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PROJECT STATUS REPORT
LIBMANAN/CABUSAO INTEGRATED AREA DEVELOPMENT
PROJECT 32 p.
(AID LOAN NO. 492 - T - 037)

Prepared for:
THE UNITED STATES AGENCY FOR INTERNATIONAL
DEVELOPMENT

By:
The National Irrigation Administration

REPORT NO. I

AUGUST 31, 1976

Republika ng Pilipinas
Pambansang Pangasiwaan ng Patubig
(NATIONAL IRRIGATION ADMINISTRATION)
(TANGGAPAN NG TAGAPANGASIWA)
Lungsod ng Quezon

1976 October 6

The Director
United States Agency for International
Development
Ramon Magsaysay Center
1680 Roxas Boulevard
Manila

Attn: Mr. John B. Saccheri
General Engineering Officer
USAID, Manila

Re: Libmanan/Cabusao Integrated Area
Development Project Status Report
No. 1 as of August 31, 1976

Sir:

We are pleased to submit for your information the appended Status Report No. 1 on the progress of implementation of the Libmanan/Cabusao Integrated Area Development Project.

We trust that in this report we have sufficiently covered all aspects of project activities to supply the necessary information you presently need.

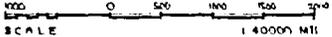
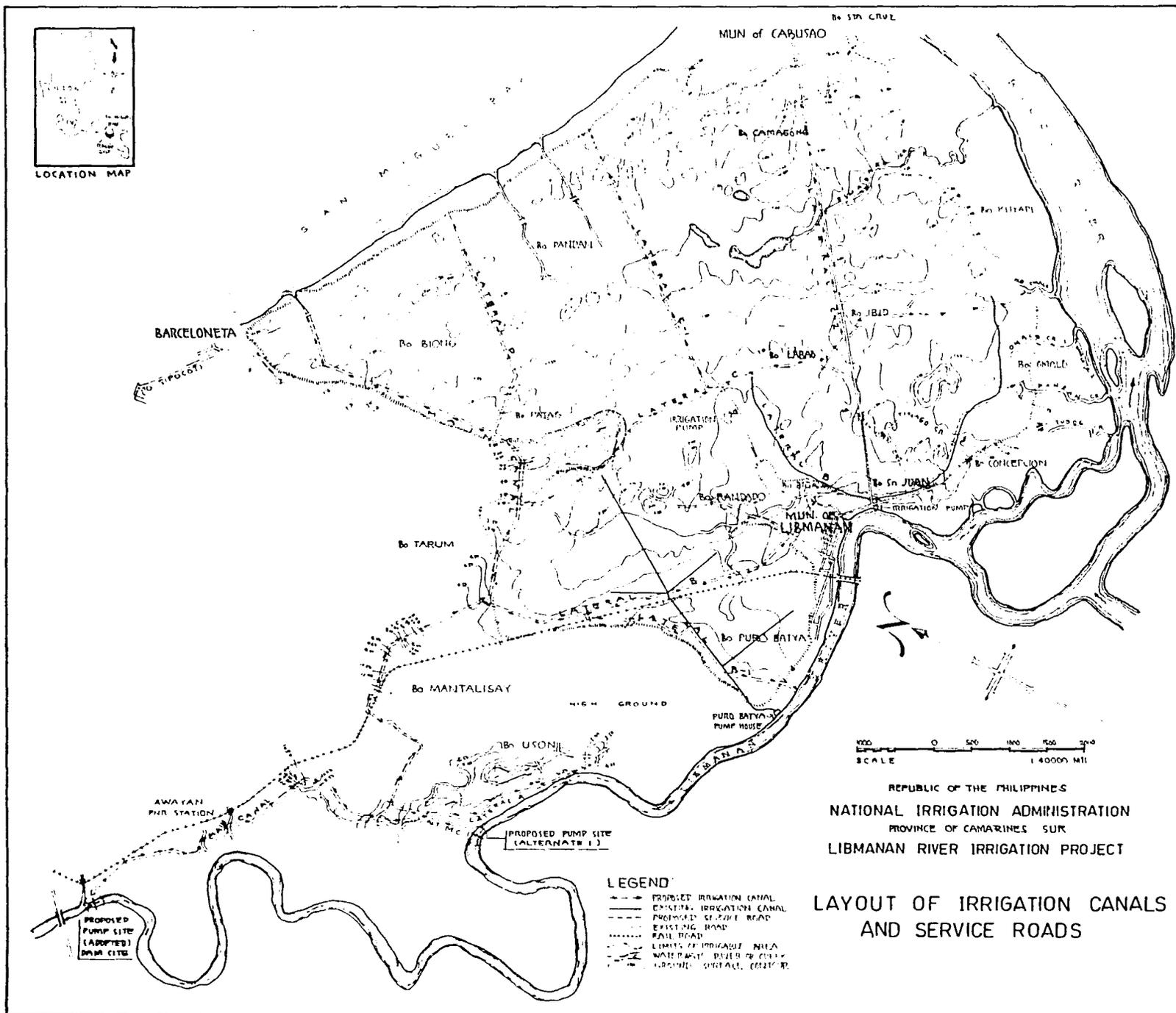
Very truly yours,



CESAR L. TECH
Assistant Administrator



LOCATION MAP



REPUBLIC OF THE PHILIPPINES
 NATIONAL IRRIGATION ADMINISTRATION
 PROVINCE OF CAMARINES SUR
 LIBMANAN RIVER IRRIGATION PROJECT

LAYOUT OF IRRIGATION CANALS
 AND SERVICE ROADS

- LEGEND**
- - - - - PROPOSED IRRIGATION CANAL
 - — — — — EXISTING IRRIGATION CANAL
 - - - - - PROPOSED SERVICE ROAD
 - — — — — EXISTING ROAD
 - — — — — RAIL ROAD
 - LINE OF INDICABLE HILLS
 - WATERWAY, DRAIN OR CREEK
 - (GROUND) SURFACE, CONTOUR

PROPOSED PUMP SITE (ADAPTED) DAM SITE

PROPOSED PUMP SITE (ALTERNATE 1)

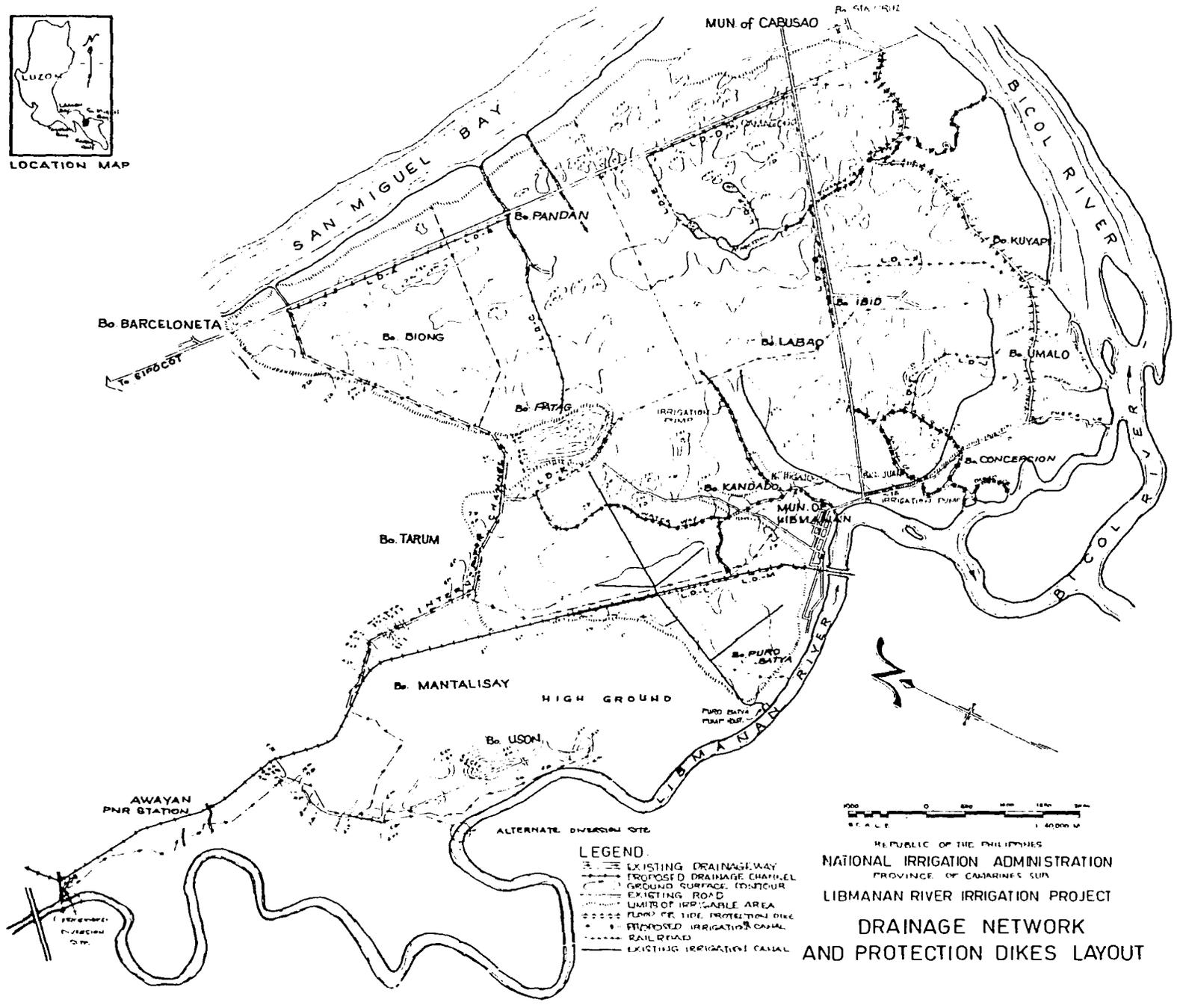
AWAYAN PWR. STATION

CANAL





LOCATION MAP



- LEGEND**
- EXISTING DRAINAGE WAY
 - - - PROPOSED DRAINAGE CHANNEL
 - GROUND SURFACE (CONTOUR)
 - EXISTING ROAD
 - LIMIT OF IRRIGABLE AREA
 - FLOOD OR TIDE PROTECTION DIKE
 - PROPOSED IRRIGATION CANAL
 - RAIL ROAD
 - EXISTING IRRIGATION CANAL



REPUBLIC OF THE PHILIPPINES
 NATIONAL IRRIGATION ADMINISTRATION
 PROVINCE OF CAMARINES SUR
 LIBMANAN RIVER IRRIGATION PROJECT
**DRAINAGE NETWORK
 AND PROTECTION DIKES LAYOUT**

C O N T E N T S

	PAGE
LETTER OF TRANSMITTAL	i
PROJECT LAYOUT	ii-iii
I. PROJECT DESCRIPTION	1
A. Project Main Features	1
B. The Institutional and Agricultural Development Program	3
II. PROJECT HISTORY	6
III. STATUS OF PROJECT IMPLEMENTATION	7
Summary	7
Force Account Works	8
Contract Works	9
Agri-Institutional Development	11
IV. FINANCIAL STATUS	18
V. PICTORIAL PROGRESS	19-20
VI. APPENDICES	21-26
VII. ORGANIZATION CHART	27

I. PROJECT DESCRIPTION

The project is planned as a pump irrigation system utilizing electricity in operating motor pumps that will be used for water diversion from the Libmanan River. The choice of the scheme was premised primarily on the anticipated availability of electric power in the area by mid 1976.

The project will require more than the normal irrigation and drainage facilities. The susceptibility of the project area to frequent flooding necessitates the construction of a flooding interceptor channel along the main canal to divert the substantial surface run-off from the water shed of about 23 square kilometers bounding the project area on the north, into the San Miguel Bay. The eastern portion of the area will need a low earth dike to ward off the twice-daily high tidal waters. Existing drainage channels will be improved and additional ones will be constructed to prevent saline intrusion and facilitate the evacuation of surface run-off that would be generated within the project area.

Due to low ground surface elevation of the service area with respect to the mean sea level and the high water table conditions, the project will be developed basically for rice-mono-culture.

A. PROJECT MAIN FEATURES:

1. DIVERSION WORKS

A pumping station for water diversion will be installed on the left bank of the Libmanan River. The pumping station will have four (4) sets of 36"Ø propeller-type pump each capable of delivering 1,450 L/S (23,000 GPH) at 65 meters TDH utilizing four 200 H.P., 3 phase, 60 cycle electric motors. Electric current will be provided by the National Electrification Administration, while distribution and transmission lines will come from the National Power Corporation.

2. CANAL NETWORKS

The canal system of the project will consist of a main canal, 15.2 kilometers long having an initial capacity of 5.8 cms and terminal capacity of 0.58 cms. The laterals and sub-laterals will have an aggregate length of 34.6 kilometers. This will have capacity ranging from 3.98 cms to 0.14 cms.

3. CANAL STRUCTURES

The canal structures to be constructed will consist of headgates, road crossings, bull cart crossings, siphon and other related structures. By considering the topography and the intended road network & development, the density of the structures will be about 2-1/2 structures to a kilometer of canal.

4. TURNOUTS AND FARM DITCHES

There will be about 90 turnouts using 12"Ø or 18"Ø R.C. pipes to be constructed for water distribution to the service area. This will have an average density of one turnout for every 50-hectares.

5. DRAINAGE FACILITIES

The almost flat topography and the susceptibility to frequent flooding of the project area necessitates the provision of an adequate drainage to prevent water logging. For this network, 78 kilometers of farm drains will be constructed. Also, about 25 kilometers of existing drainage ways will be improved.

6. SERVICE ROADS

Service roads will be constructed on one bank of the entire length of the main canal and all other canals except lateral C-2, which run parallel and close to an existing road. Road networks will have a density of 1 km. for every 55 hectares of service area.

7. DRAINAGE CHANNEL AND FLOOD/TIDE PROTECTION DIKE

To mitigate the flood problems affecting the service area, a flood channel will be constructed along the left bank of the main canal down to San Miguel Bay to intercept sizeable storm flood run-offs from the water shed area of 23 square kilometers in the north. The channel will have a capacity of 34.55 cms. at the outlet.

To serve a tidal barrier, an earth dike 6.7 kilometers long will also be constructed in the lower reaches of the Bicol river, from the Municipality of Cabusao, up to Barrio Concepcion, Libmanan. Along this dike flap gates will be installed to prevent salt water intrusion during high tide. Supplementary steel gates will also be installed to facilitate the evacuation of excessive surface-run-off generated within the project area.

A flood protection dike about 2 meters high, with 1.50 meters wide berm and about 200 meters long will also be constructed. This will protect the pumpsite from inundation from flood waters raising to as high as Elevation 13.90 M.

8. OTHER FACILITIES

Other facilities to be constructed for the project will be an administrative building, an equipment shed, a pump operators quarter, nine water tender's quarters, and three water master's quarters. A telephone system connecting strategic command points will be installed.

B. THE INSTITUTIONAL AND AGRICULTURAL DEVELOPMENT PROGRAM OF LCIADP

The Libmanan/Cabusao Integrated Area Development Project (LCIADP) focuses on the full integration of development efforts towards the maximum realization of socio-economic benefits derived from the full development of its growth resources. The project covers some 4,664 hectares, 3,873 of which are to be served by an irrigation system; directly involving 2,353 farm households and indirectly, some other 12,000 households.

The Project area has been identified as a depressed sub-basin but known for long with a rice surplus economy. Sometime 10 years ago, however, rice production gradually declined to its present average production of 38 and 45 cavans, per hectare for wet and dry seasons respectively. This situation is resultant of regular flooding to some 2,587 hectares from one week to two months. (BS, 1975, Arability and Land Classification). Thus, the provision of drainage and tidal barrier fixtures coupled with the construction of an effective irrigation system will provide concretized foundations for the accelerated development of the area.

The project seeks to maximize rice production within the project area, increase the average household income and effect a more equitable income distribution, and finally to institutionalize, the management of the area by involving its people on one hand and the government agencies on the other through Libmanan/Cabusao Integrated Area Development Project.

It is hoped that thru these integrated efforts, rice production by the 6th year shall gradually increase by about 21% (effective growth rate) from the present average production to 79 and 95 cavans per hectare. This corresponds to some 0.675 million cavans annual rice production; enough to support some 15% of the present provincial population's consumption requirement. This will in turn annually generate 2,300 man years employment, and over the 6-year time frame, will improve average household income by 34% from the present ₱3,800.00. About 80% of the households will realize an income of ₱4,000.00 by 1981, as compared to 62% presently earning below ₱3,000.00 ..

The economic benefit coupled with available farm-to-market roads will generate increased municipal gross product and establishment of agri-business to effect improved economic conditions of Libmanan and Cabusao.

The basic strategy of the project for the introduction of physical and support facilities, namely: 1) Irrigation and drainage systems, 2) Use of improved cropping pattern and water management scheme, 3) Farm mechanization, and 4) Re-orientation of existing institutional and organizational structures which would integrate various government programs into a kind of agreeable working relationship.

These facilities will accelerate the attainment of development objectives, promote cooperatives farming operations, strengthen and make more effective and meaningful the participation of the rural people to the project. Consequently , variable channels shall be established and developed for government services to the farm level.

The Institutional and Agricultural Development component of the Project therefore, shall gear towards the improvement of the basic socio-agricultural structure of the project area in order to establish and develop the local institutions that would facilitate the diffusion of improved farm business management technology to end-users in a manner that is more meaningful, productive and sustaining.

However, the placement of irrigation and drainage alone will not achieve the growth envisioned, will not sustain growth over time and will ensure efficient use and preservation of the physical infrastructures to its economic life (50 yrs.). Thus the project shall be an integration of irrigation and drainage supportive services designed to optimize the development output and ensure maximum efficient usage of physical infrastructures. Four projects are coupled with irrigation and drainage. They are: Land Reform, Compact Farm Development, Applied Research in Agriculture and the Organization and Management Mechanism through the organization of an Area Development Team/Area Development council (ADT/ADC), and an Irrigator's Association.

Land Reform seeks to sustain high incentive among farmers for sustained high productivity. Compact Farm Development shall provide the farmers a viable farm-level production group that will have access to improved farming technology. Applied Research in Agriculture shall initiate and maintain sustained changes in the adoption of improved farming practices suited to their fields.

Land Reform seeks to improve the tenurial status of farmers including the socio-economic structure and farmers support systems which largely determine farm productive capacity and income; to accelerate the implementation of operation Land Transfer and Leasehold through the fielding of additional manpower in the project area; and to stabilize the new status of farmer/tiller (as agricultural leasees and/or amortizing owners) and increase farm income through the establishment of a balanced agrarian structure, the horizontal integration of farmers via compact farms and Samahang Nayons (eventually cooperatives), infrastructural support, provisions for adequate production credit, and application of appropriate technologists.

The compact Farm concept offers a more expeditious vehicle in which packaged agricultural programs may be channeled. The contiguity of concept farm units forms a decided advantages over longer organizations because farm problems are situation specific. At the compact farm level, decisions are more focused on farm problems and, therefore are easily made. The major objectives in establishing compact farm units in the area are: to institutionalize compact farms as viable farm level management groups and efficient production units of Samahang Nayons; to develop the managerial and operational skills and capabilities of inter-agency technicians and compact farm leaders in the establishment of compact farms in the project area; to further test the concept of compact farming as an effective mechanism for on-farm water management and operation, credit extension, introduction of new technology, farm mechanization and for integrating various extension functions.

The Applied Research Project will center on activities that will confirm or demonstrate the applicability or adoptability of a superior specific agricultural technology or a package of technology in generating greater returns. The project would insure on accelerated adoptive response by farmers to productive and efficient agricultural technology by applied research conducted through the farmer beneficiaries themselves. It will also cover post harvest technology such as handling, drying, and milling including such other aspects as consumer acceptance. The project would seek the identification of production problems in the project area; formulation of possible solutions to the problems are indicated by research findings and experiences; testing on location in limited and selected farmers' fields of the research findings and experience or a proven superior technology considered as solution to the problem o hand; demonstration for acceptance of the confirmed profitable or proven superior technology; and sustained project vigilance over production problems and production levels in the project area and sustained projects' efforts to be abreast with advance in production technology for possible adoption in the project area.

The establishment of an organization and management mechanism at the service area, basin wide level, will play a major role in field operations by way of decision making, project identification, data generation, and adoption of basin wide programs to specific areas. The area Development Team (ADT) will have a nucleus of three field executives: an Area Coordinator whose main role is to draw out local participation by interacting very closely with local leaders through the Area Development Council; a Deputy Area Coordinator who shall concentrate on project implementation operations; and an Area Administrative Officer who shall provide support services to the Development Council and the implementation Team.

The ADT will function through three main bodies: the area Development Council; the Area Implementation Team; and the Area Administrative Staff.

Irrigators Association will be established at the service area through the Area Development Team.

II. PROJECT HISTORY

In 1972, a 15 member inter-agency committee, consisting of national, provincial and private agencies drew up an integrated development program

for the Bicol River Basin. This integrated program covers Land Reform, Compact Farm Development, Agricultural Credit and Rural Bank Expansion, Water Resources Development, Road Development, Rural Electrification, Livestock Development, and Fisheries Development. Through this integrated framework, the program seeks to increase the per capita income in the basin area being the lowest among the nation's II regions.

Responding positively to the program as presented, the President of the Philippines issued Executive Order 412 on May 7, 1973 creating the Bicol River Basin Council (BRBC) to implement the Bicol River Basin Development Project. The BRBC prepared a feasibility study on the project and on June 15, 1975 a feasibility report was submitted to the United States Agency for International Development.

On July 29, 1975 the USAID agrees to lend the Government of the Philippines, for the use of the National Irrigation Administration, in coordination with the Bicol River Basin Council, up to Three Million Five Hundred Thousand United States Dollars (\$3,500,000.00) to assist in financing certain foreign exchange costs of goods and services plus an agreed upon portion of the local currency costs required for the implementation of Integrated Area Development covering 3,873 hectares in the municipalities of Libmanan and Cabusao.

III. STATUS OF PROJECT IMPLEMENTATION

SUMMARY

The implementation of the Libmanan/Cabusao Integrated Area Development Project was started in late February, 1976. Thru the initiation of the Project Manager the pre-construction surveys and other pre-construction works were started. Hiring of project personnel were likewise initiated to reinforce the project staff who came mostly from NIA Region IV and BRBC.

On March 12, 1976, a public bidding for the construction of the main canal interceptor channel and appurtenant structures of the L/CIADP (LPD-C-1) was held at the NIA Central Office in Quezon City. A total of twenty three (23) firms responded to the invitation to bid and submitted the necessary Bidder's Prequalification and Confidential Statements. Out of the twenty three firms only nineteen (19) firms were prequalified by the committee to

submit proposals. Only thirteen firms submitted proposals. Heavy Equipment Rental and Construction Co. Inc., submitted the lowest complying bid with a total amount of P8,952,328.75. The Contract was entered into on May 27, 1976 and a notice to proceed was issued on June 18, 1976.

The Contractor moved into site immediately and started mobilizing his resources for the implementation of his contractual works. The Construction drawings for the proposed office site at Libmanan were prepared in June, 1976. Clearing of proposed office site was started in preparation for the construction of the Project buildings in early October, 1976. Meanwhile, project offices are temporarily housed in a rented residential building at Libmanan.

The Area Development Team (ADT) was organized in May, 1976 in coordination with the Bicol River Basin Council (BRBC). The program area had been zonified into four areas under an area coordinator.

The NIA Central Office prepared bid documents for the procurement of the required pumps, motors and related services for the L/CIADP during the period. The proposal of including the construction of various laterals, utilizing the excess excavated material from the interceptor channel and main canal is also presently being considered. The estimated excess excavation which is to be disposed amounted to 1,127,700 cu.m. NIA Management is considering the utilization of the disposable material in the construction of canal embankments within the Service Area.

A. FORCE ACCOUNT WORKS

Activities prosecuted by the government forces during the period include the drilling of test holes along the proposed tunnel line; excavation of test pits along the canal for selected borrow materials; re-negotiation of right-of-way for the shifted canal; getting the cross-section of the Sinibaan Creek; and clearing and grubbing of the proposed office site. A total of three alternative routes for the Main Canal have been surveyed and a fourth route considering constructing a tunnel through rocks was also being considered. Materials testing and control of the on-going works are also being undertaken.

The Project's Engineering Division continued the preparation of detailed estimates of various items of work for incorporation in the different

Job Orders; plotting of profiles and volumes of structures; and conducting sample analysis of different selected borrow materials from various sources.

B. CONTRACT WORKS

15000
The Heavy Equipment Rental And Construction Company Inc. (HERCON) moved onto site in June, 1976. Clearing of proposed access road was immediately undertaken including the clearing of their proposed office site. The Contractor undertook the construction of their Contractual works in the LPD-C-1 (Construction of the Main Canal and interceptor Channel and appurtenant Structures of the L/CIADP) during the period. Their present activities include the following:

1. Clearing and grubbing of Main Canal from Sta. 1+500 to Sta. 2+9-40.
Total area - 98,410 sq. meters
2. Canal and Channel excavation from sta. 0+900 to Sta. 2+580.
Total volume = 166,611 cu. meters.

CONTRACTORS WORK FORCE

The Contractors proposed work force are tabulated as follows:

<u>Designation</u>	<u>Number</u>
Project Manager	1
Asst. Project Manager	1

ENGINEERING:

Sr. Civil Engineer	1
Jr. Civil Engineer	1
Cost Engineer	1
Surveyor	1
Chain Men	2
Rod Men	2
Laborers	2
Service Driver	2

ADMINISTRATIVE:

Administrative/Personnel	
Officer	1
Liaison Officer	1
Bodeguero	1
Clerk/Typist	1
Radio Operator	1
Service Driver	1
Janitor	1

ACCOUNTING:

Accountant	1
Cashier	1
Payroll Clerk	1
Clerk/Typist	1

MAINTENANCE:

Chief Mechanic	1
Sr. Mechanics	5
Jr. Mechanics	5
Mechanic Helper	5
Oilers	6
Welders	2
Electricians	2
Tiremen	1
Tanker Driver	2

EARTHMOVING:

Supervisor	1
Dozer Operator	7
Scraper Operators	5
Backhoe Operators	4
Grader Operators	2
Roller Operators	2
Loader Operators	2
Crane Operators	1
Dump Truck Driver	12
Laborers	40

STRUCTURE:

Foreman	1
Capataz	2
Masons	4
Steelmen	2
Pump Tenders	2
Master Carpenter	4
Carpenters	12
Laborers	48
Service Driver	2

STATUS OF THE LPD-C-1 CONTRACT:

The actual physical accomplishment in the implementation of the LPD-C-1 Contract as of August 31, 1976 is 9.29 per cent as against the projected accomplishment of 12 per cent (see progress chart). Total expenditures totaled P767,924.48 as againsts the projected expenditures of P1,600,000.00.

C. AGRI-INSTITUTIONAL DEVELOPMENT

Since the start of the Program, sometime late February, 1976, thru the initiation of the Project Manager and the full coordination of the BRBC Area Coordinator, an Agricultural Development Team had been organized sometime May, 1976 for the district covering Del Gallego, Ragay, Lupi, Sipocot, Libmanan and Cabusao. Since then the organization had convened monthly at Sipocot to formulate policies and guidelines concerning the immediate program implementation in the area. Possible problems had been identified and proposed measures were agreed.

Under the integrated approach, the program area had been zonified into four areas. Each being under an Area Supervisor coming either from the detailed personnel of the DLGCD, DAR, BAEx and BPI.

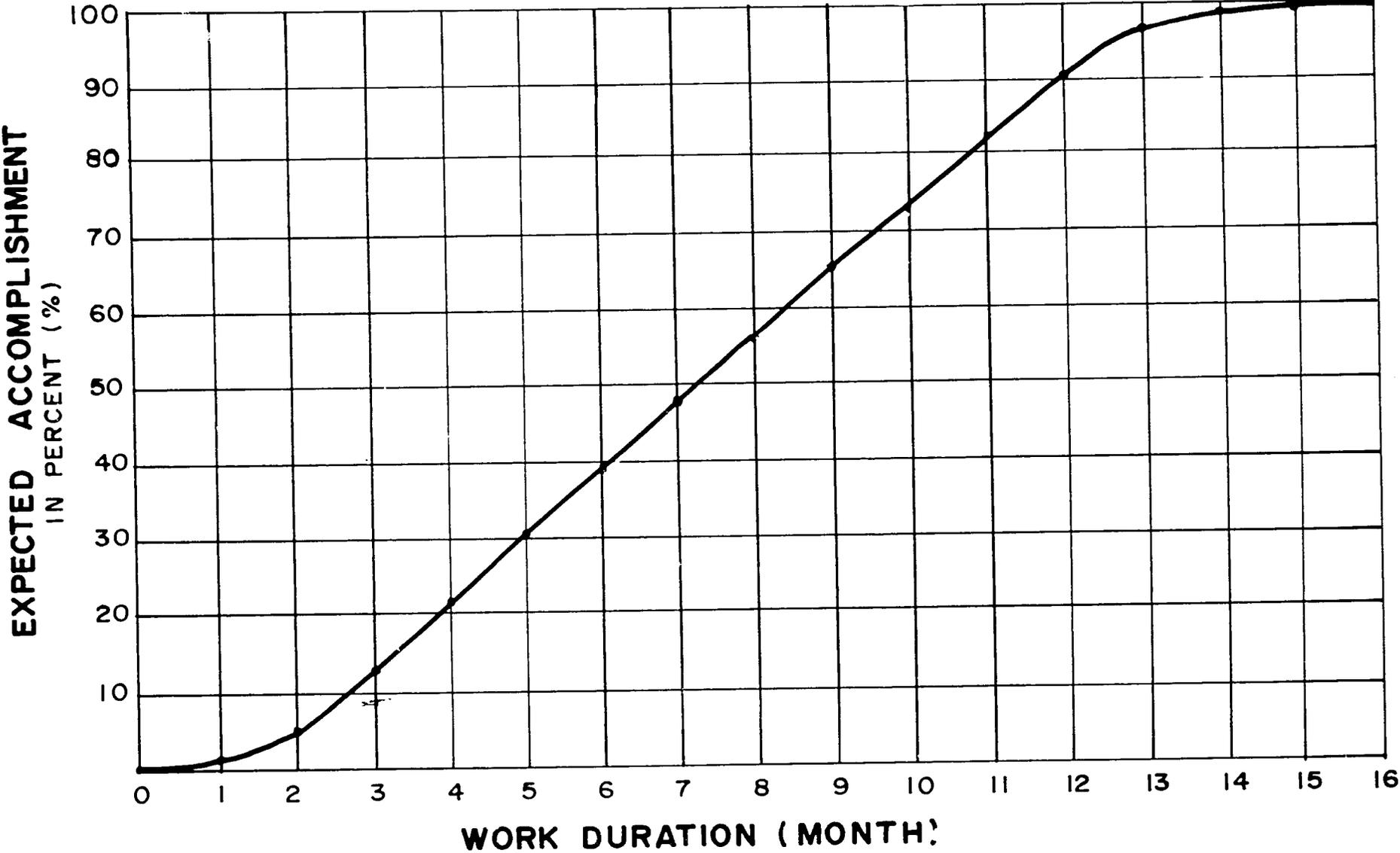
Orientation seminars among farmer-beneficiaries and line agency personnel had been initiated by the Project with the full coordination of the BRBC Area Coordinator and line agency supervisors.

ESTIMATED FINANCIAL REQUIREMENT
CONTRACT NO. LPD-C-1

MONTH NO.	MONTHLY REQUIREMENTS	ACCUMULATED AMOUNT
1st	₱ 450,000	₱ 450,000
2nd	550,000	1,000,000
3rd	600,000	1,600,000
4	650,000	2,250,000
5	650,000	2,900,000
6	650,000	3,550,000
7	650,000	4,200,000
8	650,000	4,850,000
9	650,000	5,500,000
10	650,000	6,150,000
11	650,000	6,800,000
12	550,000	7,350,000
13	450,000	7,800,000
14	350,000	8,150,000
15	250,000	8,400,000

WORK PROGRESS CHART

Contract No. LPD-C-1



The need to integrate services between the Samahang Nayon and the Irrigator's Association (still to be organized) had been identified. Presently, a compromising policy concerning the joint and synchronized operational activities between the SN and IA is being proposed for mutual agreement among the member agencies under the integrated scheme of program implementation. This proposal seeks to unify services to farm-level, production-oriented group the "Compact Farm", in order that it can truly attain a viable and functional status. It polishes further the integrated scheme for the attainment of a full-fledged municipal cooperative through the "SN-CF-IA Linkages".

Lately, it had been agreed by the members of the ADT, that there shall be organized an exclusive ADT for Libmanan and Cabusao, to include Sipocot, probably, since the pump site is within this municipality.

Land Reform Program

Since the start of the program, all accomplishments under this component were primarily through the initiation of the DAR. Presently, the detail of its personnel to the Project had not been effected yet. However, a working relationship between its personnel; and the project had already existed.

To date, with the DAR accomplishments in the area, only 430 tiller recipients (of the total 1,003 tenants) remain unawarded with Land Transfer Certificates. Only 14 agricultural leases of the 558, remain without written leasehold contracts. As of June 30, 1976, the identification of 1,589 tenants and 428 landowners covering 2,547 hectares in 1,830 parcels had been fully completed. Parcellary mapping of Land Transfer (CLT) is 65% complete. Valuation of 368 hectares remains to be done of the total 1,859 hectares.

The program area covers 17 barrios of Libmanan and 4 in Cabusao. All barrios have duly organized Barrio Committee on Land Productivity and a Samahang Nayon, the latter being a coordinated activity between the DAR and the DLGCD.

The program area has DAR personnel under the Team Leadership of Mr. Fernando Alsisto Jr., with one Legal Officer and seven (7) Agrarian Reform Technologists.

Compact Farm Development

Presently there are 37 Compact Farms organized thru the initiative of the Masagana 99 Production Technicians, either of the BAEx or the BPI. These Compact Farms exist not necessarily as a joint and several liability group, and have an uncoordinated farming operations, a democratically elected unit leader, and have non-contiguous farms. Primarily these existing Compact Farms (CF) were organized to meet rural bank requirements in availing production loans. Membership is according to how acceptable are the members to co-members. Usually, kinship determines the membership. Some five to eight members compose a CF.

Aligned with the conceived Compact Farming Development Program under the integrated area development strategy, no laudable accomplishment can be mentioned to date. Barely a month ago the Institutional and Agricultural Development Department of the Project had been manned with an Agricultural Extension Specialist to assume the Assistant Project Manager position.

Since his assumption of duty, working relationships with different line agencies are being established. Activities along this component have been centered in departmental organization and explicitly, the completion of a proposal for the immediate implementation of the overall program components thru a fully integrated activity among line agencies. This proposal shall have a foundation on a mutually agreed Samahang Nayon-Compact Farm-Irrigator's Association Operational Linkages. Once this operational scheme is agreed among the member agencies, immediate program implementation shall be done on defined priority areas of Handog and Puro-Batia Irrigation Systems. Eventually it shall expand to identifiable area upon the completion of the layout of irrigation facilities. Major activities under this component shall be the re-organization of existing CFs under the conceived scheme. Some 250 to 300 Compact Farms are expected to be organized in the program area. Skill development training and information programs shall be conducted among target clientele.

The Irrigator's Association

There are two dormant Irrigator's Associations for the Handog and Puro-Batia Irrigation Systems. Effectively irrigated area for both systems reaches some 350 hectares only.

Upon the approval of the proposed implementation scheme for compact farm development and irrigator's association harnessing the full resources of the Samahang Nasyon, Compact Farms in both area are to be organized and functionalized. Compact Farms are to be grouped into Rotational Units and from among the elected Rotational Area Leaders, the temporary executive board members are to be elected to form one Irrigator's Association for the distinct zones.

From the gradual formation of the CFs and Rotational Units under the new irrigation system shall rise a new Irrigator's Association to serve the whole program area. The temporarily organized IA shall be incorporated under this overall Irrigator's Association. The conceived IA shall join efforts with the SN, and/or a Federated SN to undergo a transition period wherein the IA "served" members who at the same time are SN members form a rice commodity and service cooperative. It shall eventually cover all irrigation systems within the program area.

The Applied Research Development

Applied research is the integral part of basic research, extension of an innovation and the adoption of a recommended practice. Its importance had been fully appreciated in this pilot project.

None, however, could be said as to concrete accomplishment under this component. A Demonstration Farm (Center) had been identified along with the priority applied research projects to conduct researches.

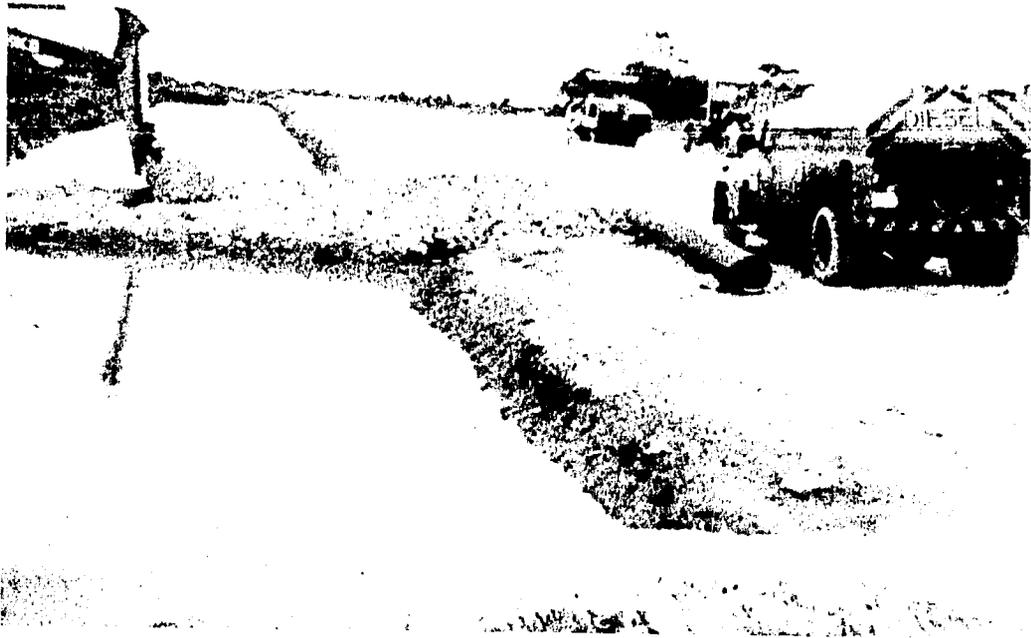
The program area had long been a major concern in the establishment of priority applied research projects. Way back 1973, it's one among the four municipalities of Camarines Sur to be the recipient for the trial introduction of the then promising IR 26 high yielding variety. IR26 now is the only variety after IR8, to possess the highest yielding potential.

Presently, a Farmer's Evaluation of New Selections Applied Research Trial Group (FENSART) had been established thru the initiation of the project. Along with it are trial demonstration of IR30 and IR36.

A cooperative working relationship had been proposed to the National UNIFIED RICE AFFPED RESEARCH, TRAINING & INFORMATION PROGRAM (URARTIP) in order that priority applied research, training and information projects be regularly implemented in the program area.

IV. FINANCIAL STATUS

During Fiscal Year 1976 the total allotment programmed under the Libmanan/Cabusao Integrated Area Development Project amounted to P8,000,000.00. The total Cash released as of August 31, 1976 amounted to P7.90 Million. Actual obligations incurred as of August 31, 1976 is P2,738,702.00 and the balance of release amounted to P5,161,298.00. Disbursements as of August 31, 1976 amounted to P0.756 Million or 1.31 per cent of the total estimated cost (see Exhibit No. 2).



On-going main canal excavation works undertaken by the Heavy Equipment Rentals and Construction Co. Inc.



Drainage channel excavation near the San Miguel Bay undertaken by the HERCON.



The existing Pumpsite at Puro Batya Libmanan, Camarines Norte. Repairs of the pump have been undertaken.



Above Photo shows the location of the Proposed Pumpsite of the Libmanan River Irrigation Project.

REPUBLIC OF THE PHILIPPINES
LIBMANAN/CABUSAO INTEGRATED AREA DEVELOPMENT PROJECT
PHYSICAL PROGRESS OF PROJECT IMPLEMENTATION
FOR THE MONTH ENDING AUGUST 31, 1976

EXHIBIT NO. 1
SHEET 1 OF 2

CONVERSION RATE U.S. \$ = P 7.80

ITEMS OF WORK	NAME OF CONTRACTOR	ESTIMATED COST			DATE STARTED	TARGET DATE FOR COMPLETION	TIME EXPIRED (%)	ACTUAL PROGRESS DURING THE MONTH (%)	CUMULATIVE PROGRESS TO DATE (%)	
		FOREIGN COMPONENT MIL. ₱	LOCAL COMPONENT MIL. ₱	TOTAL MIL. ₱					PROJECTED	ACTUAL
I PROJECT SERVICE AREA										
A. CONTRACT WORKS										
1. CANAL STRUCTURES										
a. MAIN CANAL	HERCON	0.050	0.518	0.893	6-1-76	2-28-78	10.00			
b. INTERCEPTOR CHANNEL	-do-	0.060	0.807	1.257						
c. PUMP STATION	-do-						10.00			
SUB-TOTAL =		0.060	0.626	1.076	-do-	-do-	10.00			
2. CANALIZATION										
a. MAIN CANAL	HERCON	0.216	0.693	2.313	6-1-76	2-28-78	10.00			
b. INTERCEPTOR CHANNEL	-do-	0.312	1.129	3.469						6.57
c. CANALS & LATERALS		2.642	1.991	6.806	-do-	-do-	10.00			10.45
SUB-TOTAL =		1.170	3.813	12.588						
3. ROADS										
a. MAIN CANAL	HERCON	0.030	0.288	0.513	6-1-76	2-28-76	10.00			
b. LATERALS & SUB-LATERALS		0.038	0.428	0.713						
SUB-TOTAL =		0.068	0.716	1.226						
4. APPURTENANT STRUCTURES										
a. MAIN CANAL & INTERCEPTOR CHANNEL	HERCON	0.073	0.231	0.779	6-1-76	2-28-76	10.00			
b. LATERALS & SUB-LATERALS		0.031	0.031	0.101						
SUB-LATERALS =		0.104	0.332	1.113						
5. TERMINAL FACILITIES										
a. MAIN FARM DITCHES		0.012	0.560	0.650						
b. SUPPLEMENTARY FARM DITCH		0.030	1.384	1.609						
c. FARM DRAIN		0.059	0.190	0.633						
d. LATERAL DRAIN		0.037	0.105	0.353						
e. OFF-TAKE STRUCTURE		0.047	0.140	0.478						
SUB-TOTAL =		0.175	2.379	3.723						
6. FLOOD PROTECTION DIKE										
		0.007	0.047	0.100						
7. TIDE PROTECTION DIKE										
		0.038	0.110	0.795						
TOTAL A =		1.736	3.748	22.771						
B. FORCE ACCOUNT WORKS										
1. PRE-CONSTRUCTION WORKS										
		0.003	0.663	0.686	8-1-75	12-31-77	48.18			
2. RIGHT-OF-WAY										
		-	2.459	2.459	8-1-75	12-31-77	48.18			
3. CANAL STRUCT'R. LAT. & SUB-LAT.										
		0.075	0.277	0.840						
4. TERMINAL FACILITIES										
		0.078	0.243	0.828						
5. PROJECT FACILITIES (BLDS. & CPDS.)										
		0.029	0.987	1.205						
6. CONCRETE LINING										
		0.034	0.345	0.600						
SUB-TOTAL =		0.219	4.974	6.618						
		1.955	14.722	29.389						

30

REPUBLIC OF THE PHILIPPINES
LIBMANAN/CABUSAO INTEGRATED AREA DEVELOPMENT PROJECT
FINANCIAL PROGRESS
FOR THE MONTH ENDING AUGUST 31, 1976
MILLION PESOS

CONVERSION RATE: 1 U.S. \$ = P7.50

ITEMS OF WORK	ESTIMATED TOTAL COST AT APPRAISAL ⁴⁰			REVISED ESTIMATED COST ⁴⁰			EXPENDITURES TO-DATE			(%) AID FUNDS EXPENDED
	FOREIGN EXCHANGE U.S. \$ MIL.	LOCAL CURRENCY MIL. PESOS	TOTAL MIL. PESOS	FOREIGN EXCHANGE U.S. \$ MIL.	LOCAL CURRENCY MIL. PESOS	TOTAL MIL. PESOS	FOREIGN EXCHANGE U.S. \$ MIL.	LOCAL CURRENCY MIL. PESOS	TOTAL MIL. PESOS	
I PROJECT SERVICE AREA										
A. CONTRACT WORKS										
1. CANAL STRUCTURES										
a. MAIN CANAL	0.050	0.154	0.529	0.050	0.518	0.893				
b. INTERCEPTOR CHANNEL	0.007	0.020	0.073	0.060	0.807	1.257				
c. PUMP STATION	0.060	0.191	0.641	0.060	0.626	1.076				
SUB-TOTAL =	0.117	0.365	1.243	0.170	1.951	3.226				
2. CANALIZATION										
a. MAIN CANAL	0.427	1.334	4.537	0.216	0.693	2.313		0.195	0.195	
b. INTERCEPTOR CHANNEL	0.101	0.313	1.071	0.312	1.129	3.469		0.450	0.450	
c. CANALS & LATERALS	0.642	1.991	6.906	0.642	1.991	6.808				
SUB-TOTAL =	1.170	3.638	12.414	1.170	3.813	12.588		0.645	0.645	
3. ROADS										
a. MAIN CANAL	0.030	0.090	0.115	0.031	0.288	0.513				
b. LATERALS & SUB-LATERALS	0.038	0.115	0.400	0.031	0.428	0.713				
SUB-TOTAL =	0.068	0.205	0.715	0.062	0.716	1.226				
4. APPURTENANT STRUCTURES										
a. MAIN CANAL & INTERCEPTOR CHANNELS	0.073	0.231	0.779	0.073	0.231	0.779				
b. LATERALS & SUB-LATERALS	0.031	0.101	0.334	0.031	0.101	0.334				
SUB-TOTAL =	0.104	0.332	1.113	0.104	0.332	1.113				
5. TERMINAL FACILITIES										
a. MAIN FARM DITCHES	0.012	0.039	0.129	0.012	0.560	0.650				
b. SUPPLEMENTARY FARM DITCH	0.030	0.092	0.317	0.030	1.384	1.609				
c. FARM DRAIN	0.059	0.190	0.633	0.059	0.190	0.633				
d. LATERAL DRAIN	0.033	0.105	0.353	0.033	0.105	0.353				
e. OFF-TAKE STRUCTURE	0.045	1.140	0.478	0.045	0.140	0.478				
SUB-TOTAL =	0.179	0.566	1.912	0.179	2.379	3.723				
6. FLOOD PROTECTION DIKE	0.007	0.020	0.073	0.007	0.047	0.100				
7. TIDE PROTECTION DIKE	0.038	0.114	0.399	0.038	0.510	0.795				
TOTAL A =	1.683	5.240	17.867	1.736	9.748	22.771		0.645	0.645	
B. FORCE ACCOUNT WORKS										
1. PRE-CONSTRUCTION WORKS	0.003	0.093	0.116	0.003	0.663	0.686				
2. RIGHT-OF-WAY	-	2.459	2.459	-	2.459	2.459				
3. CANAL STRUCTURE (LAT. & SUB-LAT.)	0.075	0.230	0.793	0.075	0.277	0.840				
4. TERMINAL FACILITIES	0.078	0.243	0.828	0.078	0.243	0.828				
5. PROJECT FACILITIES (BLDG. & CPDS.)	0.029	0.272	0.490	0.029	0.987	1.205				
6. CONCRETE LINING	0.034	0.108	0.363	0.034	0.345	0.600				
SUB-TOTAL =	0.219	3.405	5.049	0.219	4.974	6.618				
TOTAL B =	1.902	8.645	22.916	1.955	14.722	29.389		0.645	0.645	

FIGURE 1

PROJECT IMPLEMENTATION SCHEDULE
LIBMANAN RIVER IRRIGATION PROJECT

WORK ITEMS	1976					1977					1978					1979																				
	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
	HEAVY RAINFALL					LOW RAINFALL					HEAVY RAINFALL					LOW RAINFALL					HEAVY RAINFALL					LOW RAINFALL										
PRE-CONSTRUCTION																																				
1. FINAL SURVEY & DESIGN																																				
2. R.O.W. ACQUISITION																																				
3. PROCUREMENT OF CONSTRUCTION EQUIP'T.																																				
4. PROCUREMENT OF PUMP SETS																																				
5. PROCUREMENT OF CONSTRUCTION MATERIALS																																				
CONSTRUCTION																																				
1. BUILDINGS																																				
2. PUMPING STATION																																				
3. CANAL STRUCTURES																																				
4. CANALIZATION																																				
5. SERVICE ROADS																																				
6. PROTECTION DIKES																																				
7. DRAINAGE CHANNELS																																				
8. TERMINAL FACILITIES																																				
OPERATION																																				
	(TEST RUN)																																			

NOTE: 1/ - START OF DELIVERY OF URGENT EQUIPMENT
 2/ - DELIVERY OF PUMP SETS
 3/ - START OF DELIVERY OF CONSTRUCTION MATERIALS
 LIGHT ACTIVITIES

FIG. _____

LIBMANAN-CABUSAO INTEGRATED AREA DEVELOPMENT

IMPLEMENTATION SCHEDULE

WORK ITEM	1975	1976	1977	1978	1979	1980	1981
	0	1	2	3	4	5	6
A. ORGANIZATION OF ADT / ADC	[Gantt bar from 1975 Q1 to 1976 Q1]						
B. IRRIGATION AND DRAINAGE							
1. PRE-CONSTRUCTION		[Gantt bar from 1976 Q1 to 1977 Q3]					
2. CONSTRUCTION		[Gantt bar from 1976 Q2 to 1978 Q1]					
3. TEST RUN				[Gantt bar from 1978 Q3 to 1979 Q1]			
C. LAND REFORM							
1. LISTING		[Gantt bar from 1976 Q1 to 1976 Q3]					
2. PARCELLARY MAPPING		[Gantt bar from 1976 Q2 to 1978 Q1]					
3. OLT AND LEASEHOLD			[Gantt bar from 1977 Q1 to 1980 Q1]				
D. COMPACT FARM DEVELOPMENT							
1. TRAINING		[Gantt bar from 1976 Q1 to 1979 Q1]					
2. ORGANIZATION		[Gantt bar from 1976 Q2 to 1979 Q1]					
3. EXTENSION SUPPORT DEVELOPMENT		[Gantt bar from 1976 Q3 to 1981 Q1]					
E. APPLIED RESEARCH							
1. TEAM ORGANIZATION		[Gantt bar from 1976 Q1 to 1976 Q3]					
2. IDENTIFY RESEARCH AREA		[Gantt bar from 1976 Q2 to 1977 Q1]					
3. RESEARCH OPERATION			[Gantt bar from 1977 Q1 to 1981 Q1]				
F. IRRIGATORS ASSOCIATION							
1. ORGANIZATION			[Gantt bar from 1977 Q1 to 1977 Q3]				
2. MGT./OPNS. TRAINING			[Gantt bar from 1978 Q1 to 1979 Q1]				
3. OPERATION/MAINTENANCE					[Gantt bar from 1980 Q1 to 1981 Q1]		

REPUBLIC OF THE PHILIPPINES
 NATIONAL IRRIGATION ADMINISTRATION
 OFFICE OF SPECIAL PROJECT
LIBMANAN/CABUSAO INTEGRATED AREA DEVELOPMENT PROJECT

