタ地区天水農業
 環境整備計画基本設計調査
 国際協力事業団

PLAN AND PROFILE OF MAIN CANAL L-2

PLAN AND PROFILE OF MAIN CANAL L-3

