

Directorate General for
Water Resources Development
(DGWRD)

PD-AEJ-277
United States Agency for
International Development
(USAID)

10/11/89

**SMALL SCALE IRRIGATION MANAGEMENT PROJECT
(SSIMP)**

QUARTERLY REPORT NO. 9

October-December, 1989

HARZA ENGINEERING COMPANY

in association with

Development Alternatives,
Inc.

Global Exchange,
Inc.

P.T. Wiratman
& Associates

QUARTERLY REPORT NO. 9

Period: October - December 1989

TABLE OF CONTENTS

SECTION	DESCRIPTION	PAGE
I	Background, Description of Project and Harza Services	I - 1
II	Activities During Quarter	II - 1
	<u>Nusa Tenggara Barat</u>	
A.	General	II - 1
B.	Trips	II - 3
C.	Meetings	II - 4
D.	Reports.....	II - 6
E.	Other Major Activities	II - 6
E.1.	Tiu Kulit Dam Project	II - 6
E.2.	Kalimantong II Weir Project	II - 6
E.3.	Gapit Dam Project	II - 7
E.4.	Batujai-Surabaya Project	II - 7
E.5.	PU-NTB	II - 8
F.	Project Status Updates	II - 9
	<u>Nusa Tenggara Timur</u>	
A.	General	II - 10
B.	Trips	II - 13
C.	Meetings	II - 13
D.	Reports	II - 13
E.	Other Major Activities	II - 14
	<u>Sulawesi Selatan</u>	
A.	General	II - 15
B.	Trips	II - 16
C.	Meetings	II - 18
D.	Reports	II - 18
E.	Other Major Activities	II - 19
E.1.	Awo Project	II - 19
E.2.	Salomekko Project	II - 19
E.3.	Ponre-Ponre Project	II - 20
E.4.	Selli-Coppobulu Project	II - 22
E.5.	Raja-Talaga Project	II - 23
E.6.	Environmental Studies	II - 23
E.7.	PU-SulSel	II - 25
F.	Project Status Updates	II - 25

TABLE OF CONTENTS (Cont' d)

SECTION	DESCRIPTION	PAGE
	<u>Groundwater</u>	
	Nusa Tenggara Barat	II - 26
	Nusa Tenggara Timur	II - 28
	Sulawesi Selatan	II - 28
	Training and Technology Transfer	II - 29
III	Problems Encountered and Recommended Solutions...	III - 1
	Nusa Tenggara Barat	III - 1
	Nusa Tenggara Timur	III - 2
	Sulawesi Selatan	III - 2
	Training and Technology Transfer	III - 3
IV	Activities Planned for Next Quarter.....	IV - 1
	Nusa Tenggara Barat	IV - 1
	Nusa Tenggara Timur	IV - 2
	Sulawesi Selatan	IV - 2
	Training and Technology Transfer	IV - 2
V	Financial Status	V - 1
VI	Movement of Employees	VI - 1
	Exhibits	
	Staffing Schedule (Original)	Fig. 1
	Staffing Schedule (Current)	Fig. 2
	Project Status Updates:	
	SSIMP - General	Fig. 3
	Tiu Kulit Dam	Fig. 4
	Kalimantong II Weir	Fig. 5
	Gapit Dam	Fig. 6
	Batujai Kiri Extension	Fig. 7
	Awo Weir	Fig. 8
	Salomekko Dam	Fig. 9
	Ponre-Ponre Dam	Fig.10
	Selli-Coppobulu Dam	Fig.11
	Appendixes	
A.	List of Attendants - Gapit Scoping Session	
B.	List of Attendants - Batujai-Surabaya Scoping Session	
C.	Summary of Environmental Scoping Session Discussion Ponre-Ponre and Selli-Coppobulu Projects (English version)	
D.	Summary of Environmental Scoping Session Discussion Ponre-Ponre and Selli-Coppobulu Projects (Indonesian version)	

SECTION I

BACKGROUND, DESCRIPTION OF PROJECT AND HARZA SERVICES

BACKGROUND AND DESCRIPTION OF PROJECT

The goal of the Small-Scale Irrigation Management Project (SSIMP) is to expand agricultural production by diversifying production, increasing cropping intensity and improving water reliability. Progress in achieving this goal will be measured by increases in cropping intensity, seasonal crop productivity, secondary crop production, and economic returns.

The purpose of SSIMP is to design and apply irrigation technologies and management systems that support diversified cropping patterns in selected eastern islands of Indonesia. Irrigation systems financed under the project will be designed and managed to the maximum extent feasible for diversified cropping. This measure is especially appropriate in the three project provinces where water scarcity may significantly limit the command areas if only rice production is encouraged.

The SSIMP will:

- support the construction of surface irrigation systems in South Sulawesi and Nusa Tenggara Barat provinces to serve an estimated 19,500 ha of rice and secondary crops
- support the further exploration, development, and expansion of small-scale groundwater projects in South Sulawesi, Nusa Tenggara Barat and Nusa Tenggara Timur to serve an estimated 5,200 ha of rice and secondary crops
- strengthen the capacity of the Provincial Public Works staff within the three provinces to utilize new or improved irrigation technologies and management systems appropriate to the needs of the farmers in that agro-climatic zone
- assist in the examination of relevant program issues, and the testing of innovative technologies through collaborative studies and research efforts with the Directorate General of Water Resources Development (DGWRD) of the Ministry of Public Works (PU).

The life of the project for SSIMP is eight years, 1985 through 1993, based on the amount of time required to complete pre-construction surveys and designs, construction of surface systems, expansion of groundwater systems, and post-construction management and monitoring requirements for all of the systems.

It is expected that the project will have two general phases of activities: preparation and planning (first 12 months) and implementation (7 years).

The Small-Scale Irrigation Management Project is a very complex program of activities, by many different agencies, over a wide geographical area. These activities may be divided into the following four subject areas:

1. Improved Irrigation Technologies
2. Strengthening Provincial Public Works (PU) Management
3. Increased Beneficiary Participation
4. Special Studies and Pilot Activities

Each activity is described in the following paragraphs:

Improved Irrigation Technologies

- a. Design and Construction. The project will support the development and construction of irrigation systems to provide a reliable water supply to an estimated 25,000 ha of rice and secondary crops in the three provinces of South Sulawesi, West Nusa Tenggara (NTB), and East Nusa Tenggara (NTT). Four irrigation technologies will be utilized: surface diversion and surface lift systems servicing an estimated 7,200 ha; reservoir systems servicing an estimated 12,300 ha; and groundwater systems servicing an estimated 5,200 ha. All four technologies will be applied in the provinces of South Sulawesi and NTB, while investments in NTT will concentrate on groundwater.
- b. Management of Irrigation Systems. "Management" in this section is defined as the control and rational distribution of limited water supplies in an irrigation command area in order to maximize the area under cultivation. It refers to both the technical and organizational requirements and to the process linking them together.

Strengthening Provincial Public Works Management

Substantial decentralization of planning and design of irrigation systems to the Public Works Provincial levels is expected to occur.

To enhance the performance of Public Works (PU) units within the three provinces and the six districts in which activities will be implemented, the project will support the following activities:

1. Introduction of new or improved management tools for both Provincial and Section offices

2. Training and professional development
3. Improved Provincial PU capacity for management of design and construction contracts.

Increased Beneficiary Participation

The target beneficiaries of this project are the farmers within the command areas. They will participate in four stages of system development under the project:

- a. Site Selection Process. Criteria which ensure farmer participation will be developed for post-project irrigation investments in the three provinces.
- b. Site Profile and Review of Technical Design. The pre-construction activities under the project will include the preparation of a site profile to define agronomic and socio-economic factors. Due to the command area size and the technical nature of the systems, farmers need not be directly involved in the detailed review of the primary and secondary distribution systems, although they will be consulted. Their primary role will be in review and adjustment to the tertiary network design.
- c. Construction. Farmer participation in the construction stage can take several forms including contract labor, farmer-managed construction, or farmer oversight of contractor work. The extent and character of farmer participation will be decided during the development of site profiles and the review of the tertiary system design.
- d. Management and Maintenance. Farmers will be responsible for the management of the tertiary systems. Division of specific responsibilities between the Public Works and water user groups, including an expansion of farmer responsibility, will be defined at the design review and construction stage.

Special Studies and Pilot Activities

In order to provide sound technical and management plans and recommendations dealing with specific irrigation issues, the project will support a series of special studies and pilot activities to be agreed upon during project implementation. It is anticipated that issues to be addressed may include assessment of private sector role in groundwater, baseline environmental assessment, and policy and management studies especially related to system operation and maintenance.

Harza Services

Harza consulting services are set forth in Contract AID 497-C-00-7139-00, dated September 1, 1987. The contract describes the scope of services, costs and the duties and responsibilities of the parties.

Three semi-independent teams will be required, one for each of the project provinces. In each province, the Consulting Firm will designate a team leader who will be responsible for the coordination of activities within the province. In addition, there will be a Chief of Party who will be responsible for management and coordination of all Consultant personnel. The Chief of Party will also serve as liaison between his staff and the GOI and USAID.

The contract provides for both local and expatriate specialists. Harza is the prime contractor, and has three subcontractors, with whom subcontracts have been executed. The subcontractors are:

1. Development Alternatives, Inc., Washington, D.C.
2. Global Exchange, Inc., Xenia, Ohio
3. P.T. Wiratman & Associates, Jakarta, Indonesia.

Harza, as prime contractor, retains responsibility for management of the project, and provides the Chief of Party, provincial team leaders, and several key specialists.

The subcontractors provide specialists in agricultural economics, social science, civil engineering and groundwater geology.

Basically, the role of the Harza technical assistance team is to provide guidance and direction to the provincial Public Works staff and their local consultants, as they select, evaluate, design and construct small-scale irrigation projects, and to help them in critical technical areas, where they lack experience.

The person-months for each entity as set forth in the Contract are shown on Figure 1, and are summarized below:

<u>Name</u>	<u>Person-months</u>
Harza Engineering Company	140
Development Alternatives, Inc.	63
Global Exchange, Inc.	118
P.T. Wiratman and Associates	<u>148</u>
Total	469

Due to mutually agreed-upon modifications since signing the Contract, the person-months for each entity are now:

<u>Name</u>	<u>Person-months</u>
Harza Engineering Company	140
Development Alternatives, Inc.	50
Global Exchange, Inc.	118
P.T. Wiratman and Associates	<u>122</u>
Total	430

and are shown on Figure 2.

Figure 2 has been altered slightly from the earlier submissions (Reports Nos. 1 through 6) to indicate current status by the use of a double dashed line for actual expended person-months. Thus, each new period is updated on the bar chart and in the person-month totals. Actual short-term staff assignments over the period are also updated.

As the result of the mid-term evaluation, Mr. Jeffery Frey replaced Mr. Eric Will as Chief of Party in Jakarta effective the end of October 1989. This change in the Harza Team leadership is expected to strengthen the overall planning and management of contract activities. Increased emphasis will be given to providing advice and assistance to the DGWRD in project implementation.

The above move prompted a shift of Mr. W. J. Schoenleber from his position of Irrigation Engineer to that of the Team Leader of NTB province. There are no immediate plans to move another expatriate into the vacated irrigation engineering position until the entire question of the TA consultant proposed extension is addressed.

SECTION II

ACTIVITIES DURING QUARTER

NUSA TENGGARA BARAT

A. General

At the start of this quarter, the Technical Assistance staff of the NTB office comprised the following long-term members:

Jeffery Frey, TA Team Leader/Civil Engineer (Harza)
Robin Erickson, Agricultural Economist (DAI)
Terry Haryanto, Irrigation Engineer (Wiratman)
Pamudji Rahardjo, Hydraulic Structures (Global)
Soekardi P., Hydrogeologist (Wiratman)
W. Schoenleber, Irrigation Engineer (Global)

The highlight of this quarter was the USAID Mission Director's Implementation Review visit to NTB province during the period 14-16 December. Members of the Director's entourage included the following:

David Merrill, Director
Lee Twentyman, Deputy Director
James Hradsky, Program Specialist
Marcus Stevenson, Contracting Officer
Graham Kerr, Head of Regional and Resources Management
(RRM) Section of Agricultural and Rural
Development Office (ARD)
Herb Blank, SSIMP Project Officer
Gunawan Widjaja, Staff Engineer, ARD/RRM
Joes Oemarhamzah, Staff Engineer, ARD/RRM
Suzanne Siskel, PSC Consultant to DGWRD

Members of the team arrived in Mataram on the afternoon of first day and attended an orientation briefing chaired by Ir. Gatot Soenarjo in the PU-NTB conference room. The second day included a site visit to Kalimantanong II weir with an overnight stop in Sumbawa Besar. After the weir site visit, a meeting with Village Chief Ibu Amnarsari and leading farmers of Tepas Village gave the team an opportunity to experience the strong feelings of local support for this long sought irrigation project. The farmers also expressed their enthusiasm in being able to participate in the design process of the tertiary systems. They are also ready review the overall main system designs to ensure that adequate facilities are included for usage by human and animal beneficiaries. The third (and last day) concluded the tour with discussions with local PU officials and return to Jakarta.

The Director's Review was aimed at addressing the following issues concerning SSIMP:

1. Project Evaluation Summary of Mid-Term Evaluation Report
2. Project management and coordination, especially within DGWRD
3. GOI funding levels for future years
4. Scope of Project relative to items/activities to be completed
5. Goals for organizing water users
6. Extension of PACD (Project Actual Completion Date)

The official response is not available at this writing, but it is expected that the team had favorable impressions of their field visit; especially, discussions with village heads and influential farmers within the proposed service area.

During this period, the following individuals made visits to the NTB office:

Dr. Peter Ames and Dr. Peter Neame, Environmental Scientists, arrived in NTB on 30 October to start studies for the Gapit and Batujai Kiri projects. Dr. Neame returned to his home base in Ujung Pandang on 8 November while Ames continued his work until 13 November.

Dr. G. R. Elmore, Harza's Senior Hydrologist, completed his six-week assignment on the water availability study for the Batujai-Surabaya project on 7 November when he returned to Chicago via Jakarta.

Mr. S. D. Khan, Harza's Geotechnical Engineer, spent the period 3-15 November in NTB working on the Tiu Kulit, Gapit and Kalimantan II projects.

Mr. Donald Stazy, Harza's Geophysical Specialist, continued his groundwater survey work in NTB until 27 November when he moved to SulSel province.

Ms. Suzanne Siskel and Ir. Joes Oemarhamzah, USAID staff members, visited NTB on two occasions (15-18 November and 11-16 December) to work out the itinerary of the Mission Director's Implementation Review (DIR) visit.

Other TA staff members involved in the subject DIR visit were Dr. Carol Hetler, Social Scientist based in SulSel. She spent the period 13-17 December in NTB for that purpose.

Mr. Robin Erickson, Agroeconomist (regularly based in NTB, but on assignment to SulSel) returned to NTB on 13 November specifically for the DIR.

Mr. Jeffery Frey made several visits to NTB during this period in his new capacity as Chief of Party to arrange the DIR visits plus coordinate work on the Kalimantan II PJR.

Mr. D. A. Frey (no relation to J. P. Frey) Harza's Geologist from Chicago, visited NTB during the period 11-16 December to make field inspections of the Gapit and Tiu Kulit dam sites. His site inspection visits were coordinated with P.T. Mettana Engineers plus PU-NTB Embung counterpart staff members.

Dr. Peter Ames, Harza's Environmental Scientist, returned from SulSel to NTB for the period 17-27 December. He returned to Chicago via a stopover in Jakarta to meet with Messrs. Nasri and Amron of SubDit KLS at Bina Program Office.

B. Trips

Project travel by NTB staff members this period was moderately heavy due to the emphasis placed on support of the DIR visit, environmental scoping sessions and specialists from Harza's home office.

Mr. Robin Erickson, Agroeconomist (DAI) based here in NTB, continued work in SulSel until 13 December when he returned for the DIR and environmental scoping sessions.

Messrs. Frey and Schoenleber traveled to Jakarta during the period 3-5 October to attend the presentation of Tiu Kulit and Kalimantan II projects to DOI-I officials. (See additional comments under meetings.)

Messrs. Ames and Neame, Environmental Scientists from Chicago and SulSel, respectively, traveled to the project sites of Gapit (Sumbawa Island) and Batujai-Surabaya (Lombok Island). These visits were made during the period of their stay here in NTB (30 October until 8 November).

Mr. S. D. Khan, Harza's Geotechnical Engineer made site visits to Tiu Kulit and Gapit during the period 3-15 November.

USAID staff members Ir. Oemarhamzah and Ms. Suzanne Siskel were accompanied to a site visit at the Kalimantan II weir by W. J. Schoenleber on 16-17 November to ascertain the logistic support required for the DIR visit.

Mr. D. A. Frey's visit to NTB during the period 11-16 December involved nearly all field work and was reported above.

Dr. Peter Ames, travelled to Sumbawa Island during the holiday weekend 23-26 December. He inspected the upper reaches of the catchment of the three projects under study in order to gather additional data on the flora-fauna of the island.

The two environmental scoping sessions held at Sumbawa Besar and Praya are reported separately under Section C. Meetings, below.

C. Meetings

The following meetings were held and/or attended by various SSIMP staff during this period:

Dates	Place	Participants	Remarks
04 Oct.	DOI-I Jakarta	PU-Pusat, PU-NTB USAID, TA & Geo-Survey	Review of Kalimantanong II Tender Documents
05 Oct.	DOI-I Jakarta	PU-Pusat, PU-NTB USAID, TA and Mettana	Review of Tiu Kulit Tender Documents
09 Nov.	SSIMP Mataram	Ames, Neame and Abdullah MT.	Discuss water quality analysis contract.
14 Nov.	PU-Pusat Mataram	PU-NTB Staff chaired by Ir. Gatot Soenarjo, of NTB KaKanWil, USAID Staff, TA Staff, etc.	DIR Team's orientation
15 Nov.	K II Weir Site Taliwang Sumbawa	USAID DIR Team, PU-NTB, TA, etc.	Explanation of K II Weir project by PM Danang Djojo ME.
16 Nov.	PU-NTB Sumbawa Besar	USAID DIR Team PU-NTB Staff, TA,	Visit to office of PU Sumbawa Island.
18 Nov.	PU-Pusat Mataram	Ir. Gatot Soenarjo USAID Staff members	Logistics of upcoming DIR visit
18 Nov.	Bupati Sumbawa Besar	See list of participants in Annex A.	Envir. Scoping Session for Gapit Project
20 Nov.	Bupati Praya	See list of participants in Annex B	Envir. Scoping Session for Batujai-Surabaya Project
21 Dec.	PU-Pusat Mataram	Gunawan, Schoenleber, Embung Staff	Inspection of damaged computers at Embung office
22 Dec.	SSIMP Mataram	Ames, Abdullah and Schoenleber	Discussion concerning Gapit water quality analysis
28 Dec.	SSIMP Mataram	Ames, Abdullah and Schoenleber	Discussion concerning Gapit water quality analysis
28 Dec.	PU-Bina SubDit KLS	Ames, Nasri and Amron	Discussions concerning new envir.guidelines by PU
29 Dec.	SSIMP Mataram	Frey, Schoenleber and CV. Tripod	Signed water quality analysis contract for Batujai-Surabaya project.

Several of the meetings reported in the table format above are of particular importance to warrant additional comments as follows:

The 4th and 5th of October meetings held in DOI-I conference room in Jakarta were a review of the tender documents prepared for the Kalimantan II and Tiu Kulit projects, respectively. The respective NTB project managers made the presentation to DOI-I staff members plus USAID and the TA team. There was general agreement that the documents were acceptable despite minor omissions and/or corrections remaining to be accomplished. For example, the Kalimantan II documents were based on the original GeoSurvey design of the high level right bank canal system. This is intended to be redesigned to opt for a lower Taliwang Lake outlet crossing thus reducing overall costs, but possibly reducing the service area by some 50 ha. In like manner, the Tiu Kulit Dam design drawings were not officially approved by the TA team pending changes not yet finalized by PT. Mettana.

The DIR meetings have been reported in the first section above.

The two environmental scoping sessions were held on 18 and 20 December at Sumbawa Besar and Praya, respectively. These two meetings represent important milestones in the publication of the study results for the Gapit and Batujai-Surabaya projects. The meetings were well attended, the discussions informative and the participants were satisfied with the initial progress. A listing of the participants is presented in Appendixes A and B.

While not ranked in the same priority as those reported above, the discussions between PU-NTB and Ir. Gunawan on 21 December does rate mention herein. The subject concerned the delivery of five computer systems in a damaged state. Only one of the five systems was operative, while the remaining four sustained damage or loss that must be remedied by the vendor. It is to be lamented that after this long awaited delivery, the systems should have sustained damage in shipping by air cargo from Jakarta.

Several meetings with Ir. Abdullah MT of the Environmental Study Center of Mataram University (UNRAM) has failed to resolve the dissatisfaction of the water quality analyses for the Gapit project. Some of the samples were improperly handled resulting in failure to achieve satisfactory test results in some parameters (e.g., coliform). Dr. Neame is still trying to review the lab data sheets to ascertain what test results can be accepted and what action is deemed appropriate for those that are not.

A contract has been signed with a local firm, CV. Tripod, that will use another lab for water quality analyses for the Batujai-Surabaya project. It is expected that these test results will be done in a more timely and judicious manner.

D. Reports

During this period, the draft Kalimantanong II Project Justification Report (PJR) was published with a limited distribution. This preliminary draft has since undergone moderate revision and is expected to be reissued in January 1990.

The two Environmental Assessment Reports (EAR) for the Gapit and Batujai-Surabaya projects have been started. It is expected that these reports may be ready for publication at the end of next quarter.

The draft version of the Tiu Kulit PJR has undergone extensive revision and is expected to be ready for publication in February. This report was the subject of a day-long review by PU-NTB on 21 September. Due to the priority shift to Kalimantanong II in light of the DIR visit, the suggestions offered by PU staff have not yet been implemented.

E. Other Major Activities

E.1 Tiu Kulit Dam Project

Mr. Santosh Banerjee, Harza's Senior Design Engineer from Chicago arrived in Jakarta on 27 November. He went to Bandung, West Java to work with the head office engineers of PT. Mettana to assist them in revising the dam drawings, bill of quantities, and technical specifications. There was also some additional information available from the recent geotechnical investigations that had to be considered. Mr. Banerjee was joined in Bandung by PU NTB Ir. Agus Hendra, SSIMP Counterpart, who did an excellent job contributing to the drawing review and revision process.

E.2 Kalimantong II Weir Project

Much has already been reported about this project in relation to the DIR visit that occurred during the period 14-16 December. There is nothing additional to report under this section except for the agroeconomic information as given below.

With figures supplied by technical staff engineers, economic analysis of pumped irrigation using existing technologies was conducted. The results indicated that use of pumps can be potentially profitable if: (1) the machinery and delivery systems are properly operated and maintained, and (2) farmer repayments for water use can be regularly collected. The field observations reveal problems with maintenance and operations, and difficulties in obtaining prompt participant-farmer payment of water-use fees.

The biggest constraint to expanding the current pump network in the Kalimantanong II command appears to be the reach by using existing pump technologies. Using 10 meter lift as a

standard, a 20 HP engine could provide a 40 hectare area 1.5 liters/second/ha for 18 hours a day for 250 irrigation days per year. The amount of area in the command that could be covered by 10 meters of lift is estimated to be less than double the existing pumped area of 360 hectares. This means that only a limited portion of the 2,815 ha command could be irrigated by expanding the current system of pumps. It is thus envisioned that the area irrigated, the quality of irrigation and the reliability of supply would all be compromised by foregoing technical irrigation by weir in favor of expanding the current pump network. Finally, investment analysis shows far greater gains to the country by pursuing the project of technical irrigation by weir.

E.3 Gapit Dam Project

There has been no word on the status of the additional design work that was proposed to be done by PT. Mettana and reported during last quarter.

Agroeconomic discussions continued with the Consultant Mettana, in connection with dam optimization studies. The Consultant was urged to forego constrained water allocations across cropping seasons in an effort to maximize project EIRR. A more realistic assumption for the project is that if water is available in the reservoir in the second season and there is cropping area in need of water, farmers will demand irrigation rather than carrying water over to a third season in the hope of gaining marginally better economic returns. Results of the consultant analyses using constrained water use in the second season showed a farming intensity of 140% for a Paddy/Paddy/Palawija cropping pattern and a farming intensity of 225% for a Paddy/Palawija/Palawija cropping pattern. Both results are higher than outcomes forecasted at the neighboring SSIM Project Tiu Kulit.

Programming the data analysis routines for the Gapit farm survey was completed. Questionnaire responses had previously been entered into computer data files by trained counterpart staff using a double entry system. A program for comparing the independently entered data sets was created to catch and eliminate random data entry errors and questionnaire discrepancies.

Once a verifiably clean data set was attained, the programmed routines were run on the data files to create analysis output. Bound copies of the farm survey questionnaire, associated codebooks, and analysis output were printed out to provide hard copy of the computerized process. The results of the analysis give benchmark figures for the project areas prior to undertaking the technical irrigation developments. The analysis results will be written up and presented in the PJR and EA project reports.

E.4 Batujai-Surabaya Project

The water availability special assignment of Dr. G. R. Elmore, Harza's Senior Hydrologist from Chicago was concluded on 7 November when he returned via Jakarta. His report was published shortly thereafter and distributed on 27 November. The conclusions of this study are summarized below.

Based on the strength of the preliminary economic figures, it is hereby recommended that PILSS proceed to initiate a Local Consultant design and tender documents contract. The availability of funds under the current budget will first need to be determined, as well as USAID approval to proceed.

It is further recommended that the Surabaya Lift Pump Project be dropped from consideration under SSIMP. The reason for this is that there are not sufficient water inflows into the Batujai Reservoir to allow for reliable irrigation supplies to the Surabaya area under current streamflow conditions. If the possibility of additional inflows to the Surabaya River through transbasin diversions is identified, then the Surabaya area may better be served using the existing Surabaya Weir facility.

Secondary data collection was initiated upon concluding the special study on water availability for Batujai-Surabaya. Under the direction of Mr. Richardson and Mr. Alap Basri from PU-NTB, offices have been contacted and data requested to support socio-agro-economic analysis for this project.

Several discussions were held with consultant Dr. Roy Elmore concerning farming patterns, present and future, in the Batujai-Surabaya project area.

With the completion of Dr. Elmore's special study, Batujai project economics were previewed. The early results, using what are termed as conservative cost and return figures, indicate a project EIRR of 18%. This respectable rate of return is attributable to the relatively low development costs for this project (the existing Batujai Reservoir headworks will serve the left bank extension area). Also increased income from higher yields and greater cropping intensities resulting from undertaking technical irrigation.

E.5 PU-NTB

Additional remarks are warranted here to commend the review of the draft Tiu Kulit PJR by PU-NTB staff and counterpart members. It is encouraging to have the PU staff take an interest in a review such as was conducted during 21 September and reported last quarter. Unfortunately, those comments have not yet been incorporated into the TK-PJR revision due to work required on the KII-PJR. Cooperation such as was demonstrated here is one of the goals of SSIMP to develop independent action by the various entities within PU.

F. Project Status Updates

In this Quarterly Report, we are introducing a new project management tool aimed at facilitating the exchange of information about SSIMP in general, as well as each of the subprojects in detail. We have called this new tool the "Project Status Update" (PSU). The latest activities in certain key areas on each project are highlighted, and any required corresponding actions by the parties involved in SSIMP are noted.

The PSUs for the NTB surface water projects, Tiu Kulit, Kalimantan II, Gapit and Batujai, are presented in Figures 4 through 7. A general Project Status Update for SSIMP overall is given in Figure 3.

SSIMP is a complex project, with many technical and administrative offices involved at both the provincial and central levels. Without coordinated action, SSIMP will continue to be hampered by unnecessary delays. We intend to use the PSUs to continually track SSIMP activities and to alert the various participating offices at Provincial PU, Jakarta PU Pusat, USAID and the TA of any actions they need to take. We hope that regular updating of the general and project PSUs, and distribution to all parties will improve implementation of the SSIMP Project.

NUSA TENGGARA TIMUR

A. General

At the start of this quarter, the Technical Assistance staff of the NTT office comprised the following long-term members:

Donald Adolphson, Hydrogeologist (Global)
Martin Wright, Agriculturalist/Rural Development
Specialist (Global)

During this period, the following individuals made visits to the NTT office:

Mr. Donald Stazy, Harza's Geophysical Survey Specialist from Chicago, arrived in NTT on 21 September. He could not start the field work until 17 October due to delays in receiving his equipment via airfreight from Jakarta. Training sessions in geophysical survey methodology was given to select members of P2AT staff during this interim period.

Actual field work got underway on 18 October and was finished on 1 November. During this period, resistivity readings were taken at 46 sites and seismic readings at 22 sites in the Oesao-Pariti Alluvial Plain. In addition to this, hydrological data was collected in the potential agricultural areas that are most likely to be developed. The period 2-4 November was spent analyzing field data, writing reports and packing the equipment. Mr. Stazy left for NTB on 5 November accompanied by Ir. Soekardi.

Ir. Santo Purnomo, DOI-II, accompanied by Ir. Gunawan Widjaja and Ir. Joes Oemarhamzah of USAID, spent the period 17-20 October in NTT. They held discussions with the P2AT project manager and staff plus TA team concerning the following:

1. Program until September 1993
2. 1990/1991 DUP
3. Tender document revisions
4. Equipment procurement

Agreement was reached that the long range program in NTT would include the drilling of 129 exploration wells and constructing 79 dug shallow wells. Of these, 108 are estimated to be suitable for production purposes. Based on the assumption that each could irrigate 10 ha, this would put the irrigated area in excess of 1,000 ha by the end of year 1993.

The main results of the discussions on the 1990/1991 DUP for NTT were that a total of 25 test/production wells would be drilled, and 10 dug wells would be constructed. The construction of dug wells at this stage will be in areas

believed to have potential for shallow well development but where there are no existing wells to test. It is considered unreasonable to expect the farmers to take the risk of digging wells in areas where there are no existing productive wells to demonstrate the potential of these wells for irrigation. The total number of both drilled and dug wells constructed in FY 1990/91 would therefore be 35. Well construction and testing will be followed by survey and design work and the administration required to release the funds for construction. Construction of the sites has been limited to a maximum of three sites per month to allow for careful supervision and beneficiary participation. Due to this scheduling, the number of systems constructed in FY 1990/1991 will be limited to 12. The proposed budget also includes funding for the survey and design work and procurement of equipment.

A long discussion was held on the revisions of the Tender Document for Drilling Works and the responsibilities and obligations of all concerned parties. The financing and staffing responsibilities of P2AT and TA team were discussed for the geophysical survey along with a time frame to complete the study.

During the period 2-5 November, Ir. Soekardi was in NTT to aid in finalizing the SSIMP groundwater program report and to review the geophysical survey procedures.

From 18-22 November, two representatives from the Center for Agro Economic Research (CAER) in Bogor accompanied by Suzanne Siskel from USAID visited SSIMP sites and discussed a proposal for a groundwater farming systems research program to be conducted in NTT and NTB through the Nusa Tenggara Agricultural Support Program (NTASP), Litbang Pertanian and other relevant sections of the Agency for Agricultural Research and Development (AARD), and with funding from the World Bank.

A draft TOR had been prepared by Dr. Momuat, the project manager for the NTASP/Litbang program based in Kupang. Meetings were held with the KaKanwil Pertanian, Dr. Momuat and other Litbang staff to discuss this TOR and the possibilities for coordination between the two projects.

Many aspects of the proposed program would be complimentary to the SSIMP and other groundwater development programs within the two provinces, providing valuable technical support. However, a number of project activities proposed in this TOR involved aspects of groundwater development which are intrinsic components of the SSIMP and other existing programs. These include investigation of appropriate technologies for pumping and distribution systems; organization and management of WUAs; methods of payment for O&M costs; and monitoring environmental effects of groundwater irrigation development, such as declining water levels and salt water intrusion.

Components of the proposed program considered to be particularly beneficial and appropriate for implementation through the AARD include:

- A review of data indicating areas within the two provinces suitable for groundwater irrigation development;
- soil surveys to identify prevailing soil types within these development areas;
- marketing studies;
- cropping trials to identify crops and cropping patterns appropriate for the various climatic and agronomic conditions;
- economic analysis of alternative crops and cropping patterns to identify systems with the highest returns thereby increasing the capabilities of the farmers to cover a higher percentage of system costs;
- on-farm research and farm case-studies to investigate the capability of the new technologies within the farming systems;
- introduction of improved farm tools, particularly for use with draft animals;
- environmental impact of groundwater irrigation on farm soil conditions;
- simple pumping and distribution technologies for very small systems (less than 1-2 ha).

The implementation of this program should also provide the opportunity to strengthen coordination between the Public Works and Agricultural offices for the development of groundwater irrigation and establishing appropriate training programs for agricultural extension workers.

If this program can proceed soon, recommendations for improved cropping systems with higher economic returns could be available for extension to the farmers in 3-4 years. According to the implementation schedules for the SSIMP, this should coincide with the transfer of financial responsibility for the initial expansion phase irrigation sites. During the early period of irrigation system operation, when P2AT retains responsibility for O & M costs, it is expected that cropping systems will be restricted to the more easily managed crops such as beans and corn, allowing time for the farmers in the WUA to gain confidence in the management and organizational aspects of system operation. Following this period, introduction of new cropping patterns generating higher returns should improve the farmers' capability to cover a greater percentage of operational costs.

Dr. Agus Pakpahan and Ir. Wirawan of the CAER were to revise the TOR for the proposed program and provide copies through USAID for further comments.

B. Trips

TA consultants Wright and Adolphson visited the SSIMP office in Mataram on 3-5 October to discuss with Ir. Soekardi the report on SSIMP groundwater program implementation targets and produce schedules for the proposed groundwater TA extensions. It was concluded that NTT consultants would be responsible to finalize the report with input from Ir. Soekardi on the implementation schedules and targets for NTB and SulSel. Also discussed at this meeting was the time frame and procedures for the geophysical survey for NTT, NTB and SulSel.

C. Meetings

At a meeting on 6 December with P2AT-NTT project manager and staff (Sihombing, Abadi Putra, and Kendil) and TA consultants (Wright and Adolphson), discussions were held on the FY 1990/91 budget and the long range plan for implementation of SSIMP irrigation system development. Mr. Sihombing was to meet with DOI-II in Jakarta on 11 December to discuss these matters.

Mr. Sihombing stated that, due to the delays experienced in getting the present drilling contract finalized, he is concerned that future contracts will also be delayed. He proposed that a combined contract to be written for the exploration wells to be drilled in FY 1990/1991 and FY 1991/92. The contract would be for the two-year period with P2AT and private contractors drilling the exploration wells. The same method would be used for the last two years of SSIMP. Therefore, only two contracts would be written instead of four.

Discussions were also held on the status of equipment procurement for NTT. TA consultants stated that an inquiry would be sent to Harza in Jakarta concerning this matter.

It was agreed that the overall targets for the number of wells and irrigation systems to be developed would remain the same as those agreed in the 17-19 October meeting with USAID, DOI-II, P2AT, and TA consultants, i.e., 108 irrigation systems developed from a total of 129 drilled wells and 79 dug wells.

D. Reports

Both long-term TA consultants spent much of their time during this reporting period preparing a report reviewing SSIMP groundwater program implementation and targets and producing implementation schedules for the proposed TA extension.

E. Other Major Activities

Staff of the O & M section of P2AT have been involved in trying to establish draft AD/ART (constitution and by-laws) for the WUA at the Lukman Barat SSIMP site and at Pukdale I, the original P2AT demonstration site.

The search continued for dug wells with potential for irrigation development; pumping tests were conducted on three wells during this period.

Measurements continued during this period on the observation wells in the Oesao-Pariti plains. In December, two readings were taken to establish the low water level before the heavy rains come in January. The three months of records on the wells have been plotted on hydrographs. Next quarter, the hydrographs will be analyzed to ensure that sufficient data are being collected to give meaningful results on the hydrologic system.

SULAWESI SELATAN

A. General

At the beginning of the quarter, a full complement of five long-term Technical Assistance Team Members was assigned to Ujung Pandang. The team members were:

Dennis McCandless, TA Team Leader (Harza)
D. Noel Corcoran, Civil Engineer (Global)
Carol Hetler, Social Scientist (DAI)
Heru Sekti, Hydraulic Engineer (Wiratman)
Salahuddin Gani, Civil Engineer (Wiratman)

A large number of long-term TA Team staff from other SSIMP offices and short-term TA Team members were in Ujung Pandang to assist with the heavy workload in the SulSel office during the quarter. They included:

Mr. Robin Erickson, Agricultural Economist (DAI), NTB, from 13 November through 9 December to perform agro-economic work on the Awo, Salomekko, Ponre-Ponre, and Selli-Coppobulu projects.

Dr. Peter Ames, Project Environmental Scientist (Harza), from 8 October to 15 December (including time spent in Mataram from 30 October to 13 November on NTB studies), to prepare Environmental Assessments.

Dr. Peter Neame, Environmental Scientist, from 2 October to end of quarter (including time spent in Mataram from 30 October until 9 November), to prepare Environmental Assessments.

Mr. Salahud Din Khan, Geotechnical Engineer (Harza), from the beginning of the quarter until 2 November and from 19 November until 28 November to assist with field investigations, lab testing and analysis for the four active SulSel projects.

Ir. Jansen Wongso, Geotechnical Engineer/Geologist (Wiratman), from 4 to 24 October, to assist with field and laboratory tests and reporting.

Mr. D. A. Frey, Geologist (Harza), from 28 October until 9 December to review and assist with Local Consultant work on geologic mapping, drilling, and analysis for Ponre-Ponre and Selli-Coppobulu.

Ir. Heru Subana, Geologist (Wiratman), 6 to 15 December, to continue work on the geological investigation at Ponre-Ponre, including follow-up on work started by Mr. Frey.

Mr. Wayne Bougas, SSIMP Training Coordinator (Harza Consultant), from 1 October until 8 October to gather information needed to prepare a training program for the SSIMP staff in SulSel.

Mr. Don Stazy, Geophysical Investigation Specialist (Harza Consultant), 27 November until 10 December, to plan and conduct a geophysical survey of the proposed groundwater development sites in SulSel.

Ir. Sukardi, Hydrogeologist (Wiratman), NTB, 27 November to 1 December, to assist Don Stazy in planning the geophysical survey.

Mr. Khalid Jawed, Hydrologist (Harza), 20 December through the end of the quarter to review the hydrologic work on the four active projects and train Local Consultant and PU staff in various methods of analysis appropriate to the studies underway.

Official visitors during the quarter included:

Ir. Gunawan Widjaja (USAID), 8 to 9 December, to attend the environmental scoping session related to Ponre-Ponre and Selli-Coppobulu projects, in Watampone.

Mr. Jerry P. Bisson, Environmental Officer (USAID), on 5 October, to briefly discuss the SulSel SSIMP developments.

Auditor from an outside firm employed by USAID, on 10 October, to review matters concerning Project vehicles.

Bpk. Sunardi and Bpk. Agus Praptomo (PU Bina Program, Subdit KLS, Jakarta), 9 December, to present a set of English translations of GOI environmental laws and draft PU environmental assessment guidelines, to SSIMP office in SulSel.

B. Trips

Team Leader Dennis H. McCandless was in Jakarta from 10 until 20 October, 12 to 17 November, and 8 December until leaving for a vacation in the United States on 14 December. In each case, the trip involved working with the Chief of Party to work out details of the proposed extension, and modification of scope, of the TA Team's contract with USAID.

Dr. Carol B. Hetler, Social Scientist, continued with revisions to the draft Environmental Assessments for Tiu Kulit and Kalimantanong II from the beginning of the quarter through 8 October, in Mataram and Jakarta.

From 24 and 25 October, Noel Corcoran and Carol Hetler visited the Ponre-Ponre site with PU staff, to assess proposed

reservoir area, dam site, roads, and settlements in upper catchment area. The axis for the upstream dam alternative and proposed drill hole locations were located.

During the period 12 to 17 December, Dr. Hetler traveled to NTB to assist with the USAID Mission Director's Implementation Review (DIR).

Mr. Noel Corcoran accompanied Chief of Party Eric Will and SulSel PU engineer Soeprapto B. on a visit in early October to the Dumbil Irrigation Project in Central Java for discussions with consultant personnel regarding their experience with the quality and application of the contract document package.

From 5 to 7 November, Mr. Corcoran and PU staff were at the Awo site to finalize the river diversion location, inspect road alignments, select the location of the permanent project office, and review tertiary block boundaries.

On 20 November, Mr. Corcoran visited the Salomekko Project area to check 1:5000 irrigation service area maps.

Mr. Corcoran was at the Ponre-Ponre site on 5 and 6 December to check proposed secondary canal alignments.

From 17 to 19 December, Mr. Corcoran was in Jakarta to attend a briefing meeting to bring PU Jakarta staff up to date on SSIMP SulSel design activities and a review meeting for the Kalimantan II contract documents.

Dr. Neame and Dr. Ames spent from 16 to 19 October in the field, visiting the Ponre-Ponre, Selli-Coppobulu and Salomekko sites for water quality sampling and review of site environmental conditions.

Dr. Neame and Dr. Ames made a brief visit to the Awo project area on 28-29 November to review site conditions.

On 8 and 9 December, a delegation including TA Team members Ames, Corcoran, and Neame were in Watampone for the Environmental Scoping Session for Ponre-Ponre and Selli-Coppobulu.

C. Meetings

Numerous informal meetings were held among PU staff, Local Consultants, and TA Team members, as in previous quarters.

Several meetings were held during the quarter to provide formal comments on reports produced by local consultants. These meetings are listed on the following table:

<u>Project</u>	<u>Contract</u>	<u>Report</u>	<u>Contractor</u>	<u>Date</u>
Awo	Design	Interim Report Design Criteria	Dacrea Dacrea	2 December 2 December
Salomekko		none		
Ponre-Ponre		none		
Selli-Coppobulu		none		

Each of these review meetings was attended by PU staff, TA Team members, and key personnel from the local contractor. Specific problems with the contractors work were identified verbally by the PU and TA Team staff members during the meetings, and were later confirmed in writing.

An environmental scoping session was held in Watampone on 9 December, to review environmental concerns related to the Ponre-Ponre and Selli-Coppobulu projects. Over 46 participants from a wide range of local and regional government agencies were present, and several important issues related to project environmental planning were raised and discussed. A summary of the discussions at the scoping session for Ponre-Ponre and Selli-Coppobulu is found in Appendix C of this quarterly report.

D. Reports

The TA Team was active in writing a number of project reports during the quarter, although none of the formal project reports have been completed.

Work continued over this period on finalizing the Awo and Salomekko Environmental Assessments. EA documents were started for the Ponre-Ponre project.

Preparation of the draft Project Justification Report for Awo continued as TA Team resources permitted. Essentially, all of the report is complete except for engineering descriptions of the project hydrology, the proposed structures, and the construction plan.

E. Other Major Activities

E.1 Awo Project

General. PT. Dacrea's progress on final design and contract document preparation was good during the quarter, and draft contract documents are expected to be available for review sometime during the first quarter of 1990. In December, discussions were underway to provide for a future increase in irrigation service area in the project design, since adequate water appears to be available.

Preliminary Design and Geotechnical Studies. Review of the geotechnical sections of the GeoACE predesign report was completed by TA Team Geotechnical Engineer Salahud Din Khan during the quarter. A large number of corrections and revisions were requested of GeoACE, and they were nearing completion at the end of the quarter. The corrected information has been supplied to final design contractor PT. Dacrea as it has become available.

Detailed Design. Detailed design work continued throughout the quarter. Approval to undertake additional surveying and geotechnical investigations was obtained. All surveying work for the irrigation system is now complete. Mobilization to conduct the geotechnical investigations was underway at tl. end of the quarter. Draft designs for the intake complex, primary and secondary irrigation canals, roads, bridges, appurtenant structures, and project buildings are nearing completion. Review submissions of design drawings have begun.

Reports. Work continued on the draft PJR and EA reports during the quarter. These are expected to be completed in the next quarter when increased TA Team staffing levels in SulSel should help reduce the backlog of report writing and editing.

PT. Dacrea completed their Design Criteria and Interim Reports during the quarter.

Agro-Economic Analysis. Formatting and editing of the Awo agriculture and economic draft chapters for the Awo PJR was undertaken by project economist Robin Erickson. A meeting was held with Abd. Wahab of Provincial PU on 4 December, to complete a form from PU Jakarta requesting economic information about the project.

E.2 Salomekko Project

Pre-Design Services. Progress on the predesign work contracted to PT. Airstan Ekawasta was minimal during the quarter. Alternatives for developing the information needed to complete a Project Justification Report and terms of reference for a final design consulting contract were being

explored by PU and the TA Team, in the event that Airstan is unable to complete its work.

Geotechnical Investigations. The geotechnical investigations for Salomekko, being conducted by Indec and Associates, were nearing completion at the end of the quarter. New soil samples, to replace those previously tested improperly, were obtained under the direction of TA Team members and PU staff. Reasonably located borrow areas for dam construction were identified in the field, quantities of available materials were investigated, and new test pit and auger samples were obtained for laboratory analysis. Lab testing continued in the PU laboratory located in the SSIMP building, following a hands-on training program in procedures and reporting requirements conducted by TA Team Geotechnical Engineer Salahud Din Khan. Civil Engineer Salahuddin Gani continued to monitor testing for the TA Team. Most of the simple testing was completed by the end of the quarter, but triaxial and permeability tests remained to be finished.

Hydrology. Near the end of the quarter, TA Team Hydrologist Khalid Jawed was reviewing the work completed some time ago by Airstan, PU, and TA Team personnel. His early impressions indicate that the available runoff may have been overestimated, and that project benefits may be less than estimated for the Mid-Term Review in July and August 1989.

Environmental Assessment. Work on the Salomekko EA resumed during the quarter with Peter Ames and Peter Neame available to work on SulSel developments.

Agro-Economic Analysis. Work was begun on the analysis for the agricultural and economic chapters of the Salomekko PJR.

E.3 Ponre-Ponre Project

General. The two consulting firms working on Ponre-Ponre, Indec & Associates and Parimac & Associates, continued to make relatively good progress, although they are behind the optimistic schedule included in their contracts.

Surveying and Mapping. Surveying and mapping required under Parimac's contract were nearly complete during the quarter, with the reservoir and second dam site maps now done. The dam site map may require more work, since not enough points were measured to adequately describe some topographic details.

Geologic Investigations. A great deal of Local Consultant, PU staff, and TA Team emphasis was placed on geologic evaluation of the two alternative dam sites during the quarter, since selection of the site is considered critical to maintaining the schedule for project development. Drilling at both sites was completed, field mapping was underway, borrow areas were identified, and material testing

was started. Based on the results of the investigations, the second (upstream) dam site appears to be more attractive:

- it has a slightly better ratio of storage to dam height than the downstream alternative
- it does not involve construction of saddle dams that would be required at the downstream site
- it appears to be better isolated geologically from the large spring near the hamlet of Ponre-Ponre
- foundation conditions appear to be adequate for construction of a 30- or 40-m high dam.

Layout work is proceeding for a dam at the upstream site.

Land Capability Evaluation. Completion of the Land Capability Evaluation was delayed somewhat due to a problem with personnel availability at the beginning of the quarter. Indec & Associates has therefore hired a consultant from Hasanuddin University's Faculty of Agriculture, Dr. Ir. Christianto L., MSc., to complete the evaluation. Work was underway at the end of the quarter.

Hydrology. Hydrology studies continued during the quarter, but none had been finalized. TA Team Hydrologist Khalid Jawed arrived during December to work with PU and Local Consultant staff to complete these studies.

Preliminary Design Studies. Preliminary design work continued, but geotechnical, land capability, and hydrologic study results are needed before it can be completed.

Environmental Assessment. TA Team Environmental Scientists Ames and Neame started work on the EA during the quarter. A Scoping Session was held in Watampone on 9 December to solicit comments on potential environmental issues from local agency officials and other interested parties. Results of this session are presented in more detail in Section E6, below. The Environmental Studies Center of Hasanuddin University was contracted to gather baseline water quality data in the project area. Other data was collected in the field and from secondary sources, and a working draft of the EA document was started.

Agro-Economic Analysis. Programming the data analysis routines for the Ponre-Ponre Farm Survey was completed.

Questionnaire responses had previously been entered into computer data files by trained counterpart staff using a double entry system. A program for comparing the independently entered data sets was created to catch and eliminate random data-entry errors and questionnaire discrepancies.

Once a verifiably clean data set was attained, the programmed routines were run on the data files to create analysis output. Bound copies of the Farm Survey

The results of the analysis give benchmark figures for the project area prior to undertaking the technical irrigation developments. The analysis results will be written up and presented in the PJR and EA project reports.

E.4 Selli-Coppobulu Project

General. The two Local Consultants working on Selli-Coppobulu continued to make gradual progress. Problems with the basic project concept contributed to the slow pace of work. Field investigations are showing that the originally identified dam sites on the Selli and Coppobulu rivers are located in an extremely porous coral limestone formation, and control of reservoir seepage probably would not be economically or technically feasible. A dam site farther upstream on the Selli River was identified during the quarter, but it controls a relatively small drainage area. Also, water availability studies indicate that the potential irrigation service area will be even smaller than the most recent estimate of 1200 ha. The geophysical investigations conducted for the groundwater program did not indicate a good potential for developing high yielding wells in the area.

Surveying and Mapping. Additional 1:2000 mapping at the upstream dam site will be required. Other surveying and mapping by Seecons is complete. Canal surveys by Jasa Mitra have not been started since the extent of the irrigation service area has not been established.

Geologic Investigations. The methods, equipment, and results of the drilling at the original Selli River dam site were reviewed by TA Team Geologist D. A. Frey upon his arrival in SuSel. Significant problems were uncovered, and recommendations for solving them were presented to PU and Seecons. The drilling equipment was in very poor condition. Replacement parts were obtained and repairs were completed during the quarter. Improved drilling, water pressure testing, and logging procedures were outlined. One hole was redrilled, with improved core recovery and test results. The extremely poor rock quality made it especially difficult to obtain good results.

A drilling program to evaluate conditions at the new upstream dam site on the Selli River was designed, and work was underway at the end of the quarter. The budget originally allocated for drilling at the Coppobulu site has been reallocated for this work. Samples of material from potential borrow areas were obtained from test pits and laboratory testing was started during the quarter.

Land Capability Evaluation. No progress has been made on the land capability studies. Jasa Mitra is considering hiring the consultant from Hasanuddin University who is completing the Ponre-Ponre work to do the studies at Selli-Coppobulu.

Hydrology. TA Team Hydrologist Khalid Jawed was reviewing the Local Consultant's work on the Selli-Coppobulu water availability and design flood studies at the end of the quarter. He will be working with PU and Jasa Mitra staff to make any necessary revisions in the studies during the next quarter.

Preliminary Design Studies. Jasa Mitra has been encouraged to move slowly on the preliminary design work until decisions can be made on a dam site and the area that can be irrigated by the project. Little progress was made during the quarter.

Environmental Assessment. Paralleling their work on Ponre-Ponre, TA Team Environmental Scientists Ames and Neame started work on the EA during the quarter. The Scoping Session held in Watampone on 9 December also served to solicit comments on potential environmental issues at Selli-Coppobulu from local agency officials and other interested parties. Results of this session are described in more detail in Section E6, below. The Environmental Studies Center of Hasanuddin University was contracted to gather baseline water quality data in the project area. Other data was collected in the field and from secondary sources, and a working draft of the EA document was started.

Agro-Economic Analysis. Work was initiated on analysis of the Selli-Coppobulu Farm Survey. The first step was organizing PU counterpart staff to complete coding of the questionnaires and to carefully cross-check questionnaire pairs for discrepancies. The program that had previously been written for loading data (used in loading Gapit and Ponre-Ponre Farm Survey data) was modified slightly to account for minor questionnaire changes that were incorporated for this survey. A team of counterparts was identified for the task of entering the questionnaire responses into computer data files. Upon the conclusion of this task, the data will be available for processing by programmed analysis routines.

E.5 Raja-Talaga Project

Site Profile Activities. Secondary data compilation continued during the period by counterpart staff. Detailed results of the Raja-Telaga Farm Survey await: (1) completion of data entry; and, (2) execution of programmed computer routines for analysis.

There was no other activity on the Raja-Telaga Project during this quarter. Discussions regarding deleting this project from SSIMP continued.

E.6 Environmental Studies

SSIMP Environmental Scientists, Dr. Peter Ames and Dr. Peter Neame reviewed site environmental conditions at Ponre-Ponre and Selli-Coppobulu in the field from

16 to 19 October. Subsequently, they prepared an Environmental Scoping Session Briefing Paper, which was presented to about 46 participants in the scoping session, held in Watampone on 9 December. Results of the scoping session are presented in their Summary of Environmental Scoping Session Discussion. (See Appendix C; also presented in Bahasa Indonesia in Appendix D.)

The main questions and issues that were raised included the following:

- Q: Project boundaries: What are the project boundaries?
A: The exact boundaries of these project areas are still not known, because the studies of the projects are still in progress. Approximate boundaries were shown on the maps available at the meeting.
- Q: Are the needs of downstream water users (domestic use and livestock watering) being taken into account, in the design of these projects?
A: Yes.
- Q: Is the Project Team regularly providing up to date information to the public about these projects?
A: Yes. However, detailed answers cannot be given yet because these projects are still in the predesign stage.
- Q: What about land acquisition, compensation for buildings, trees, etc., and any necessary resettlement?
A: A Land Acquisition Committee will provide compensation at prices considered fair. Some families (perhaps 35) will have to be resettled from the proposed reservoir area at Ponre-Ponre.
- Q: Will these projects be able to upgrade/repair village roads and bridges?
A: Yes. General access and transportation in the area will improve with these projects.
- Q: Are land suitability studies being done? What will cropping intensities be with improved irrigation? Will water user's associations be organized?
A: Land suitability studies and cropping pattern and cropping intensity investigations are all part of these project feasibility assessments. The project will assist in organizing water user associations and will work with local government. Every effort will be made to involve local people as the project develops.
- Q: Does the Ponre-Ponre project area in any way conflict with the boundaries of the military training base (mostly located in Desa Swadaya)?
A: The base is outside the boundaries of the irrigation project.

- Q: Will this project affect any of the wells that have been dug recently for domestic use?
- A: A study of water distribution currently being done by the project is addressing this issue.
- Q: Will the Ponre-Ponre project conflict with further development of sugar cane for the Camming Sugar Factory?
- A: Although sugar cane grown for the Camming Sugar Cane Factory now occupies about 9,000 ha, that includes only about 40 ha in the proposed irrigation system service area (in Desa Bune). These fields will have little or no effect on the project, and it is understood that no further lands within the service area are to be acquired by the factory.

E.7 PU-SULSEL

There have been no significant changes in the PU SSIMP organization in SulSel since the second quarter of 1989. Workload continues to be very heavy for senior technical and administrative staff, but the organization is functioning smoothly.

F. Project Status Updates

As described above in Section F of NTB Province Activities, a new management tool, the Project Status Update (PSU), is being introduced in this Quarterly Report. The current PSUs for the South Sulawesi surface water projects, Awo, Salomekko, Ponre-Ponre, Selli-Coppobulu, and Raja-Telaga, are presented in Figure 8 through 12.

GROUNDWATER

NUSA TENGGARA BARAT

A. General

During the period 6 November to 27 November 1989, Mr. D. F. Stazy completed a short-term assignment in Mataram and Sumbawa as a Geophysicist consultant. He conducted geophysical surveys within the proposed groundwater irrigation development areas located on the Sumbawa Island. The main objectives of this survey were:

- to determine the thickness of the unconsolidated sediments occupying the plains projected for the groundwater development and to establish the depth, trend and lithology of the substratum;
- to locate the most permeable areas within the unconsolidated body and to examine its process of sedimentation so as to select the areas with the best structural and permeability features in which the promising groundwater accumulation might have occurred;
- to locate the presence of salt water occurrence near the coastline and determine the extent, as well as the trend of the salt and fresh water interface.

This work was done using mainly a geoelectric direct current system instrument. The secondary instrument used was an engineering refraction seismograph. The two instruments are utilized in a complementary manner for a more productive subsurface detailed examination. If a suspect waterbearing layer is noted near the surface using the resistivity equipment, a quick seismic refraction measurement will determine whether or not this shallow layer contains the promising water. The extent and distribution of these shallow water bearing layers can be then located by using these combined measurements. As to the deeper water bearing layers, they can only be detected by using the electric resistivity method. During this field work, the Wenner electrode configuration was applied, since the resistivity profiling to establish the depth, trend and lithology of the substratum was required.

B. Trips

The following trips were carried out by the TA NTB-based Hydrogeologist Ir. Soekardi:

31 October-5 November, visited the SSIMP Kupang office to finalize the report on the "SSIMP Groundwater Program" with

Messrs. D. Adolphson and Martin Wright, and to prepare the program of geophysical surveys conducted in Sumbawa and South Sulawesi with Mr. Stazy.

9-13 November, visited Sumbawa with Mr. Stazy to introduce and define the locations for the program of geophysical surveys.

27-30 November, visited the SSIMP Ujung Pandang office and made a field trip to the Regencies of Wajo, Bone and Sidrap to introduce and define the locations for the SulSel program of geophysical surveys with Mr. Stazy. This fieldtrip was accompanied by Mr. Eddy Sanusi, hydrologist of P2AT Pinrang.

12-17 December, together with Mr. D. F. Stazy visited the SSIMP Jakarta office to finalize the report and discuss the draft report with USAID and P2AT Jakarta.

Dr. Carol Hetler, Project Social Scientist, made a brief visit to the Italian-funded groundwater project, located in southeast Lombok, NTB, on 17 December. During her visit, she talked with participating farmers along a 2 km long area. Only one site has been equipped with a pump and farmers have already had one harvest. Other groundwater sites in the area appear to consist of test bores. Some sites have had basic turnout structures and small canals built, but there are no obvious activities and work appears to have halted. Of the one actively functioning site, farmers report good yields of palawija crops such as onions and peanuts.

C. Meetings

8 November, meeting held in Mataram with the Project Manager of P2AT West Nusa Tenggara to discuss the program of geophysical survey in Sumbawa and the chance of transfer of knowledge to the P2AT personnel in the field of applied geophysical science.

28 November, meeting in Ujung Pandang with the staff of P2AT Pinrang dealing with the program of geophysical survey conducted in the Regencies of Wajo, Bone and Sindrap.

13 December, the draft report of the results of the geophysical surveys carried out in Kupang, Sumbawa, as well as in South Sulawesi was discussed during the meeting held in the SSIMP Jakarta office. This meeting was attended by Messrs. Blank and Gunawan from USAID; Mr. Dennis McCandless, Team Leader SSIMP SulSel and Mr. Umar Siddik from PAT; DOI-II, Jakarta.

D. Reports

In preparation: "Program of Groundwater Development for Irrigation in South Sulawesi".

E. Other Major Activities

The geophysical survey carried out during the period of 9-21 November in Sumbawa was located in the proposed project areas of Sape and Keli (Bima Regency) and the areas of Utan, Alas, Seteluk and Taliwang (Sumbawa Regency). During the survey a total number of 59 sounding points were measured using the combined resistivity and seismic refraction methods. The following table summarized the survey locations:

	Sape	Keli	Utan	Alas	Seteluk	Taliwang	Total
-----	-----	-----	-----	-----	-----	-----	-----
Geoelectric	10	8	7	3	2	4	34
Seismic	12	5	4	2	1	1	25
-----	-----	-----	-----	-----	-----	-----	-----
Total	22	13	11	5	3	5	59

Preliminary interpretation of the sounding curves indicates that shallow groundwater occurrence is widely distributed within the areas of Sape and Keli. Deeper water bearing strata are indicated in Sape, Utan and Alas. Seteluk and Taliwang are expected to yield groundwater only at considerable depths due the overlying impervious clay materials.

NUSA TENGGARA TIMUR

Groundwater activities for this quarter are reported on pages II-10 through II-14 above.

SULAWESI SELATAN

During the month of October, most of the project's activities were concentrated on the completion of the documents to procure the required equipment, as well as to prepare the Terms of Reference (TOR) for conducting the hydrological survey. For the preparatory work of this hydrological survey, a field survey was carried out in November by the P2AT Hydrologist, Mr. Edy Sanusi to locate the most favorable areas for this survey.

Similar to the Island of Sumbawa, a geophysical survey was also conducted in South Sulawesi. The field work was carried out during the period of 28 November to 9 December covering the proposed project areas of Selli, Macanang, Pampanella and Telle (Bone Regency), as well as the areas of Pammana and Wawangrewu (Wajo Regency). Two methods, the electric resistivity and seismic refraction methods were applied during this survey. A total number of 43 sounding points were measured, distributed within the following locations: .

	Selli	Macanang	Telle	Pampanella	Pammana	Wawangrewu	Total
Geoelectric	5	2	4	3	8	8	30
Seismic	2	1	2	1	3	4	13
Total	7	3	6	4	11	12	43

Preliminary interpretation of the sounding curves shows that shallow groundwater is widely distributed within the proposed project areas of Macanang, Telle, Pampanella and Pammana. Within the other two areas of Selli and Wawangrewu, the prospective water bearing layers are deep seated.

Training and Technology Transfer

Comprehensive Training Plan

Mr. Wayne Bougas, a training and human resource development specialist, was hired as SSIMP Training Coordinator on 5 September 1989. His principal duties are to devise and implement a three year comprehensive training plan for the project.

Mr. Bougas conducted "training needs" analysis from 15 September - 15 October 1989. TA, local contractors, and Provincial PU staff were interviewed. The purpose of this analysis was to identify the training needs of SSIMP staff in NTB, SulSel, and NTT.

A training plan for surface and groundwater development was written in November and December. The plan seeks to strengthen Provincial PU staff ability to successfully manage local consultants and contractors during the design, construction, and O & M phases of implementing small scale irrigation projects. The plan contains four basic programs: Project Management Training, Technical Skills Surface and Groundwater, Project Monitoring and Evaluation, and Personal Skills, e.g., English and computer. Training activities can be divided into two broad categories: Formal (Classical) courses, and On-the-Job Training.

The plan is currently being reviewed by DGWRD, USAID, and Harza and will be finalized at the Puncak Workshop in February, 1990.

Training Activities. On-going training activities in each province are summarized below:

Sulawesi Selatan

Language Skills. After completing placement tests at the end of the last quarter, about 30 PU staff members who are involved in SSIMP were assigned to three levels of English language classes during this quarter. Classes were organized

by the Language Center of Hasanuddin University and were held Tuesday, Thursday, and Saturday mornings in one of the conference rooms at the PU office. They ran from the first week in October until mid-December. Planning is now underway for continuation of classes during the first quarter of 1990.

Computer Skills. Computer training for PU staff continued at Oriental Computer and Communication's training center in Ujung Pandang. Most staff members have now completed introductory/word processing and Lotus 1-2-3 courses. Opportunities for advanced training in individual areas of interest are now being explored.

On-the-job assistance in software application is being provided by TA Team members on an as-needed basis. Economist Robin Erickson has continued to work with staff on the application of statistical, database, and spreadsheet software. Social Scientist Carol Hetler has assisted in word processing training, and Team Leader Dennis McCandless has been involved in use of engineering, utility, spreadsheet, and word processing programs. Introduction of project management and scheduling software is planned for the next quarter.

Geotechnical Laboratory Testing. Much of the geotechnical lab testing that has been included in the Local Consultant contracts has been subcontracted back to labs operated by PU. The early results of this work were not satisfactory. Record keeping, procedures, and reporting were all weak or incorrect. During the quarter, TA Team Geotechnical Engineer Salahud Din Khan, assisted by Wiratman Engineers Salahuddin Gani and Jansen Wongso, worked closely with the personnel in the lab located in the SSIMP building to improve performance. Proper procedures were outlined, new reporting forms were developed and photocopied, and a large number of retests were carried out under TA Team guidance.

A great deal remains to be done in the area of lab testing improvement before the parties involved in the project can be sure that reliable test results are available for use in project design and for monitoring construction quality. A program of additional training for PU lab personnel is currently being developed by TA Team Training Coordinator Wayne Bougas and SulSel TA Team members.

Core Drilling and Field Geology. The rate of drilling progress, core recovery, water pressure test results, and logging and interpretation of field drilling data have been disappointing for most of the Local Contractors working in SulSel. TA Team Geologists Heru Subana and Jansen Wongso Sengkono have been providing occasional assistance and training since the second quarter of 1989. During this quarter, they were joined by Geologist D. A. Frey from Harza's Chicago office. He spent most of his time in SulSel working in the field and the office with the Local Contractors for Ponre-Ponre and Selli-Coppobulu to improve their operations. Specific recommendations regarding equipment and methods were

presented to PU and the contractors. Many of the recommendations involved repairing or replacing equipment that was in poor condition or not suitable for the work under contract. He also worked with PU engineer Singkir Alam and Local Consultant Geotechnical Engineers/Geologists on field mapping, borrow area identification, etc. Mr. Frey reported on the Local Contractor training and equipment needs to DOI-I staff at the 18 December meeting in Jakarta.

NTB

Dr. G.R. Elmore conducted a four hour hydrology seminar on 2 November. About 25 participants attended this session describing his work on the water availability study for the Batujai-Surabaya project. There was also a discussion period at the conclusion of the formal presentation that generated additional remarks for benefit of those counterparts without specific experience on this project.

NTT

Training sessions in geophysical survey methodology were conducted by Mr. Donald Stazy, Harza's Geophysical Survey Specialist, for selected P2AT staff members September 21-October 17.

SECTION III

PROBLEMS ENCOUNTERED AND RECOMMENDED SOLUTIONS

NUSA TENGGARA BARAT

On 4 December, PU-NTB took delivery of five computer systems delivered by the vendor PT. Multi Graha Nusantara of Jakarta. When the contents were examined it was found that four of the central processor units (CPU) were not operative (i.e., would not boot up). Two CPU sustained shock damage sufficient to break the plastic frame surrounding the disk drives. In one CPUs, the disk drive door handles were flopping loosely so as to not be functional. There were various electrical cords missing and the items received did not match the included packing list (manifest).

The solution is to notify the vendor suggesting that he send a technician to Mataram to assess the damage and bring the necessary spares to initiate repair work. At the date of this writing, there has been no action other than the filing of a damage report and an inspection by Ir. Gunawan Widjaja and Mr. Schoenleber.

Apart from the geophysical field survey, not much field work was done on the projects during this quarter. Administrative procedures to get a commit PIL, as well as to release the prefinancing funds from Dit. TUA (Directorate of Budget Administration) are the main problems encountered. It appears that the procurement of equipment and the accomplishment of drilling works in Sumbawa, as well as the hydrological surveys in South Sulawesi will be postponed until the next fiscal year.

The following items have been submitted by the project manager of P2AT Nusa Tenggara Barat to the Directorate of DOI-II, Jakarta. P2AT reports that so far there is no response regarding a commitment PIL from AID:

- Procurement of equipment dated July 29, 1989
Nr.Kul2-Ag 2501/73/89;
- Drilling works to construct 10 exploratory wells in Sumbawa dated August 31, 1989 Nr. HL0202-Ag 2501/101/89;
- Reconditioning of drilling rig dated August 31, 1989
Nr. KU 12 Ag/250/106/89.

In addition, the construction of four experimental sites of dug well irrigation systems in Sape (Sumbawa) is still delayed, since the requested funds from Dit. TUA for the prefinancing of this work have not been released.

NUSA TENGGARA TIMUR

Many of the activities scheduled for implementation during this period (see implementation schedule in Quarterly Report No. 8) have not been realized.

The commitment PIL for construction of the third SSIMP experimental site at Lukman Timur and the training program was issued on October 20. After receiving notification, the P2AT-NTT project manager sent the request for the release of prefinancing funds to Dit. TUA. In mid-December, the project manager was informed that as these activities were not carried over from the FY 1988/89 DIP and included in the current FY 1989/90 DIP, Dit. TUA could not provide the prefinancing Rupiah funds. If this is in fact the case, and the funds cannot be issued until included in a current DIP, The Lukman Timur site is not likely to be constructed before April/May 1990, two years after the farmers were involved in the initial survey work for this 10-ha site.

The village survey, and design work for the Lifubatu and Tekat Makmur sites have been delayed, due mainly to the shortage of qualified staff and equipment. Poor coordination, both within and between sections of the P2AT office also continues to cause problems for project implementation.

SULAWESI SELATAN

A number of problems continued to affect progress of work in SulSel. The most important are:

1. Poor Local Consultant performance, especially on Salomekko.
2. Limited TA Team resources relative to the level of effort by PU and Local Consultants.
3. Poor performance of testing laboratories.
4. Delays in mobilizing the Water User Association Organizers (WUAO's).

These problems and recommended solutions are described in considerable detail in the previous quarterly report.

Improved Terms of Reference, more careful consultant selection, and better monitoring of performance and coordination of work have been contributing to a gradual reduction in the problems with Local Consultants. Dedication of substantial PU and TA Team resources will be needed to complete pre-design work on Salomekko, however.

During this quarter, TA Team resources in SulSel were increased substantially by bringing in short-term experts to

assist the long-term staff. Plans to add several long-term positions are under consideration.

Testing laboratory performance problems are mainly resulting from the limited training and experience of laboratory personnel. Short-term TA Team members have helped the laboratories improve procedures, but more assistance, over a long period of time, is needed. An improvement program, including training sessions and hands-on experience, is being developed by Training Coordinator Wayne Bougas and SulSel PU and TA Team staff members.

In the absence of WUAO's, design work for SulSel projects is proceeding along the path traditionally followed for medium-sized projects, as described in the previous quarterly report.

TRAINING AND TECHNOLOGY TRANSFER

The Groundwater Course was postponed twice, once from 21 November to 9 January, and again from 9 January to 30 January 1990. The course was initially postponed because funds had not yet been released from USAID. Diklat Pengairan requested the second postponement. In the future funding delays can be avoided by processing PILs at least two months prior to proposed course start dates.

SECTION IV

ACTIVITIES PLANNED FOR THE NEXT QUARTER

NUSA TENGGARA BARAT

A field trip with the Project Manager of Sumbawa Groundwater Development is scheduled to be carried out during the month of January to select the most favorable locations for drilling works and experimental sites of dug well irrigation systems programmed to be constructed in the next fiscal year.

The month of February will be dominated by the SSIMP Implementation Workshop and the Groundwater Development Training Course in Surabaya.

The Kalimantan II right bank canal (below structure BRKa 9) redesign work will continue into January. This will necessitate changes in the BOQ and engineer's estimate prior to tendering (or during tendering) depending on the pace of the tendering process.

There will be some corrections required to be made to the Tiu Kulit Dam tender documents in order to incorporate the suggestions by Mr. Santosh Banerjee after his discussions with Mettana in Bandung. There was also some possibility that additional field work may be required to ascertain the quantities that are claimed by Mettana to be available in borrow sites.

The TK-PJR will be revised and published during the next quarter. The draft KII-PJR will be published during the first part of next quarter. The environmental reports for Gapit and Batujai-Surabaya projects will be written and hopefully ready for draft publication toward the end of next quarter.

Agroeconomist Robin Erickson reports the following program for next quarter:

- Gapit PJR agro-economic chapters will be completed.
- Batujai-Surabaya secondary data gathering will be completed.
- Contribute the agro-economic summaries to the environmental reports for the above two projects.

Mr. Robin Erickson expects to remain in NTB during January, move to SulSel in February and the final month return to NTB.

NUSA TENGGARA TIMUR

Activities during the month of January will be dominated by the SSIMP Implementation Workshop and the Groundwater Development training course in Surabaya. During the remainder of this quarter until the end of the financial year, activities planned for the previous quarter but not implemented should be given priority.

SULAWESI SELATAN

Environmental Assessments. Work will proceed on finalizing the EA documents. The environmental assessment for the Awo project is expected to be completed in January. A draft of the Ponre-Ponre report is also expected to be completed in January, pending any change in the project description. Work will resume on the Salomekko environmental assessment when details related to hydrology and project description are clarified.

Project Justification Reports. The Draft Project Justification Report (PJR) for Awo will be completed early in the quarter. PU and TA Team resources will be concentrated, to the extent feasible, on completing the Draft PJR for Salomekko as well. Work will continue on Ponre-Ponre and Selli-Coppobulu PJR's with completion scheduled late in the next quarter or early in the following quarter.

Surveys and Preliminary Design. TA Team and PU resources will probably have to be used to complete this work for the Salomekko Project. Local Consultant work for Ponre-Ponre and Selli-Coppobulu is expected to be completed by the end of the quarter, although the result of the Selli-Coppobulu studies may be to drop the project.

Final Design and Tender Documents. Tender documents for the locally bid contract (roads and buildings) for Awo will be completed early in the quarter. Draft documents for the larger three ICB contracts are expected to be complete by the end of the quarter.

Consultant tender document preparation and selection of the design contractor for Salomekko are planned for the next quarter.

TRAINING AND TECHNOLOGY TRANSFER

The Training Coordinator will spend the first quarter of 1990 obtaining support and approval for the SSIMP's Training Plan. Meetings will be held with appropriate DOI-I and DOI-II staff. The purpose of these meetings is two fold: (1) to present and explain the plan to DGWRD officials, and (2) to

solicit their recommendations and input for improving the plan. The plan will be finalized at the Puncak Workshop in February 1990 and actual implementation will start during the second quarter of 1990.

The Groundwater Development Course will be held in Surabaya 30 January through 28 February 1990. Twenty-one participants from NTB, SulSel, and NTT are scheduled to attend. Members of the TA Team, Mr. Don Adolphson, Mr. Martin Wright, and Ir. Soekardi will also teach. The purpose of their participation will be make the course more specific to SSIMP project needs.

SECTION V
FINANCIAL STATUS

Contract expenditures are as shown below. Invoices G-1 through G-26 have been submitted through November 1989.

Invoice Number	Total Amount
G-1	\$ 3,640.84
G-2 (REV)	14,527.54
G-3	67,753.28
G-4	97,178.12
G-5	51,739.96
G-6 (Sum.)	61,013.10
G-7 (Sum.)	66,128.64
G-8 (Sum.)	70,944.88
G-9 (Sum.)	148,775.99
G-10(Sum.)	61,097.92
G-11(Sum.)	78,704.54
G-12(Sum.)	211,436.45
G-13(Sum.)	90,667.69
G-14(Sum.)	168,338.49
G-14(Sum.)Adj.	(17.65)
G-15	140,268.31
G-15 Adj.	(1,001.98)
G-15A	10,558.22
G-15A Adj.	(1.97)
G-16(Revised)	128,367.95
G-17(Sum.)	303,153.06
G-17(Sum.)Adj.	(61,771.81)
G-17A	2,793.12
G-18(Sum.)	215,773.58
G-19(Sum.)	170,485.57
G-19(Sum.)	(10,882.20)
G-20(Sum.)	127,786.69
G-20(Disallowed)	(5,540.17)
G-21	201,237.69
G-21(Disallowed)	(6,154.98)
G-22	131,430.80
G22(Disallowed)	(5,532.55)
G-23 (Sum.)	171,198.95
G-23(Sum.)Adj.	(502.79)
G-24	115,619.50
G-24 Adj.	(424.97)
G-25 (Sum)	195,331.99
G-25	(255.29)
G-26	117,492.90
G-27 (Sum)	335,078.65
G-28 (Sum)	214,254.47
Total	\$ 3,680,692.53

Expenditures by line item are as follows:

Category	Budget Amount	Total to Date
Salaries and Wages	\$ 637,729	\$ 562,177
Overhead	809,852	761,659
Consultants	55,695	43,319
Allowances	290,733	214,265
Travel, Transportation and Per Diem	515,877	328,189
Nonexpendable Equipment	16,000	18,373
Local Support Costs	106,032	109,527
Subcontract(s)	2,290,778	1,278,002
Other Direct Costs (includes DBA)	179,683	203,311
TOTAL ESTIMATED COST	4,902,379	3,518,822
Fixed Fee	225,509	161,870
TOTAL ESTIMATED COST PLUS FIXED FEE	<u>\$ 5,127,888</u>	<u>\$ 3,680,692</u>

About 27 months, or 84%, of the contract time has elapsed. Only about 72% of the funds have been expended. This is due primarily to start up staffing delays, especially in the groundwater programs, which have been remedied by re-allocation of positions, as described in previous sections of this report. There are also delays in billings, so the amounts shown above do not cover the full period through December 1989.

SECTION VI
MOVEMENT OF EMPLOYEES

All SSIMP staff remained at their respective posts as described in Section II, except for the following periods of local or sick leave, arrivals/departures as reported this quarter:

<u>EMPLOYEES</u>	<u>LOCATIONS</u>	<u>DATES</u>	<u>REMARKS</u>
1. Frey, J.	NTB	23 Oct.	DOI approved COP
2. Frey, J.	NTB	7 Nov.	began new position
3. Schoenleber	NTB	9-11 Oct.	sick leave
4. Schoenleber	NTB	13-14 Oct.	local leave
5. Erickson, R.	NTB	25-31 Dec.	local leave
6. Terry, H.	NTB	18-31 Dec.	local leave
7. Pamudji, R.	NTB	18-31 Dec.	local leave
8. Frey, J.	JKT	25-28 Dec.	local leave
9. Wright, M.	NTT	7 Oct.	local leave
10. Wright, M.	NTT	19-24 Oct.	local leave
11. Wright, M.	NTT	21-30 Oct.	local leave
12. Will, E.	JKT	25 Oct.	departed Jakarta
13. McCandless	SULSEL	15 Dec-5 Jan	vacation
14. Hetler	SULSEL	18-28 Dec.	local leave
15. Corcoran	SULSEL	20-30 Dec.	vacation

FIGURES

PROJECT STATUS UPDATE AS OF: 31 January 1990PROJECT: SSIMP - General

LOCATION:

NEXT ACTION/BY WHOM:

- A. DUP/DIP -- 1. Provincial PU, TA, and AID to coordinate better/earlier on DUP.
2. TA to prepare overall and detailed activity schedules. All parties discuss at February workshop.
- B. PILS/REIMBURSEMENT -- 1. Provincial PU, Jakarta PU Pusat, TA and AID should map out clearly step by step procedures at workshop.
2. Jakarta PU should designate one working-level individual to coordinate SSIMP (including groundwater) on DGWRD side, especially regarding PILs and reimbursement.
- C. LC DESIGN -- 1. Provincial PU assisted by TA need clear TORs for predesign and design contracts.
2. AID to decide if can approve a waiver to allow LC contracts to exceed \$ 100,000: otherwise project designs must be broken into several pieces.
- D. TENDER DOCUMENTS -- 1. Provincial PU with TA need to carefully review t.docs to ensure drawings, BOQ, and tech. specs conform.
2. PU Pusat and AID should agree on t.docs admin. clauses (Vol. 1 and 2) and use same for all SSIMP ICB contracts. Any revisions for LCB contracts also should be agreed.
- E. PREQUAL/BIDDING --
- F. CONSTRUCTION --
- G. PJR/CERTIFICATION -- 1. Provincial PU and TA should concentrate on completing draft PJRs ASAP, then send officially to SubDit Proj.Eval. so Sertifikasi Proyek process can start.
- H. EAR/ENVIR APPROVAL -- 1. TA to continue report writing; now require more definite project layouts and operating modes to complete analysis.
- I. FARMER/AGENCY PARTIC -- 1. PU Pusat and AID to complete contract with LP3ES so WUAOs can be fielded; this is urgent.

NEXT ACTION/BY WHOM:

J. TRAINING --

1. TA Training Coordinator to finalize SSIMP Training Plan with Diklat and AID based on 23 January Training Plan review meeting.

K. OTHER --

1. PU Pusat and AID should resolve question on Signatory Power for requesting/approving funds.

2. AID should complete their Director's Review of SSIMP to define which are critical project components that require increased attention.

3. AID, PU Pusat and Provincial PU should agree on how remaining funding will be spent, and which subprojects should be dropped for technical, economic or social reasons.

4. AID and PU Pusat should then agree on TA contract extension after further review of Harza's 17 Nov 89 technical proposal and staffing plan in light of point 3, above.

PROJECT STATUS UPDATE AS OF: 31 December 1989PROJECT: Tiu Kulit DamLOCATION: NTB

RECENT ACTIVITY IN KEY AREAS:

NEXT ACTION/BY WHOM:

- A. DUP/DIP** -- 1. PU NTB and TA reviewed draft budget totals from SubDit Binlak (see Att. 1) in Oct 89.
2. PU NTB and TA derived detailed line items/amounts for past/future years, and sent draft to SubDit Binlak (see Att. 2) in Nov 89.
3. Buildings new estimate: Plampang mess/2 hses plus Mtm 2 hses (435 m²) total Rp 119 M in FY 89/90. In FY 90/91, Sumbawa Besar mess/office plus dams site office (542 m²) total Rp 350 M inc. furniture for all.
- B. PILs/REIMBURSEMENT** -- 1. Funds for additional geology survey, construction supervisor for access road and buildings and construction of buildings were earmarked in PIL # 40 (Sept 8, 1989).
2. PU NTB decided to contract the buildings in Plampang & Mataram by using 100% GOI funds of 1989/1990 DIP
- C. LC DESIGN** -- 1. Dam and irrig. system design by PT. Mettana; access road and buildings design also by Mettana.
2. Design has been reviewed with SubDits Perenc. Teknis, and Binlak, AID and TA at several meetings (5 Oct, 29 Nov, and 19 Dec).
- D. TENDER DOCUMENTS** -- 1. PU NTB sent reduced set of weir, and irrig. system t.docs dated Sep 89 to SubDit Binlak and USAID - NTB and Mettana acknowledged revisions still needed in BOQ, dwgs, tech specs.
2. TA Banerjee/PU NTB Agus advised Mettana Bandung on drawing revisions in Nov-Dec. (Banerjee to Bandung again in Jan 90.)
- E. PREQUAL/BIDDING** -- 1. Prequal announced Mar-Apr 89 for K2, TK and Awo.
2. Receipt/evaluation/approved list for dam and system contracts (ICB) by DG letter to PU NTB dated 27 Nov.
3. Short list of consultants for Const. Superv. sent by DG letter to PU NTB dated 28 Nov.
4. LCB access road appointed by PU NTB to _____ (100% GOI)
5. LCB buildings for FY 89/90 are 100%
1. SubDit Binlak to review items/amounts for DUP -- revise to inc. furniture
2. Final agreement on DUP by SubDit Binlak, PU NTB, AID/TA at Feb 90 Workshop.
1. PU NTB to put additional funds for office buildings in Sumbawa and Dam Site in the 1990/91 DUP.
1. Mettana to complete BOQ, dwgs and tech specs revisions, with last TA review 5-15 Feb; submit final t.docs by 28 Feb.
2. After review by DOI I, DG to send TK design report and t.docs to OECF (who will request review in Japan)
1. LCB buildings for FY 90/91 with GOI/AID funding require selection process approved by AID.

GOI funded - PU NTB selected CV. Prima

F. CONSTRUCTION --

G. PJR/CERTIFICATION -- 1. TA and PU NTB revising PJR draft dated July 89 after NTB review meetings; to be completed in Jan 90.

1. TA to furnish original revised Draft report to PU NTB for Ir. Masnun signature - PU NTB submit to SubDit Eval. Proy. requesting Certification

H. EAR/ENVIR APPROVAL -- 1. Revised EAR version sent to PU NTB, SubDit KLS, AID on 25 Oct per comments SubDit KLS
2. TA Envir. Scientist met Drs. Nasri check status of approval 28 Dec.

1. TA to submit Exec. Summary in Indonesian.
2. DGWRD Envir. Committee to present approved EAR, to Ministry Board for approval (2 Feb)
3. AID to send EAR to Washington for approval

I. FARMER/AGENCY PARTIC --

1. AID/PU to approve LP3ES contract

J. OTHER -- 1. AID Director's Implementation Review visited Mataram and K2 weir site/area 14-16 Dec.
2. Regular Meeting held on 14 Nov b/n DGWRD, AID, OECF - revised schedule and budget for implementation.

1. AID to prepare SSIMP Strategy Statement and discuss/with DGWRD

Attachments:

1. Draft summary DUP by SubDit Binlak, Oct 89
2. Draft detailed DUP by NTB with TA, Nov 89
3. TK schedule (under preparation)

NAMA PROYEK : IRIGASI NUSA TENGGARA BARAT
 RACIAN PROYEK : PEMBANGUNAN IRIGASI ENABUNG NTB
 PROPINSI : NUSA TENGGARA BARAT

SSIRP USAID LOAN NO.497-T-092

Dalam Rp.10

NO.	URAIAN KEGIATAN	SASARAN (HA)		ESTIMATE TOTAL COST (SAR)		ESTIMATE TOTAL COST (PROPOSAL)	ALOKASI DANA		KEBUTUHAN DANA PER TAHUN												REMARKS					
		PROGRAM	REALISASI	APBN	LOAN		APBN	LOAN	1987/1988		1988/1989		1989/1990		1990/1991		1991/1992		1992/1993			1993/1994		1994/1995		
									APBN	LOAN	APBN	LOAN	APBN	LOAN	APBN	LOAN	APBN	LOAN	APBN	LOAN		APBN	LOAN	APBN	LOAN	APBN
I	ENABUNG TIURUKIT	1,700.0																								
1	S.I.D.	-	-	27.5	331.2	358.7	27.5	331.2	27.5	80.0	-	70.0	-	181.2	-	-	-	-	-	-	-	-	-	-	-	
2	Construction	-	-	7,134.0	7,134.0	14,268.0	7,134.0	7,134.0	-	-	-	-	-	122.1	122.1	591.3	591.3	3,567.0	3,567.0	2,853.6	2,853.6	-	-	-	-	
	SUB TOTAL I	1,700.0	-	7,161.5	7,465.2	14,626.7	7,161.5	7,465.2	27.5	80.0	-	70.0	122.1	503.3	591.3	591.3	3,567.0	3,567.0	2,853.6	2,853.6	-	-	-	-		
II	ENABUNG CAPIT ✓	1,000.0																								
1	S.I.D.	-	-	-	-	-	-	306.1	-	-	-	36.6	-	269.5	-	-	-	-	-	-	-	-	-	-	-	
2	Construction	-	-	4,825.0	4,825.0	9,650.0	4,825.0	4,825.0	-	-	-	-	-	1,085.0	1,085.0	2,337.5	2,337.5	1,402.5	1,402.5	-	-	-	-	-	-	Usaid
	SUB TOTAL II	1,000.0	-	4,825.0	4,825.0	9,650.0	4,825.0	5,131.1	-	-	-	36.6	269.5	1,085.0	1,085.0	2,337.5	2,337.5	1,402.5	1,402.5	-	-	-	-	-	-	
III	KALIMANTANG II ✓	2,800.0																								
1	S.I.D.	-	-	30.0	135.0	165.0	30.0	135.0	30.0	90.0	-	-	-	45.0	-	-	-	-	-	-	-	-	-	-	-	
2	Construction	-	-	5,849.0	5,849.0	11,698.0	5,849.0	5,849.0	-	-	-	-	95.3	95.3	2,444.6	2,444.6	3,309.0	3,309.0	-	-	-	-	-	-	-	
	SUB TOTAL III	2,800.0	-	5,879.0	5,984.0	11,863.0	5,879.0	5,984.0	30.0	90.0	-	-	95.3	140.3	2,444.6	2,444.6	3,309.0	3,309.0	-	-	-	-	-	-	-	
	TOTAL	5,500.0	-	17,865.5	18,274.2	36,139.7	17,865.5	18,500.3	57.5	170.0	-	106.6	217.4	718.1	4,120.9	4,120.9	9,218.5	9,218.5	4,254.1	4,254.1	-	-	-	-	-	

114-1

FUNDING/BUDGET REQUIREMENTS FOR SSIMP NTB SURFACE WATER PROJECTS
(in million Rp)

PROJECT: TIU KULIT --- Assumes OBCP funding under same arrangements as USAID is using (for lack of real information).

ITEM	QUANT -ITY	ESTIM TOTAL COST	BUDGET ALLOC		1987/88		1988/89		1989/90		1990/91		1991/92		1992/93		1993/94	
			APBN	LOAN	APBN	LOAN	APBN	LOAN	APBN	LOAN	APBN	LOAN	APBN	LOAN	APBN	LOAN	APBN	LOAN
S I D:																		
Site Profile		30	30	0	Note 1	10	0	10	0	10	0							
AWLR	one	9.62	5.247	4.373	Note 2													
Review Design		107.5	27.5	80		27.5	80											
Topo/Geotech		69.955	0	69.955				0	69.955									
Irrig Design/Dwgs		121.22	0	121.22				0	121.22									
Addl Drill/etc		60	0	60						0	60							
SUBTOTAL		398.295	62.747	335.54		37.5	80	10	191.17	10	60							
Land Aquisition		137	137	0				97	0		40	0						
CONSTRUCTION:																		
Access Road	3555 m	225	225	0	Notes 3,4.			225	0									
Buildings	945 m2	245	122.5	122.5	Note 4.			122.5	122.5									
Dam/Appurten	one	13928	6964	6964	Note 5.					1298	1298	3355	3355	2311	2311			
Irrig System	1800 ha	4416	2208	2208	Note 5.							903	903	1305	1305			
Road Resurface	3555 m	100	50	50														50 50
SUBTOTAL		18914	9569.5	9344.5	Note 6	0	0	347.5	122.5	0	0	1298	1298	4258	4258	3616	3616	50 50
Const Supv Rd/Bldgs		20	0	20						0	20							
Construc Services		2372	0	2372	Note 7.							0	336	0	1100	0	936	
Project Admin		945	945	0	Note 8.							134	0	438	0	373	0	

- NOTES: 1. Includes site profile activities for Gapit Project.
2. Originally budgeted in 1986/87.
3. Work on 918 m new road, and 2617 m existing road base coarse. Road finish is without asphalt.
4. Cost based on current estimates by PU; no price escalation included.
5. Cost based on January 1989 price level estimate done by PT Mettana, as used in Tiu Kulit Project Justification Report. Costs adjusted upward by appr 12% contingency, then escalation and exchange rate correction made to July89 price level. Cost then escalated 7%, and 10% tax added. Annual bydget derived using S-curve, and assuming 15% advance payment by GOI and 15% mobilization payment by OBCP on their halves. Advance recovery in Years 2 and
6. Total future construction cost and construction services cost, plus land acquisition is Rp.19,704M before taxes. This compares with Mid-Term Evaluation Team report of \$10.61M, or Rp.18,837M for same items at July 1989 constant price level.
7. Cost is 14.2% of dam plus irrigation costs (before tax), which covers approximately 50 TA and 95 LC man-months in OBCP-funded contract.
8. Cost taken as 5% of all construction costs--covers NTB PU administration costs.

54

PROJECT STATUS UPDATE AS OF: 31 December 1989PROJECT: Kalimantong II WeirLOCATION: NTB

RECENT ACTIVITY IN KEY AREAS:

NEXT ACTION/BY WHOM:

A. DUP/DIP -- 1. PU NTB and TA reviewed draft budget totals from SubDit Binlak (see Att. 1) in Oct 89.
2. PU NTB and TA derived detailed line items/amounts for past/future years, and sent draft to SubDit Binlak (see Att. 2) in Nov 89.

1. SubDit Binlak to review items/amounts for DUP -- revise to inc. furniture
2. Final agreement on DUP by SubDit Binlak, PU NTB, AID/TA at February Workshop.

B. PILs/REIMBURSEMENT -- 1. Earmark PIL No. 40 for construction of office building and housing was issued on Sept. 8, 1989.
2. GOI will prefinance this construction activities and USAID will reimburse later upon completion of the works.
3. PU NTB submitted the incomplete draft contract of office building and housing informally on Jan 17, 1990.
4. PU NTB also submitted the DUP proposal for FY 1990/91.

1. PU NTB to submit a complete draft contract officially.
2. USAID to review the draft contract
3. USAID to review the 90/91 DUP as preparation for next Earmark PIL.

C. LC DESIGN -- 1. Weir, left and right system design by PT. GeoSurvey; access road and buildings design by CV. Cipta Graha.
2. As agreed with SubDits Perenc.Teknis and Binlak at 4 Oct meeting, PU NTB proceeded with revision of lower right bank system; design complete in Dec 89.

D. TENDER DOCUMENTS -- 1. PU NTB sent reduced set of weir, left and right system t.docs to SubDit Binlak and USAID 12 Dec. - NTB acknowledged revisions still needed in BOQ, dwgs, tech specs.
2. AID asked TA to advise if BOQ, dwgs tech specs OK/final.
3. AID asked revisions to LCB buildings dwgs and specs in 8 Dec letter.

1. Dit Peralatan to give comments on 12 Dec docs.
2. AID (Legal/Finance) to give comments on docs.
3. PU NTB to revise BOQ and Cost Estimate weir, left and right (15 Jan)
4. TA check BOQ, dwgs, tech spec revisions
5. PU NTB to revise t.docs/produce new set
6. PU NTB revise buildings docs and TA to review - then PU issue

E. PREQUAL/BIDDING -- 1. Prequal announced Mar-Apr 89 for K2, TK and Awo.
2. Receipt/evaluation/approved list for weir, left, right contracts (ICB) by DG letter to PU NTB dated 24 Nov.
3. LCB access road appointed by PU NTB to CV. Eka Mental (100% GOI)

1. DG to send approved ICB list to AID (17 Jan)
2. SubDit Binlak and AID to agree final ICB list

4. LCB buildings short list sent by PU NTB to AID - AID approved 8 of 10 on 8 Dec

F. CONSTRUCTION -- 1. Access road (4.0 km upgrade) construction started; to complete May 90.

G. PJR/CERTIFICATION -- 1. TA gave "Pre-Release" copy to AID 12 Dec with some holes - TA completing draft in Jan 90.

H. EAR/ENVIR APPROVAL -- 1. Revised EAR version sent to PU NTB, SubDit KLS, AID on 25 Oct per comments SubDit KLS
2. TA Envir. Scientist met Drs. Nasri check status of approval 28 Dec.

I. FARMER/AGENCY PARTIC -- 1. AID Director/team met Tepas Village head/farmers on 15 Dec, and also Sumbawa Bappeda staff that evening.

J. OTHER -- 1. AID Director's Implementation Review visited Mataram and K2 weir site/area 14-16 Dec.

Attachments:

1. Draft summary DUP by SubDit Binlak, Oct 89
2. Draft detailed DUP by NTB with TA, Nov 89
3. K2 schedule (under preparation)

1. TA to send Draft report to PU NTB - review/approve - PU NTE submit to SubDit Eval. Proj. requesting Certification

1. TA to complete Exec. Summary in Indonesian.
2. DGWRD Envir. Committ to present approved EAR to Ministry Board for approval (2 Feb)
3. AID to send EAR to Washington for approval

1. AID/PU to approve LP3ES contract

1. AID to prepare SSIMP Strategy Statement and discuss/with DGWRD

FUNDING/BUDGET REQUIREMENTS FOR SSIMP NTB SURFACE WATER PROJECTS
(in million Rp)

03-Nov

PROJECT: KALIMANTONG II

ITEM	QUANT -ITY	ESTIM TOTAL COST	BUDGET ALLOC		1987/88		1988/89		1989/90		1990/91		1991/92		1992/93		1993/94		
			APBN	LOAN	APBN	LOAN	APBN	LOAN	APBN	LOAN	APBN	LOAN	APBN	LOAN	APBN	LOAN	APBN	LOAN	
S I D:																			
Site Profile		1.75	1.75	0			1.75	0											
AWLR	one	9	4.9	4.1	4.9	0	0	4.1											
Review Design		120	30	90	30	0	0	56.25	0	33.75									
Geotech/Drill		24.5	0	24.5					0	24.5									
Design Bldgs and Road	510 m2 4 km	20	0	20					0	20									
Revise Rt Bank	470 ha	20	0	20	Note 1.						0	20							
SUBTOTAL		195.25	36.65	158.6		34.9	0	1.75	60.35	0	78.25	0	20						
Land Acquisition	113 ha	225	225	0	Note 2	49	0												
CONSTRUCTION:																			
Access Road	4 km	232.62	232.62	0	Note 3.				232.62	0									
Buildings	510 m2	135.71	67.856	67.856	Note 3.				67.856	67.856									
Weir, etc	one	2881	1440.5	1440.5	Note 4.														
Left Bank Syst	962 ha	4516	2258	2258	Note 4.						391	391	1049.5	1049.5					
Right Bank Syst	1400 h	5690	2845	2845	Note 4.						582.5	582.5	1675.5	1675.5					
SUBTOTAL		13435.33	6833.9	6601.3	Note 5	0	0	0	0	290.47	57.856	1694.5	1694.5	4849	4849	0	0	0	0
Construc Services		1440	0	1440	Note 6.						0	360	0	1080					
Project Admin		672	672	0	Note 7.						134	0	533	0					

- NOTES: 1. If possible, would like to fund this activity in 1989/90 so as not to delay tendering.
2. Earlier expenditures were 45M in 1984/85 and 67M in 1986/87.
3. Cost based on current estimates by PO; no price escalation included. *Buildings include Rp. 20M for furniture.*
4. Cost based on July 1989 price level estimate done by PT GeoSurvey adjusted upward by 15% contingency. Escalation of 7% then added, and finally 10% tax added. Annual budget derived using S-curve, and assuming 15% advance payment by GOI and 15% mobilization payment by USAID on their halves. Recovery of advance payment is in Year 2.
5. Total future construction cost and construction services cost, plus land acquisition is Rp.15,100M. This compares with Mid-Term Evaluation Team report of \$8.20M (mistakenly including tax), or Rp.14,549M for same items at July 1989 constant price level.
6. Cost is 12.1% of weir plus irrigation costs (before tax), which covers approximately 30 TA and 58 LC man-months in new USAID-funded contract.
7. Cost taken as 5% of all construction costs--covers NTB PU administration costs.

PROJECT STATUS UPDATE AS OF: 31 December 1989PROJECT: Gapit DamLOCATION: NTB

RECENT ACTIVITY IN KEY AREAS:

NEXT ACTION/BY WHOM:

A. DUP/DIP -- 1. PU NTB and TA reviewed draft budget totals from SubDit Binlak (see Att. 1) in Oct 89.
2. PU NTB and TA derived detailed line items/amounts for past/future years, and sent draft to SubDit Binlak (see Att. 2) in Nov 89.

1. SubDit Binlak to review items/amounts for DUP
2. Final agreement on DUP by SubDit Binlak, PU NTB, AID/TA at Feb 90 workshop

B. PILs/REIMBURSEMENT -- 1. Funds for design activities were earmarked in PIL #40 (Sep 8, 1989)
2. GOI is prefinancing the design activities. USAID will reimburse later upon completion of the works.

1. PU NTB to prepare draft contract.

C. LC DESIGN -- 1. PT. Mettana completed feasibility/design review study and report in Aug 89.
2. Mettana proposed locations for foundation drilling
3. TA Geotech Engin. visited site in Nov; TA Geologist visited site in Dec - both met Mettana staff (memos on file)

1. PU NTB to prepare TOR for design/t.docs
contract - TA to review - invite bids

D. TENDER DOCUMENTS --

E. PREQUAL/BIDDING --

F. CONSTRUCTION --

G. PJR/CERTIFICATION -- 1. TA NTB has started drafting sections of PJR based on Mettana report and ag-econ data.
2. Preliminary EIRR of 14% was computed based on Mettana's project cost estimate and reservoir operation/cropping results.

1. PU NTB and TA to do draft PJR together

H. EAR/ENVIR APPROVAL -- 1. TA Envir. Scientists (Ames/Neame) doing study Oct-Dec. UNRAM PSL did water quality sampling/analysis in Nov, but results only partly acceptable.
2. Environmental Scoping Session held in Sumbawa Besar on 18 Dec attended by Drs. Nasri, PU NTB, AID, TA, and local agencies.

1. TA to contract to redo water quality
2. TA to complete draft EAR possibly with ST Envir.Scientist Feb-Apr

I. FARMER/AGENCY PARTIC -

J. OTHER --

- Attachments:**
1. Draft summary DUP by SubDit Binlak, Oct 89
 2. Draft detailed DUP by NTB with TA, Nov 89
 3. Gapit schedule (under preparation)

NAMA PROYEK : IRRIGASI MUSA TENGGAH BARAT
 BAGIAN PROYEK : PERBAHARUAN IRRIGASI ENJUNG RTD
 PROPINSI : MUSA TENGGAH BARAT

SSIRP USAID LOAN NO.497-T-092

Dalam Rp.10

NO.	URAIAN DETIL	SASARAN (HA)		ESTIMATE TOTAL COST (SAR)		ESTIMATE TOTAL COST (PROPOSAL)	ALOKASI DANA		KEBUTUHAN DANA PER TAHUN												REKONSTRUKSI			
		PROGRAM	REALISASI	APRN	LOAN	APRN	LOAN	1987/1988		1988/1989		1989/1990		1990/1991		1991/1992		1992/1993		1993/1994		1994/1995		
								APRN	LOAN	APRN	LOAN	APRN	LOAN	APRN	LOAN	APRN	LOAN	APRN	LOAN	APRN		LOAN	APRN	LOAN
I	ENJUNG TIDURIT	1,700.0																						
1	S.I.D.	-	-	27.5	331.2	358.7	27.5	331.2	27.5	60.0	-	70.0	-	181.2	-	-	-	-	-	-	-	-	-	-
2	Construction	-	-	7,134.0	7,134.0	14,268.0	7,134.0	7,134.0	-	-	-	-	122.1	122.1	591.3	591.3	3,567.0	3,567.0	2,853.6	2,853.6	-	-	-	-
	SUB TOTAL I	1,700.0	-	7,161.5	7,465.2	14,626.7	7,161.5	7,465.2	27.5	60.0	-	70.0	122.1	303.3	591.3	591.3	3,567.0	3,567.0	2,853.6	2,853.6	-	-	-	-
II	ENJUNG GAPIT	1,000.0																						
1	S.I.D.	-	-	-	-	-	-	306.1	-	-	-	36.6	-	269.5	-	-	-	-	-	-	-	-	-	-
2	Construction	-	-	4,825.0	4,825.0	9,650.0	4,825.0	4,825.0	-	-	-	-	-	-	1,085.0	1,085.0	2,337.5	2,337.5	1,402.5	1,402.5	-	-	-	-
	SUB TOTAL II	1,000.0	-	4,825.0	4,825.0	9,650.0	4,825.0	5,131.1	-	-	-	36.6	-	269.5	1,085.0	1,085.0	2,337.5	2,337.5	1,402.5	1,402.5	-	-	-	-
III	ENJUNG RTD	2,800.0																						
1	S.I.D.	-	-	30.0	135.0	165.0	30.0	135.0	30.0	90.0	-	-	-	45.0	-	-	-	-	-	-	-	-	-	-
2	Construction	-	-	5,849.0	5,849.0	11,698.0	5,849.0	5,849.0	-	-	-	-	95.3	95.3	2,444.6	2,444.6	3,309.0	3,309.0	-	-	-	-	-	-
	SUB TOTAL III	2,800.0	-	5,879.0	5,984.0	11,863.0	5,879.0	5,984.0	30.0	90.0	-	-	95.3	140.3	2,444.6	2,444.6	3,309.0	3,309.0	-	-	-	-	-	-
	TOTAL	5,500.0	-	17,865.5	18,274.2	36,489.7	17,865.5	18,500.3	57.5	170.0	-	106.6	217.4	713.1	4,120.9	4,120.9	9,213.5	9,213.5	4,756.1	4,756.1	-	-	-	-

444

FUNDING/BUDGET REQUIREMENTS FOR SSIMP NTB SURFACE WATER PROJECTS
(in billion Rp)

01-Nov

PROJECT: GAPIT

ITEM	QUANT -ITY	ESTIM TOTAL COST	BUDGET ALLOC		1987/88		1988/89		1989/90		1990/91		1991/92		1992/93		1993/94	
			APBN	LOAN	APBN	LOAN	APBN	LOAN	APBN	LOAN	APBN	LOAN	APBN	LOAN	APBN	LOAN	APBN	LOAN
S I D:																		
Site Profile		(included	in Tiu Kulit)															
AWLR	one	8.2	4.473	3.727	Note 1.													
Prelim Design		35.176	0	35.176			0	35.176										
Review Design		169	0	169					0	169								
Topo Mapping		40	0	40					0	40								
Geotech/Drill		60	0	60					0	60								
Irrig Design		149	0	149					0	149								
SUBTOTAL		461.376	4.473	456.90		0	0	0	35.176	0	418							
Land Aquisition	30 ha	150	150	0							150	0						
CONSTRUCTION:																		
Access Road	3 km	238	119	119	Note 2.							119	119					
Buildings		120	60	60	Note 2.							60	60					
Dam/Appurten	one	8280	4140	4140	Note 2.							1186	1186	2202	2202	752	752	
Irrig System	1300 ha	3816	1908	1908	Note 2.							0	0	945	945	963	963	
SUBTOTAL		12454	6227	6227	Note 3.							1365	1365	3147	3147	1715	1715	
Construc Services		1572	0	1572	Note 4.							0	308	0	818	0	446	
Project Admin		623	623	0	Note 5.							137	0	315	0	171	0	

NOTES: 1. Originally budgeted in 1986/87.

2. Cost based on January 1989 price level estimate done by PT Nattana in their Sept 1989 Preliminary Review Design report. Costs escalated 15.3% for road and buildings, and 23.9% for dam and irrigation works, then 10% tax added. Annual budget derived using S-curve, and assuming 15% advance payment by GOI and 15% mobilization payment by USAID on their halves. Advance recovery in Years 2 and 3.

3. Total future construction cost and construction services cost, plus land acquisition is Rp.11,320M before taxes. This compares with Mid-Term Evaluation Team report of \$6.30M, or Rp.11,180M for same items at July 1989 constant price level.

4. Cost is 14.3% of dam plus irrigation costs (before tax), which covers approximately 33 YA and 63 LC man-months in new USAID-funded contract.

5. Cost taken as 5% of all construction costs--covers NTB PU administration costs.

PROJECT STATUS UPDATE AS OF: 31 December 1989PROJECT: Batujai Kiri ExtensionLOCATION: NTB

RECENT ACTIVITY IN KEY AREAS:

NEXT ACTION/BY WHOM:

- A. DUP/DIP -- 1. PU NTB and TA received draft budget totals from SubDit Binlak (see Att. 1) in Oct 89.
2. TA estimated const. costs by escalating previous PU NTB figures, sent to SubDit Binlak (Att.2) in Nov 89.
3. PU NTB re-estimated const., design, etc. costs and schedule 11 Dec (Att. 3) and sent to TA and SubDit Binlak.
1. SubDit Binlak to review items/amounts for DUP
2. Final agreement on DUP by SubDit Binlak, PU NTB, AID/TA at February Workshop.
- B. PILs/REIMBURSEMENT -- 1. Fund for design review was earmarked in PIL #31 (June 23, 1988).
2. GOI prefinances the design review and USAID will reimburse later upon completion of the work.
1. PU NTB to prepare the TOR
- C. LC DESIGN -- 1. TA Hydrologist Elmore prepared report on water availability in Nov 89 concluding only enough reservoir water for Batujai Kiri (not enough for Surabaya area).
2. TA 27 Nov letter reviewed project tech, social, enviro, econ feasibility. TA recommends go straight to LC design.
3. AID 12 Jan letter asks PU NTB/TA to proceed with TOR for LC design of Batujai Kiri (not Surabaya).
1. PU NTB to prepare TOR for LC design/t.docs contract - TA to review - invite bids
- D. TENDER DOCUMENTS --
- E. PREQUAL/BIDDING --
- F. CONSTRUCTION --
- G. PJR/CERTIFICATION -- 1. TA NTB has started drafting sections of PJR based on preliminary ag-econ data and hydrology review.
2. Preliminary EIRR of 18% was presented in TA 27 Nov letter using conservative project cost of Rp. 5,070 million (July 89 level).
1. PU NTB and TA to do draft PJR together.
- H. EAR/ENVIR APPROVAL -- 1. TA Envir. Scientists (Ames/Neame) doing study Oct-Dec. CV. Tripod did water quality sampling/analysis in Dec.
2. Environmental Scoping Session held in Praya, Lombok on 20 Dec attended by Drs. Nasri, PU NTB, AID, TA, and local agencies.
1. TA to complete draft EAR possibly with ST Envir.Scientist Feb-Apr.

I. FARMER/AGENCY PARTIC --

J. OTHER --

- Attachments:
1. Draft summary DUP by SubDit Binlak, Oct 89
 2. Draft detailed DUP by NTB with TA, Nov 89
 3. Revised cost estimate and DUP by PU NTB, Dec 89
 4. Batujai schedule (under preparation)

NAMA PROYEK : IRIGASI LOMBOK SELATAN SUMBARA
 PACTAN PROYEK : IRIGASI LOMBOK SELATAN
 PROPINSI : RUSA TENGGARA BARAT

SSINP USAID LOAN NO. 497-T-092

Dalam Rp.10⁶

NO.	URAIAN KEGIATAN	SASARAN (HA)		ESTIMATE TOTAL COST/ESTIMATE TOTAL COST (PROPOSAL)		ALOKASI DANA		KEBUTUHAN DANA PER TAHUN												KETERANGAN					
		PROGRAM	REALISASI	APBN	LOAN	APBN	LOAN	1987/1988		1988/1989		1989/1990		1990/1991		1991/1992		1992/1993			1993/1994		1994/1995		
								APBN	LOAN	APBN	LOAN	APBN	LOAN	APBN	LOAN	APBN	LOAN	APBN	LOAN		APBN	LOAN	APBN	LOAN	
I.	BATUJAI KIRI ✓																								
1	Tanah	-	-	170.0	-	170.0	170.0	-	-	-	-	-	-	170.0	-	-	-	-	-	-	-	-	-	-	
2	S.I.D.	-	-	-	350.0	350.0	-	350.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	Construction	972.0	-	1,985.0	1,985.0	3,980.0	1,985.0	1,985.0	-	-	-	100.0	-	250.0	-	-	-	-	-	-	-	-	-	-	
	SUB TOTAL I	972.0	-	2,155.0	2,335.0	4,500.0	2,155.0	2,335.0	-	-	-	100.0	170.0	250.0	492.5	492.5	500.0	500.0	-	-	-	-	-	-	
II	SUMBARAYA																								
1	Tanah	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	S.I.D.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	Construction of Pumping	2,800.0	-	-	-	-	-	-	-	-	-	-	-	-	300.0	300.0	-	-	-	-	-	-	-	-	
	SUB TOTAL II	2,800.0	-	-	-	-	-	-	-	-	-	-	-	-	300.0	300.0	-	-	-	-	-	-	-	-	
	TOTAL	3,772.0	-	2,155.0	2,335.0	4,500.0	2,155.0	2,335.0	-	-	-	100.0	170.0	250.0	792.5	792.5	500.0	500.0	-	-	-	-	-	-	

Att. 1

FUNDING/BUDGET REQUIREMENTS FOR SSIMP NTB SURFACE WATER PROJECTS
(in million Rp)

file DIF
28-Oct

PROJECT: BATUJAI KIRI

ITEM	QUANT -ITY	ESTIM TOTAL COST	BUDGET ALLOC		1987/88		1988/89		1989/90		1990/91		1991/92		1992/93		1993/94		NOTES	
			APEN	LOAN	APEN	LOAN	APEN	LOAN	APEN	LOAN	APEN	LOAN	APEN	LOAN	APEN	LOAN	APEN	LOAN		
S I D:																				
Site Profile																				
AMLR																				
Review Design																				
Topo Mapping																				
SUBTOTAL		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Land Aquisition		115									115	0								
CONSTRUCTION:																				
Buildings		??																		
Main/Sec system		4934	2467	2467																
Tertiary system 972 ha		532	266	266									1222.5	1222.5	1244.5	1244.5				Escal from Jul89 1.15
SUBTOTAL		5466	2733	2733	0	0	0	0	0	0	0	0	1331.5	1331.5	1401.5	1401.5	0	0		
Construc Services		440	0	440									0	220	0	220				
Project Admin		270	270	0									135	0	135	0				
																				88 irrig 167A/311LC 1 58 irrig

Estimate Pekerjaan Batujai Kiri1. Pekerjaan Saluran.

1.1. Galian tanah		
- Rock 1.398 m ³ @ Rp. 9.755,55	Rp.	13.638.258,90
- Biasa 27.465 m ³ @ Rp. 3.908,85	Rp.	107.356.565,20
1.2. Timbunan.		
- Dari tanah sekitar 29.100 m ³ @ Rp. 1.002,- ...	Rp.	29.132.010,-
(panjang 50 m)		
- Dari tanah Borrowpit 8.308 m ³ @ Rp. 4.447,80 ..	Rp.	36.952.322,40
1.3. Block beton (Concrete blok lining).		
7 cm thickness 55.512 m ² @ Rp. 16.885,33	Rp.	937.338.439,-
1.4. Siar 55.512 m ² @ Rp. 1.200,-	Rp.	66.614.400,-
1.5. Gebal rumput 59.902 m ² @ Rp. 668,25	Rp.	40.029.511,50
1.6. Jalan masuk 7 km lebar 4 m', terdiri dari 28.000 m ² :		
- Sub base coarse 28.000 m ² @ Rp. 840,40	Rp.	23.531.200,-
- Base Coarse 28.000 m ² @ Rp. 2.319,90	Rp.	64.957.200,-
Sub total 1.	Rp.	1.319.549.907,-

2. Pekerjaan Bangunan.

2.1. Gorong-gorong 6 x Rp. 5.000.000,-	Rp.	30.000.000,-
2.2. Bagi / Sadap 10 x Rp. 7.000.000,-	Rp.	70.000.000,-
2.3. Jembatan hewan 8 x Rp. 3.000.000,-	Rp.	24.000.000,-
2.4. Tempat cuci 10 x Rp. 1.000.000,-	Rp.	10.000.000,-
2.5. Talang besar + Jembatan Jr	Rp.	650.000.000,-
2.6. Talang kecil	Rp.	75.000.000,-
2.7. Rumah jaga 2 buah @ Rp. 10.000.000,-	Rp.	20.000.000,-
2.8. Patok km/km Ls	Rp.	5.000.000,-
Sub total 2.	Rp.	884.000.000,-

3. Jalan Inspeksi 13 Km lebar 3 m' harga/m ² Rp. 3.160,30 ...	Rp.	123.251.700,-
4. Solokan pengaman 15 Km @ Rp. 5.000,-/m'	Rp.	75.000.000,-
5. Modifikasi saluran Batujai hulu 3,5 Km	Rp.	525.000.000,-

T o t a l ; 1 + 2 + 3 + 4 + 5

Pengembangan tersier 976 ha x Rp. 350.000,-/ha

T o t a l

Ditambah pajak 10% menjadi

Eskalasi menjadi

Review Detail Design Batujai

Land Aquisition 15 ha

Administrasi

Counsultan Supervisi

Total biaya

PROJECT STATUS UPDATE AS OF: 31 January 1990PROJECT: Awo WeirLOCATION: SULSEL

RECENT ACTIVITY IN KEY AREAS:

NEXT ACTION/BY WHOM:

A. DUP/DIP -- 1. PU SulSel requested to DOI/USAID to reassign excess Raja-Telaga funds from 1989-90 to Awo Design in Sep 89.

1. Final agreement on DUP by SubDit Binlak, PU SulSel, AID/TA at Feb 90 Workshop.

2. Draft 90-91 DUP for SulSel prepared by PU with TA advice in Oct 89.

3. Long-terming funding/budget requirements updated by PU/TA, provided to Bambang Waluyono on 31 October.

B. PILs/REIMBURSEMENT --

C. LC DESIGN -- 1. PT. GeoACE contract for geotech investigations, surveys, review design completed in Mid-1989. Incorrect geotech. data later discovered in final report has now being corrected and final report resubmitted.

1. Approval of Contract Amendment/Extension is urgently needed.
2. Tertiary block design (with farmer involvement) will be later. Urgently need WUAOs if this is to be successful.
3. Changes resulting from weir model test will be incorporated later in design.

2. PT. Dacrea design contract is well along. 800 ha extension area mapped, other survey work essentially complete, including roads and tertiary canals. Design of roads, canals, and structures including revisions to incorporate provision for 2200 ha extension area is well along. Finalizing weir design & Awo bridge awaits geotech data. Some urgently needed work is delayed pending approval of contract amendment/extension in Jakarta. Probable draft design completion dates: LCB work (roads, buildings), March 90; ICB (weir and irrigation system), April 90.

D. TENDER DOCUMENTS -- 1. PT. Dacrea will prepare documents using Kalimantanong II as guide.

1. LCB package ready for review in March 90.
2. ICB package ready for review in April 90.

E. PREQUAL/BIDDING -- 1. Prequal announced Mar-Apr 89 for K2, TK and Awo.
2. Receipt/evaluation/approved list for weir, left, right contracts (ICB) by DG letter to PU SulSel dated 24 Nov.

1. DG to send approved ICB list to AID (17 Jan)
2. SubDit Binlak and AID to agree final ICB list

F. CONSTRUCTION --

G. PJR/CERTIFICATION -- 1. Draft being prepared by PU/TA, to be completed in March 90

1. PU/TA to complete PJR.

H. EAR/ENVIR APPROVAL -- 1. Draft being prepared by TA, to be completed in March 90. New water quality data has been collected, added to report.

1. TA to complete EA Report.

I. FARMER/AGENCY PARTIC --

J. OTHER --

PROJECT STATUS UPDATE AS OF: 31 January 1990PROJECT: SalomekkoLOCATION: SULSEL

RECENT ACTIVITY IN KEY AREAS:

NEXT ACTION/BY WHOM:

A. DUP/DIP -- 1. Draft 90-91 DUP for SulSel prepared by PU with TA advice. Long-term funding/budget requirements updated by PU/TA, provided to Bambang Waluyono on 31 October.

B. PILs/REIMBURSEMENT --

C. LC DESIGN -- 1. Severe problems continue with the performance of PT. Airstan Ekawasta, consultant for surveys, mapping and preliminary design. Surveys and maps are improved over earlier work, but not yet accepted. Layout and design work is hampered by lack of a full-time staff (Airstan is now apparently using only moonlighting people from other consultants and local universities). Staff members who started the project no longer work for Airstan.

1. A decision on how to wrap up Airstan's contract must be made by PU.
2. PU/TA must complete studies, PJR, EA.
3. PU/TA must prepare Final Design TOR. Include aerial mapping.
4. If users are to be involved in project design, WUAOs must be mobilized for work at Salomekko immediately.

2. Geotechnical field work under Indec & Associates' contract (core boring and digging test pits) was completed in about July 1989. However, major problems with lab testing and presentation of results have delayed completion of the work. New samples have been obtained from the field and extensive retesting is almost complete. Completion will probably be in February.

3. PU and the TA Team have decided to complete the work needed for EA and PJR with their own resources, so the project can move ahead. Hydrology revisions are almost complete. New TA Team engineer Harry Clark will coordinate work on Salomekko. Target completion date for PJR is now late March.

4. Tendering for a final design consultant has been delayed until better definition of the project is available. TOR will be complete in March if possible.

5. TA recommends obtaining new aerial photos and photogrammetric maps for use in final design, since there is little confidence in Airstan's maps, recent maps with all field boundaries are preferred for final design (especially of tertiary blocks), and the topography is very uneven which makes ground survey difficult.

D. TENDER DOCUMENTS -- 1. Tender document will be included in the design consultant's responsibilities. Draft documents, based on Tiu Kulit, should be completed by March 1990.

E. PREQUAL/BIDDING -- 1. Process has not been started.

F. CONSTRUCTION --

G. PJR/CERTIFICATION -- 1. Draft being prepared by PU/TA, but non-performance by Airstan leaves many gaps. Completion of a draft by late March 1990 now seems possible.

1. TA/PU (Province) to prepare draft without Airstan.

H. EAR/ENVIR APPROVAL -- 1. Draft being prepared by TA, and could be ready during March 1990.

1. TA to complete draft based on TA/PU studies.

I. FARMER/AGENCY PARTIC -- 1. Salomekko is included in initial WUAO contract scope

1. PU (Jakarta) finalize contract for WUAOs.

J. OTHER --

PROJECT STATUS UPDATE AS OF: 31 January 1990PROJECT: Ponre-PonreLOCATION: SULSEL

RECENT ACTIVITY IN KEY AREAS: ;

NEXT ACTION/BY WHOM:

A. DUP/DIP -- 1. Long-term funding/budget requirements were updated by PU/TA and provided to Bambang Waluyono on 31 October.

1. Jakarta support for 1990 construction of PU mess at the site, for use during project planning and design, is needed.

B. PILs/REIMBURSEMENT --

1. Contracting for final design should begin early 1990, with the consultant starting work by June 1990. Completion of design is schedule for June 1991. Additional geotech work, surveying, and mapping will be needed.
2. Aerial mapping should be considered.

C. LC DESIGN -- 1. Surveying, mapping, and geotech work were contracted to Parimac and Associates, who started about June 1989.
2. Map status: essentially complete. Three core borings poorly done at dam site I, four done better at dam site II. TA geologist from Chicago advising on improvements in drilling and on geologic mapping and interpretation. Dam site II selected as best. Testpits not started. Estimated completion, March 1990.
3. Land capability evaluation and preliminary design is contracted to Indec & Associates, who started June 1989. Hydrology and land capability studies are well along. Dam design ready to begin. System design was awaiting land capability studies and determination of available water supply. Estimated completion, April 1990.

D. TENDER DOCUMENTS -- 1. Documents will be prepared by the final design consultant using Tiu Kulit and Salomekko as guides. Ready for review June 1991.

E. PREQUAL/BIDDING -- 1. Process has not been started.

F. CONSTRUCTION -- 1. Scheduled for late 1992 through early 1995.

G. PJR/CERTIFICATION -- 1. Not yet started. Draft will be completed during January through April 1990 by PU/TA

H. EAR/ENVIR APPROVAL -- 1. Data collection (over and above RRIA and HHS socio-economic data) began during October. Draft preparation will begin in November, and should be complete about March 1990.

13

I. FARMER/AGENCY PARTIC --

J. OTHER --

PROJECT STATUS UPDATE AS OF: 31 January 1990PROJECT: Selli-CoppobuluLOCATION: SulSel

RECENT ACTIVITY IN KEY AREAS:

NEXT ACTION/BY WHOM:

A. DUP/DIP -- 1. Long-term funding/budget amounts and schedules updated by PU/TA, assuming a feasible dam/irrigation system project is identified. Provided to PU Jakarta.

B. PILS/REIMBURSEMENT -- 1.

C. LC DESIGN -- 1. Surveying, mapping, geotech work is contracted to PT Seecons. Surveying, mapping done well, all essentially finished except for map of 2nd Selli damsite. Field drilling poorly done using poor equipment provided by PU. Borrow areas sampled and tested (good results) by lab in Bandung. Sampling along canal alignments delayed until extent of system is determined.

2. Substantial assistance/advice by TA geologists, especially in Nov/Dec.

3. Coppobulu and original Selli dam sites found not feasible. Second Selli dam site under investigation.

4. Land capability evaluation and preliminary design contracted to PT Jasa Mitra. Still no work done on land capability. Hydrology being finalized with TA/PU. Pre design of dam (site 2) and system will begin soon. Estimated completion, late April.

D. TENDER DOCUMENTS -- 1. Documents will be prepared by final design consultant. Probably mid 1990 - mid 1991.

E. PREQUAL/BIDDING -- 1. Process not started.

F. CONSTRUCTION -- 1. Scheduled for mid 1992 to mid 1994.

G. PJR/CERTIFICATION -- 1. Draft barely started. Completion by PU/TA about April 1990.

H. EAR/ENVIR APPROVAL -- 1. Data collection and report preparation started by TA.

2. Awaiting results of engineering completion by about April 1990.

1. Jasa Mitra/TA/PU complete hydrology.
2. Seecons complete drilling, mapping for dam site 2.

3. Determine irrigable area, select lands including existing irrigation area.

4. Proceed with design quantity, and const estimates.

5. If a feasible project is identified, proceed with design TOR.

1. PU/TA to proceed with draft PJR, as data becomes available.

1. TA to proceed as engineering results become available.

I. FARMER/AGENCY PARTIC --

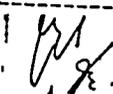
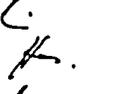
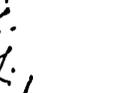
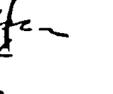
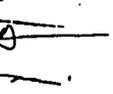
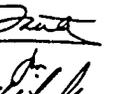
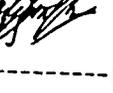
J. OTHER --

APPENDIXES

DISCUSSION OF THE ENVIRONMENTAL PROBLEMS
OF IRRIGATION EMBUNG - GAPIT PROJECT

LIST OF ATTENDANTS

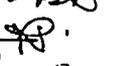
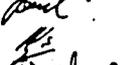
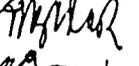
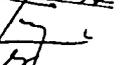
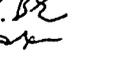
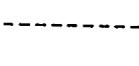
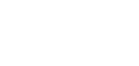
Date : December 18, 1989

NO.	N A M E	POSITION/ORGANIZATION	SIGNATURE
1.	Yamin	Land Tax/Construction	
2.	Darimi	Sec. Head of Plantation	
3.	Ilham	Land (Agraria)	
4.	Sri Sudady	Sec. Head of Livestock	
5.	Umar Yunus	Regency Income	
6.	Ibrahim Rayes	Parliament Member	
7.	Soeratmin	Parliament Member	
8.	M. Soewaji	Chief of PU. Regency	
9.	A.Muis Mustaram	Health Dept. (Regency)	
10.	Thamin Raye	Bappeda	
11.	Burhanuddin	Forestry Dept. (Regency)	
12.	Ahmady	Bappeda (Regency)	
13.	Abdul Gaffur	Agriculture Dept. (Regen.)	
14.	Perbata Nurdin	Bupati Staff	
15.	M. Ali AR.	Staff PU. West Sumbawa	
16.	Djalaludin R.	Chief PU East Sumbawa	
17.	Mustakim Minggu	Cipta Karya Staff	
18.	Caco Yusuf	Chief of Village Boal	
19.	Soemarto	Village Construction	
20.	Yusuf	Fisheries	
21.	Peter L. Ames	SSIMP TA Team	
22.	Ch. Nasri	DOI - Jakarta	
23.	Gde Sudantha	Chief of Embung Project	
24.	Gunawan Widjaja	USAID / Jakarta	
25.	Wahyu Djoko M.	Staff PU - NTB	
26.	Schoenleber	SSIMP TA Team	

DISCUSSION OF THE ENVIRONMENTAL PROBLEMS
OF BATUJAI-SURABAYA IRRIGATION PROJECT

LIST OF ATTENDANTS

Date : December 20, 1989

NO.	N A M E	POSITION/ORGANIZATION	SIGNATURE
1.	Ch. Nasri	DOI - Bina / Jakarta	
2.	Masnun	Sub. Dir. Irrig. - NTB.	
3.	Wahyu Djoko M	Staff PU - NTB	
4.	Peter L. Ames	Harza Engineering Co	
5.	Anas Mal	Chief PU. Central Lombok	
6.	L. Puri	Bappeda Central Lombok	
7.	I Putu Tusta	Regency Income (C.Lombok)	
8.	H. L. Mathur	Chief District West Praya	
9.	L. Bukran	Chief District Praya	
10.	Suparlan	Sec. Head Development	
11.	Nyoman Suartha	Land (Agraria)	
12.	G. Md. Parinda	Health Dept. Cent.Lombok	
13.	Subhan	Agriculture Cent. Lombok	
14.	Pri Puguh S.	Sec. Head of Forestry	
15.	Sunardi	Sec. Head of Fisheries	
16.	L. Sukardha	Sec. Head of Plantation	
17.	Shahabuddin S	Sec. Head of Livestock	
18.	I Made Praya	Bupati Staff	
19.	L. Tayang	Village Construction	
20.	H. Ramli	Staff PU Central Lombok	
21.	Suwija	Lombok Sumbawa Irr. Proj.	
22.	Surana	PILSS - NTB	
23.	Gunawan Widjaja	USAID - Jakarta	
24.	Schoenleber	TA Harza	
25.	R. Erickson	TA Harza	
26.	Pudji Hastowo	PILSS - NTB	

PONRE-PONRE AND SELLI-COPPOBULU IRRIGATION PROJECTS
KABUPATEN BONE, SULAWESI SELATAN

SUMMARY OF ENVIRONMENTAL SCOPING SESSION DISCUSSION
PONRE-PONRE AND SELLI-COPPOBULU IRRIGATION PROJECTS

WATAMPONE

9 DECEMBER 1989

SMALL SCALE IRRIGATION MANAGEMENT PROJECT
DIRECTORATE GENERAL OF IRRIGATION
DEPARTMENT OF PUBLIC WORKS, INDONESIA

AND

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT (USAID)

SUMMARY OF DISCUSSION
ENVIRONMENTAL SCOPING SESSION

PONRE-PONRE AND SELLI-COPPOBULU IRRIGATION PROJECTS

Date : 9 December 1989

Place : Ruang Pola Kantor Bupati Tkt.II Bone

Program : Environmental Scoping Session for the Ponre-Ponre and Selli-Coppobulu Irrigation Projects.

Attendance : Involved Departments, Governments of Bone District, Local officials from both of the project areas (Attendance list attached).

The proceedings were started at 9.35 by the Master of Ceremonies, Drs. Abd. Wahab, who reviewed the program for the meeting.

The Bupati was not present, but was represented by the Secretary (Sekwilda) of Kab. Bone, Drs. H.B. Paturungi. In his speech he explained the importance of the environment in carrying out development, so that future generations will not suffer. He instructed all of the involved departments, chiefs of sub-districts, village chiefs and society leaders to take care of the environment and he suggested that they be active in joining the discussion and giving information. After reading the welcoming speech he left to chair another meeting.

The Master of Ceremonies then handed over the program to the chairman (Ir. Soeprapto Budisantoso MSc). The chairman then introduced the project team from Ujung Pandang:

1. Dr. Peter Ames, Senior Environmental Scientist, Harza Engineering Consultants, Chicago.
2. Noel Corcoran, PE, Irrigation Scientist, Harza Engineering Consultants, Chicago.
3. Ir. Gunawan Widjaja, USA Embassy staff, Jakarta.
4. Drs. Abd. Wahab M.Th., Socio-economic Scientist, Kanwil PU Sul-Sel.
5. Ir. Karel Paranoan, Predesign supervisor for SSIMP South Sulawesi, PU Sul-Sel.
6. Dr. Peter Neame, Environmental Scientist, Harza Engineering Consultants.
7. Dr. Alfian Noer, MSc., Environmental Expert of the Environmental Study Center, UNHAS.

8. Staff of P.T. Jasa Mitra and P.T. Indec as Contractor consultants (Preparation of survey data and design for the Ponre-Ponre and Selli-Coppobulu irrigation projects).
9. Dra. Syamsiah Ras, staff of Secretariat.

The chairman invited Dr. Peter Ames to explain the purpose and objectives of the environmental scoping session. Dr. Ames explained in English the purpose of the environmental assessment and also the purpose of the discussion of environmental impacts. This explanation was translated into Indonesian by the chairman.

The chairman invited Ir. Gunawan Widjaja, the representative of USAID, to comment on environmental concerns. Ir. Gunawan explained the legal base of the environmental analysis and detailed the procedure for environmental assessment for a project under a USAID loan. He also explained the rules and process of environmental assessment for projects and the legal basis of the process of environmental analysis of the GOI. In concluding, he said that Environmental Scoping Session was an activity to find information. For the Indonesian government, the environmental assessment is part of the Environmental Information Presentation (PIL) process.

The chairman next invited Mr. Noel Corcoran to discuss the status of project planning. This was explained by Mr. Corcoran in English and then translated by Ir. Soeprapto into Indonesian. Mr. Corcoran first reviewed the general nature of the Ponre-Ponre project and then the Selli-Coppobulu project development.

Before starting the discussion of these two projects, the chairman asked all of those in attendance to pay close attention to the table of possible relationships between project activities and the environmental components. The chairman explained how to use the table in identifying impacts. He also translated and explained the table in Indonesian. The chairman (Ir. Soeprapto) then handed the program over to Ir. M. Rusli of BAPPEDA Tk. II, Bone to chair the discussion.

Ir. M. Rusli started the discussion and noted that in general neither of these projects will meet major obstacles in their construction. From the beginning the government has informed the farmers about the projects and no problems or objections have arisen. However, some negative impacts of project construction are still anticipated. The negative impacts such as the disturbance of graveyards by canal construction should be identified as early as possible.

Ir. M. Rusli opened the discussion by asking those in attendance for questions and comments. Questions came from the following persons:

1. Mr. Memet Surya S. of Land and Soil Conservation Dept., Kab

Bone. Mr. Memet mentioned a plan by the land and soil conservation department to reforest approximately 30,000 ha. This area will cover Desa Tompobulu, Desa Tappale and Desa Langi, for the period of 89-94 (5 years). Mr. Memet wanted to know the boundaries of the Ponre-Ponre project to compare with the designated forest location. He also asked whether the project will include soil conservation activities.

2. Mr. Ismail Tahir, secretary of Kec. Libureng.

Mr. Ismail informed the meeting that most of his people use river water for daily use (drinking, washing etc). If a dam will be constructed on the Tinco River, there will be little or no flow downstream. He asked whether the project has taken this into account after the construction of the project.

After hearing the above questions, the project team discussed them for a few minutes and then Ir. Soeprapto, representing the team, replied to the points raised.

Ir. Soeprapto said that the exact boundaries of the project area were still not known, because the study of the project was still in process. The project can, however, provide approximate boundaries as shown on the maps available at the meeting. The project acknowledges the need to take into account the water requirements of the people in the downstream areas after the construction of the dam on the Tinco River. In addition, Ir. Gunawan Widjaja said that the point raised by Mr. Ismail had been identified by the project. Solutions to the anticipated problems will be included in the plans for addressing the environmental impacts, which are included in the environmental evaluation process.

The chairman opened the second stage of the discussion by offering more time to those in attendance for more questions. Five additional points were raised:

1. Mr. Abdullah M. of Kab. Bone Information Dept.

He explained that giving information to the people is very important if we want this project to succeed. He emphasized three things that must be taken into account. First, it is important to provide broad information about the project planning to the farmers. Second, it is important to take into account the needs of people who will have to be relocated due to project construction. Third, he questioned the land acquisition process and compensation for any buildings which will be affected by the project.

2. Andi Abdul Jabbar, Chief of Desa Tappale, Kec. Libureng

He reviewed for the meeting the progress of the Ponre-Ponre

Irrigation construction at the spring, carried out by the Integrated Sanrego Area Project. He informed the meeting that some bridges have been built and also some village roads repaired. He suggested that the supervision of construction for this project be upgraded. He also proposed to the project that it build some bridges and repair the existing village roads. He also mentioned that the canal to Desa Bune will cross two small streams which have water throughout the year. As some of the service area is steep, he asked whether the project could help in reshaping the land to make new sawah. He also noted that most of the housing locations are in upland areas.

3. Andi Achmad, Chief of Desa Bune, Kec. Libureng

He provided further information about the presence of the Integrated Sanrego Project, which according to him has contributed much to the development of Desa Bune. He said that Desa Bune used to be very remote, with economic development very slow due to difficulties in transportation. The desa could not be reached by vehicle in the wet season. The presence of the Integrated Sanrego Project was very helpful because it built some bridges and made village roads. He said that the land purchased by the Camming Sugar Factory in desa Bune would not affect the Ponre-Ponre project because all of these lands are in upland areas. He also asked about land acquisition and compensation for buildings affected by the project.

1. Abd. Rahman, Secretary of Desa Selli, Kec. Lappariaja

He informed the meeting that at present there is a weir and other minor structures on the river in Desa Selli, constructed by the village. This weir allowed farmers to grow two crops a year. He asked whether this weir will still be used after the construction of the Selli-Coppobulu dam.

5. Abd Rahim, Chief of Religion Dept Office, Kab. Bone

He informed the meeting that most of the people in the project area are Moslem, so there are many mosques there. He asked, if possible, that the project avoid affecting any mosques, or rebuild the mosques in other places.

After hearing all of these questions and comments, the chairman made a brief response and then asked Ir. Soeprato to answer the questions.

Ir. Soeprapto, representing the team, said that only one answer will be given to all similar questions.

Ir. Soeprapto said that the project will provide broad information to the government and the village people about the

project. Detailed answers, however, can not be given now because the project is still in the predesign stage. The project can provide more detailed information later after the project has collected basic data and done the detailed design work. The project will ask the government of Kab. Bone or the village chief to prepare notices for all the people. The project will discuss with water users about the nature of the project and its possible effects. Ir. Soeprapto also said that there may be about 30 houses that have to be removed because they are in the reservoir area. Land acquisition and compensation for buildings, trees etc will be done based on prices estimated by the Land Acquisition Committee. Compensation will be made for any buildings that will be affected by the main canal but not for tertiary canals. The project will also upgrade/repair the village roads and other important buildings. The weir at desa Selli will still be used or will be combined with the new dam. Finally, Ir. Soeprapto thanked all the participants for the information provided. He said this information will be very useful in the project design.

The meeting paused for half an hour for lunch and resumed at 12.35, chaired by Ir. Rusli. He said that there had been many inputs and information received, but offered more time to the audience to raise other issues. This time was used by the following 3 persons to ask further questions.

1. M. Issak of Dept Agriculture for Food Crops, Kab. Bone.

He provided a general description of the Ponre-Ponre project area. He noted that crops that could grow well in the project area are included rice, maize, soybean and peanuts. In general, he said, the cropping intensity is about 115% and if the project could run well the cropping intensity could go up to 175%. He suggested the the water users be organized to arrange water distribution after project construction.

2. Representative of Agraria, Kab. Bone.

He noted that there is a military training center for Kodam VII Wirabuana in the Ponre-Ponre vicinity, so it is important to know the boundaries of the project area.

3. Mr. Andi Rajab Ibrahim, Desa Development Office, Kab. Bone.

He noted that his department has provided housing for some families and has dug some wells for them. He hoped these wells will not be affected by construction of the project.

Ir. Soeprapto, after holding a brief discussion with the project team, explained that the project will carry out a land suitability evaluation study, and that crop pattern and crop intensity will be decided based on the study and the study of water availability. With regard to the water users, the project will discuss with them whether the plan made by the project is

agreeable. It is also expected to form water user associations at the tertiary levels, so that water distribution and the maintenance of the tertiary canals can be done by the farmers themselves. It was also added by Ir. Gunawan Widjaja that water user associations will be formed at the desa level to organize farmers' involvement in the process of planning and production.

With regard to the military training base, it was answered that the area in question is outside of the project boundary. Concerning the relocation of inhabitants, it is estimated that there will be about 200 persons (35 households) involved. Also, concerning the wells that the questioner said may be disturbed, a study of water distribution is currently being done by the project to address this issue.

Mr. H. Rahim Abdullah, head of Sub-Irrigation Dept. Area II, Kab. Bone noted that the area of Camming Sugar Factory is about 9,000 ha, and only 40 ha of that is in the project area, located at Desa Bune in the upland, so these areas will have no affect on the project. He added that at the government coordination meeting for Kab. Bone, the Bupati emphasized that the project should upgrade/repair the desa and kecamatan roads. He also stated that there are 240 water user associations in Kab. Bone, and that some of them are in the Ponre-Ponre Irrigation area.

After providing a final opportunity for questions, the chairman thanked those in attendance for their attention and participation in the meeting. The chairman closed the meeting at 13.45 by saying Alhamdulillah.

Ujung Pandang, 9 December 1989

Coordinator,

(Drs. Abdul Wahab)

NIP 110021189

See Appendix D for figures
accompanying this Summary

DEPARTEMEN PEKERJAAN UMUM
DIREKTORAT JENDERAL PENGAIRAN
KANTOR WILAYAH DEPARTEMEN PEKERJAAN UMUM PROPINSI
SULAWESI SELATAN
PROYEK IRIGASI SULAWESI SELATAN

RINGKASAN PEMBAHASAN BIDANG LINGKUNGAN
(ENVIRONMENTAL SCOPING SESSION)
PROYEK IRIGASI PONRE-PONRE DAN PROYEK IRIGASI SELLI-COPPOBULU

Watampone

9 Desember 1989

BAGIAN PROYEK PEMBANGUNAN JARINGAN IRIGASI SKALA KECIL

(S S I M P)

DAN

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

(U S A I D)

DAFTAR ISI

- Ringkasan pembahasan bidang lingkungan Proyek Irigasi Ponre - Ponre dan Proyek Irigasi Selli-Coppobulu.
- Penjelasan singkat tentang pembahasan bidang lingkungan Proyek Irigasi Ponre-Ponre dan Proyek Irigasi Selli-Coppobulu.
- Undangan mengikuti pembahasan dampak lingkungan Proyek Irigasi Ponre-Ponre dan Proyek Irigasi Selli-Coppobulu.
- Daftar susunan acara
- Daftar hadir peserta
- Matrix hubungan antara kegiatan dan dampak lingkungan
- Foto - foto kegiatan

RINGKASAN PEMBAHASAN BIDANG LINGKUNGAN
(ENVIRONMENTAL SCOPING SESSION)
PROYEK IRIGASI PONRE-PONRE DAN PROYEK SELLI-COPPOBULU

Tanggal : 9 Desember 1989
Tempat : Ruang Pola Kantor Bupati Tkt.II Bone
Acara : Environmental Scoping Session Proyek Ponre-Ponre (Kec. Libureng) dan Proyek Selli-Coppobulu (Kec.Lappariaja).
Peserta : Instansi Terkait, Muspida Tkt.II Bone, pemuka masyarakat utamanya dikedua rencana proyek tersebut (Daftar hadir peserta terlampir).

Acara dimulai jam 9:35 oleh Pembawa Acara (Drs. Abd.Wahab). Sebelum acara dilanjutkan pembawa acara membacakan susunan selengkapnya dari acara Environmental Scoping Sesssion Proyek Irigasi Ponre-Ponre dan proyek irigasi Selli-Coppobulu ini (susunan acara terlampir).

Setelah susunan acara dibacakan, pembawa acara mempersilahkan Bupati Kepala Daerah Tingkat II Bone untuk memberikan sambutan dan pengarahan serta sekaligus membuka acara ini. Berhubung Bupati Tidak dapat menghadiri acara, beliau diwakili oleh Sekertaris Daerah Tkt.II Bone Bapak Drs. H.B. Paturungi untuk menyampaikan sambutannya. Dalam kata pengarahannya beliau menjelaskan pentingnya kita memperhatikan lingkungan hidup dalam melaksanakan pembangunan, agar supaya generasi akan datang tidak mengalami kesulitan dimasa depan. Dalam kata akhirnya beliau menyampaikan kepada segenap Intansi terkait, para Camat , Kepala Desa dan Pemuka Masyarakat agar betul-betul menyadari pentingnya pemeliharaan lingkungan hidup, oleh sebab itu agar supaya mengikuti acara ini sampai selesai, dan dapat memberikan bantuan informasi sebanyak banyaknya. Setelah selesai menyampaikan dan sekaligus menjelaskan sambutan Bupati Bone, beliau minta pamit karena akan memimpin rapat koordinasi Pemda Tkt. II Bone.

Acara selanjutnya adalah penjelasan tentang maksud dan tujuan Environmental Scoping Session yang dibawakan oleh DR. Peter Ames dari Harza Engineering Consultant Chicago. Sebelum melanjutkan acara ini , pembawa acara penyerahkan acara ini kepada team pengarah acara (Ir. Soeprpto Budisantoso ,MSC.) untuk memimpin acara selanjutnya. Sebelum memulai acara pengarah acara mempersilahkan para pembawa acara untuk tampil kedepan untuk duduk bersama sama dengan team pengarah acara. Setelah para pembawa acara duduk bersama didepan, maka pengarah acara melanjutkan acara ini dengan terlebih dahulu memperkenalkan rombongan yang datang dari Ujung Pandang yaitu :

1. DR. Peter Ames, tenaga ahli Lingkungan Hidup dari Harza Engineering Consultant, Chicago USA.
2. Noel Corconran, PE , tenaga ahli irigasi dari Harza Engineering Consultant, USA
3. Ir. Gunawan Widjaja, Staf Kedutaan Amerika Serikat, Jakarta

4. Drs. Abd.Wahab M.Th., Tenaga Ahli Sosial Ekonomi Kanwil PU Sul.Sel.
5. Ir. Karel Paranoan, Penanggung jawab Pekerjaan Pradesain SSIMP Sulawesi Selatan.
6. DR. Peter Neame, tenaga ahli Lingkungan Hidup dari Harza Engineering consultant.
7. DR. Alfian Noer, MSc., tenaga ahli Lingkungan dari Pusat Study Lingkungan (PSL) UNHAS
8. Para Perencana dari PT Jasa Mitra dan PT Indec sebagai konsultan yang dikontrak untuk mengadakan survey dan desain pada daerah irigasi Ponre Ponre dan daerah irigasi Selli Coppobulu.
9. Dra Syamsiah Ras sebagai staf Sekretariat.

Setelah memperkenalkan para rombongan yang datang dari Ujung pandang, pengarah acara mempersilahkan DR. Peter Ames untuk tampil kepodium untuk menyampaikan penjelasan tentang maksud dan tujuan environmental scoping session. Dalam penjelasan tersebut yang disampaikan dalam bahasa Inggris Dr. Peter Ames menguraikan tentang tujuan dari pada penilaian lingkungan secara rinci yang kemudian disusul dengan penjelasan tentang tujuan dari pada pembahasan dampak lingkungan yang dilakukan pada hari itu. Dalam memberikan penjelasan tersebut beliau didampingi oleh pengarah acara sebagai penterjemah dari penjelasan yang disampaikan.

Seusai memberikan penjelasan DR. Peter Ames menyampaikan ucapan terima kasih kemudian turun dari podium yang selanjutnya kembali ketempat duduk semula bersama sama dengan team pengarah acara dan pembawa acara lainnya.

Selanjutnya pengarah acara mempersilahkan Ir. Gunawan Widjaja untuk menyampaikan penjelasan singkat mewakili komisi lingkungan hidup USAID. Dalam kesempatan ini beliau menjelaskan tentang dasar hukum pelaksanaan studi lingkungan serta menjelaskan secara rinci tentang prosedur penilaian lingkungan suatu proyek yang dibiayai dengan dana bantuan pemerintah Amerika Serikat. Disamping menjelaskan peraturan dan proses penilaian lingkungan bagi proyek proyek tersebut, beliau juga menjelaskan secara rinci tentang dasar hukum dan proses penilaian lingkungan dari pemerintah Indonesia. Dalam keterangan akhirnya dikatakan bahwa Environmental Scoping Session ini adalah merupakan kegiatan mencari informasi lingkungan. Dalam prosedur penilaian lingkungan dari pemerintah Indonesia, kegiatan ini merupakan proses dari pengadaan Penyajian Informasi Lingkungan (PIL).

Selanjutnya pengarah acara mempersilahkan Mr. Noel Corcoran, PE, untuk menjelaskan tentang rencana pembangunan proyek. Penjelasan rencana proyek kesemuanya disampaikan dalam bahasa Inggris. Seperti halnya dengan pembicara pertama (DR.Peter Ames), maka pada kesempatan ini beliau juga didampingi oleh

pengarah acara sebagai penterjemah. Pada kesempatan pertama beliau menjelaskan tentang konsep pembangunan proyek Ponre-Ponre kemudian, konsep pembangunan proyek Selli-Coppobulu.

Dengan berakhirnya penjelasan dari Mr. Noel Corcoran tadi, maka acara selanjutnya adalah pembahasan dampak lingkungan pada kedua rencana proyek tersebut.

Sebelum memasuki acara pembahasan, pengarah acara terlebih dahulu minta perhatian kepada para peserta supaya memperhatikan tabel hubungan antara kegiatan dan dampak lingkungan yang mungkin terjadi, yang telah dibagikan sebelumnya. Pada kesempatan ini pengarah acara menjelaskan tentang cara menggunakan tabel tersebut dan sekaligus menterjemahkannya kedalam bahasa Indonesia. Dan setelah para peserta dapat mengerti tentang penggunaan tabel tersebut, maka pengarah acara (Ir.Soperapto Budisantoso, MSc) menyerahkan palu sidang kepada team pengarah acara lainnya (Bapak Ir.M.Rusli dari Bappeda Tkt.II Bone) untuk memimpin acara selanjutnya.

Dalam kata pengarahannya sebelum memasuki acara diskusi, beliau menjelaskan bahwa secara umum pembangunan kedua proyek ini tidak akan menghadapi masalah dalam pelaksanaannya. Hal ini disebabkan oleh karena sejak dicanangkannya proyek ini pemerintah daerah tkt.II Bone telah menerima informasi tentang rencana proyek ini, dimana masyarakatnya juga diberitahu sehingga kesiapan dari pada masyarakat dan pemerintah sudah mantap. Namun demikian diharapkan masih adanya tambahan informasi, input, atau saran-saran sehubungan dengan dampak negatif yang akan timbul apabila proyek ini dibangun. Barangkali ada kubururan leluhur yang akan terkena proyek yang dapat mempengaruhi kehidupan masyarakat atau dampak lainnya agar supaya cepat cepat diberi informasi kepada proyek, ucapnya memberi contoh.

Selanjutnya beliau membuka Babak pertama, dan memberikan kesempatan kepada para peserta untuk bertanya atau memberikan informasi kepada team. Pada kesempatan babak pertama ini tampil dua pembicara masing-masing :

1. Bapak Memel Surya S. Kepala Cabang Sub BRI.KT (Balai Rehabilita Lahan dan Konservasi Tanah) Bone mewakili kepala BRI.KT Propinsi Tkt.I yang berhalangan hadir.

Dalam pembicaraanya beliau memberikan informasi tentang rencana pembukaan hutan tanaman industri oleh BRI.KT, seluas 30.000 hektar, yang meliputi Desa Tompobulu, DEsa Tappale dan Desa Langi, pada periode tahun 89-94 (5 tahun).

Selanjutnya beliau mempertanyakan batas dari rencana proyek - proyek Ponre-Ponre agar dapat menyesuaikan lokasi hutan yang direncanakan. Juga dipertanyakan apakah kegiatan proyek meliputi kegiatan konservasi lahan.

2. Bapak Andi Ismail Tahir, BA, Sekretaris Kecamatan Libureng - merangkap sebagai Kepala Desa persiapan Mario, Kec. Libureng.

Dalam keterangannya beliau memberi informasi bahwa sebagian - besar masyarakatnya menggunakan air sungai untuk kebutuhan sehari-hari (minum, cuci dsb). Apabila sungai Tinco nantinya di - bendung, air yang akan mengalir kehilir akan berkurang bahkan mungkin pada kurun waktu tertentu tidak ada sama sekali. Beliau u mempertanyakan, apakah pihak proyek sudah mempertimbangkan - tentang kebutuhan air masyarakat apabila proyek nanti dibangun

Setelah kedua pembicara selesai berbicara, pengarah acara menjelaskan secara ringkas pokok pertanyaan kedua penanya kemudian memberikan kesempatan kepada pihak pembawa acara (team dari proyek) untuk memberikan jawaban/penjelasan sehubungan dengan pertanyaan kedua penanya tadi.

Setelah berkonsultasi sejenak dengan para pembawa acara, maka tampil Bapak Ir. Soeprpto B. MSc. memberikan jawaban atas kedua penanya tadi sebagai wakil dari team.

Dalam kata jawaban yang disampaikan dijelaskan bahwa mengenai batas DAS dan areal proyek yang pasti bagi proyek belum bisa memberikan keterangan secara pasti. Hal ini disebabkan oleh karena penelitian terhadap pengembangan proyek Ponre-Ponre ini masih dalam proses. Namun demikian pihak proyek dapat memberikan perkiraan yang mungkin dilakukan pada peta rencana yang dapat dilihat sesuai acara. Mengenai kebutuhan air bagi masyarakat setelah sungai Tinco dibendung, pihak proyek tetap akan memperhatikannya. Lebih jauh dijawab pula oleh Bapak Ir. Gunawan Widjaja, bahwa apa yang di khawatirkan oleh Bapak Ismail sebenarnya merupakan bagian yang dipikirkan oleh pihak proyek. Penanggulangan terhadap masalah masalah yang timbul akan tertuang dalam rencana penanggulangan dampak lingkungan yang merupakan bagian dari proses evaluasi lingkungan ini. Setelah pertanyaan pertanyaan ini terjawab corong diserahkan kembali kepada pengarah acara.

Kemudian pengarah acara membuka babakan kedua, dan memberikan kesempatan kepada peserta untuk mengemukakan pertanyaan atau informasi maupun input- input selanjutnya.

Dalam kesempatan ini tampil lima pembicara, masing-masing tampil dengan pertanyaan sebagai berikut :

1. Bapak Abdullah M. dari Kantor Penerangan Kab.Tkt.II Bone

Dalam kata pengantarnya beliau menjelaskan tentang betapa pentingnya informasi dan penerangan bagi masyarakat apabila kita ingin pembangunan itu sukses. Pada kesempatan itu beliau menekankan tiga hal pokok yang mesti diperhatikan. Pertama adalah pentingnya memberikan informasi yang seluas luasnya kepada masyarakat tentang rencana proyek yang akan dilaksanakan. Kedua adalah perlunya memperhatikan kehidupan orang-orang yang akan dipindahkan sebagai akibat adanya proyek. Ketiga adalah pertanyaan mengenai ganti rugi bagi tanah dan bangunan yang terkena proyek.

2. Andi Abdul Jabbar kepala desa Tappale Kec. Libureng

Pertama-tama beliau menjelaskan/memberikan informasi tentang pembangunan Irigasi Ponre-Ponre (mata air) yang dilakukan melalui PPW Sanrego Terpadu telah dibangun beberapa jembatan serta peningkatan/perbaikan jalan desa yang ada. Beliau menyarankan bahwa dalam pembangunan proyek ini nanti hendaknya pengawasan pelaksanaan perlu ditingkatkan. Disamping hal tersebut supaya pihak proyek dapat juga membangun jembatan dan memperbaiki jalan desa yang ada. Beliau juga mengemukakan bahwa saluran ke Desa Bune akan menyilang dua sungai kecil yang selalu berair. Selanjutnya mengingat banyaknya lahan dengan kemiringan yang besar, dipertimbangkan apakah pihak proyek dapat membantu meratakan lahan tersebut (pencetakan sawah). Akhirnya beliau mengemukakan bahwa lokasi-lokasi pemukiman yang ada umumnya pada daerah ketinggian.

3. Andi Achmad Kepala Desa Bune Kecamatan Libureng.

Beliau banyak memberikan informasi sehubungan dengan keberadaan proyek PPW Sanrego terpadu yang telah banyak memberikan manfaat bagi perkembangan perekonomian desa Bune. Dijelaskan bahwa dahulu Desa Bune sangat terisolir. Roda perekonomian desa sangat lambat oleh karena kesulitan transportasi dimana desa tak dapat dijangkau oleh kendaraan terlebih lebih pada musim hujan, namun dengan adanya proyek PPW Sanrego terpadu yang membangun jalan dan jembatan membuat Desa Bune dewasa ini sudah dapat dijangkau dengan kendaraan. Lebih jauh beliau menjelaskan bahwa tanah-tanah yang sudah dibebaskan oleh pabrik gula Camming yang berada dalam wilayah Desa Bune sebenarnya tidak ada masalah dengan kehadirannya proyek Irigasi Ponre-Ponre ini oleh karena kesemuanya tanah tersebut berada pada tanah ke

tinggian yang dahulunya padang rumput, yang tidak akan dijangkau oleh air irigasi. Selanjutnya beliau mempertanyakan masalah ganti rugi bagi tanah dan bangunan yang mungkin terkena proyek.

4. Abdul Rahman Sekertaris Desa Selli Kecamatan Laapariaja.

Beliau menginformasikan bahwa dewasa ini di desa Selli telah ada bendung dan jaringan irigasi yang dibangun oleh masyarakat desa yang memungkinkan petani dapat menanam dua kali setahun. Selanjutnya dipertanyakan bahwa apakah bendung dan jaringan irigasi yang ada sekarang ini masih tetap dapat digunakan apabila proyek nanti ada.

5. Abdul Rahim Kepala Kantor Departemen Agama Tkt. II Bone

Beliau menginformasikan bahwa mayoritas penduduk yang ada dalam wilayah proyek adalah beragama Islam. Oleh karena itu terdapat banyak Mesjid. Sehubungan dengan pembangunan proyek ini apabila ada Mesjid atau tempat peribatan lainnya akan terkena proyek supaya sedapatnya dihindari atau kalau memang tidak dapat dihindari kiranya proyek dapat mengganti atau membangun mesjid dan tempat ibadah yang terkena proyek tersebut.

Setelah para penanya selesai bertanya, maka pengarah acara memberikan uraian singkat tentang pertanyaan pertanyaan yang disampaikan tadi, kemudian menyerahkan corong kepada Ir. Soeprapto untuk mewakili team memberikan jawaban kepada para penanya.

Didahului dengan konsultasi sejenak dengan para pembawa acara, maka tampil Ir. Soeprapto memberikan jawabannya. Dalam kata awalnya beliau mengatakan bahwa beliau akan memberikan jawaban sekaligus sehingga pertanyaan yang sama tidak dijawab satu persatu lagi.

Dalam keterangan selanjutnya, beliau mengatakan bahwa memang dari pihak proyek akan memberikan informasi seluas luasnya kepada pemerintah daerah maupun masyarakat desa tentang rencana proyek ini. Akan tetapi berhubung saat sekarang ini masih dalam tahap pradesain keterangan untuk itu belum dapat diberikan. Nanti pada tahap Detail Desain baru pihak proyek akan memasang petainformasi pada papan pengumuman pemda atau desa untuk diketahui oleh masyarakat luas. Dalam kesempatan itu nanti pihak PU akan berkonsultasi dengan masyarakat petani pemakai air tentang rencana definitif proyek. Lebih jauh dijelaskan bahwa dalam pembangunan proyek Ponre-Ponre diperkirakan ada 30 buah rumah yang akan tenggelam kena genangan waduk yang perlu dipindahkan. Selanjutnya dijelaskan menyangkut pemberian ganti rugi tanah dan tanaman/bangunan yang terkena proyek pihak proyek akan tetap

memberikan ganti rugi berdasarkan harga dasar yang telah dikeluarkan/ditentukan oleh panitia pembebasan tanah, namun yang diberikan ganti rugi adalah tanah-tanah yang terkena bangunan utama dan jaringan utama saja sedang untuk jaringan tersier tidak akan diberikan. Mengenai pembangunan sarana jalan proyek tetap akan mengusahakan peningkatannya, biasanya menyangkut jalan desa dan jalan petani sedang menyangkut bangunan ibadah dan bangunan-bangunan penting lainnya pihak proyek memang sejak dini berusaha menghindarinya. Sedang mengenai kelanjutan penggunaan jaringan irigasi yang berada di desa Setli tetap akan diusahakan penggunaannya atau menggabungkannya. Dalam akhir penjelasannya Bapak Ir. Soeprapto Budisantoso, MSc. menyampaikan ucapan terima kasih atas informasi yang diberikannya karena informasi ini sangat membantu dalam perencanaan proyek ini.

X Selesai memberikan penjelasan kepada lima orang penanya tadi corong diserahkan kembali kepada Bapak M. Rusli untuk memimpin acara selanjutnya. Berhubung waktu sudah menunjukkan pukul 12:05 WITA pengarah acara menawarkan kepada peserta untuk istirahat sampai pukul 13:00. Dalam kurun waktu tersebut dapat digunakan untuk shalat dan makan siang bersama hidangan yang telah disiapkan oleh penyelenggara. Namun atas permintaan peserta dan disepakati bersama, maka waktu istirahat hanya sampai pukul 12:30 dan setelah itu akan dilanjutkan dengan acara tanya jawab untuk babak ke tiga.

Babak ketiga dimulai pukul 13:35 tepat, dipimpin oleh pengarah acara Ir. M. Rusli dari Bappeda Tkt. II Bone. Pada awal pembicaraannya sebelum membuka babakan ketiga ini beliau menyampaikan bahwa sudah banyak input dan informasi yang telah masuk, namun demikian demi sempurnya pembangunan proyek nanti, maka masih diberi kesempatan seluas-luasnya untuk mengajukan pertanyaan atau input/informasi lagi. Untuk itu beliau memberikan kesempatan kepada peserta. Untuk itu pada kesempatan babakan ketiga ini tampil pembicara yang mengajukan pertanyaan, informasi dan input sebanyak tiga orang masing-masing yaitu :

1. M. Issak dari Dinas Pertanian Tanaman Pangan Tkt. II Bone.

Dalam kesempatan tersebut beliau memberikan informasi tentang gambaran umum daerah irigasi Ponre-Ponre. Beliau menyatakan bahwa umumnya komoditas yang dapat tumbuh baik pada ladang dan sawah sawah yang ada pada rencana irigasi adalah Padi, Jagung, Kedele dan kacang tanah. Secara umum pada daerah ini mempunyai intensitas taman sebesar 115 % dan memperkirakan bahwa apabila proyek dapat berjalan, maka intensitas ini akan naik menjadi 175 %. Lebih jauh beliau menyarankan bahwa apabila proyek ini nantinya berjalan agar supaya kiranya dapat menggunakan/mengikutkan P3A yang sudah ada untuk pengaturan pemberian air bagi petani.

2. Bapak dari Kantor Agraria Kabupaten Bone.

Beliau memberikan informasi bahwa di daerah rencana Proyek - Irigasi Ponre-Ponre terdapat daerah yang termasuk daerah penguasaan dari Pusat Latihan Tempur Kodam VII Wirabuana. Untuk itu perlunya diketahui batas-batas kawasan proyek ini.

3. Bapak Andi Rajab Ibrahim dari Kantor Bangdes Tkt.II Bone.

Beliau menginformasikan bahwa di daerah proyek Ponre-ponre telah dimukimkan beberapa kepala keluarga. Selanjutnya diminta agar supaya sumur sumur yang telah dibuat oleh Bangdes jangan sampai akibat pembangunan proyek ini sumur-sumur yang ada menjadi kering.

Setelah memberikan ringkasan pertanyaan dari peserta rapat pengarah acara menyerahkan corong kembali kepada Ir. Soeprapto untuk memberikan penjelasan terhadap pertanyaan-pertanyaan tersebut.

Ir. Soeprapto, setelah berkonsultasi dengan pihak pembawa acara, memberikan penjelasan bahwa pada dasarnya proyek juga melakukan studi evaluasi kesesuaian lahan, dan pola serta intensitas tanam akan ditentukan berdasarkan studi tersebut serta studi ketersediaan air. Mengenai P3A pihak proyek justru akan turun lapangan berkonsultasi dengan masyarakat petani untuk mengkonsultasikan apakah rencana yang dibuat oleh proyek dapat disetujui oleh mereka. Selanjutnya akan diusahakan pula agar P3A dapat terbentuk disetiap petak tersier, agar pembagian dan distribusi air pada petak tersebut berikut pemeliharanya dapat ditangani oleh petani sendiri. Lebih jauh dijawab pula oleh bapak Ir. Gunawan Widjaja bahwa nanti akan ada team yang disebut WUAO (Water User Asosiasiorganizer) yang akan ditempatkan di desa yang akan mengorganisir keterlibatan Petani dalam proses perencanaan dan produksi.

Mengenai areal latihan militer, dijelaskan bahwa sejauh ini diketahui bahwa areal tersebut berada diluar areal proyek. Mengenai relokasi penduduk, diperkirakan proyek Ponre-ponre akan memindahkan sekitar 200 orang (35 KK), dan tentang sumur-sumur penduduk yang mungkin terganggu, studi tentang alternative pemberian air saat ini sedang dilakukan oleh pihak proyek.

Dari Bapak H. Rahim Abdullah, BE., Kepala Kantor Pembantu Sub Dinas Pengairan Wilayah II Bone memberikan informasi bahwa untuk kawasan kebun tebu Pabrik gula Camming ada seluas 9.000 Ha dan hanya seluas 40 Ha yang berada pada Desa Bune dan itu berada pada daerah ketinggian sehingga untuk ini tidak ada masalah.

Kemudian diinformasikan bahwa pada rapat koordinasi tingkat II Bone baru baru ini Bapak Bupati Tkt. II Bone menekankan bahwa dalam pembangunan proyek hendaknya diperhatikan perbaikan/peningkatan jalan Desa dan jalan Kecamatan. Lebih jauh diinformasikan bahwa untuk daerah kabupaten Bone terdapat 240 P3A dimana diantaranya adalah P3A yang terdapat di daerah irigasi Ponre-ponre.

Setelah mendengarkan kata penjelasan dari Bapak Rahim Abdullah, BE., corong diserahkan kembali kepada Ir.M.Rusli untuk memimpin acara selanjutnya. Pada kesempatan ini beliau masih mempersilahkan kepada peserta untuk bertanya/memberikan informasi lagi sekiranya masih ada hal hal yang masih perlu ditanyakan atau diinformasikan. Namun demikian nampaknya tidak ada lagi yang bertanya dan beliau dalam kata akhirnya mengatakan bahwa secara umum masyarakat di kedua rencana proyek ini sudah siap karena memang sejak semula telah diberikan informasi mengingat model pembangunan yang digunakan di kabupaten Bone ini adalah model pembangunan terpadu seperti hal yang dilaksanakan pada PPW Sanre-go terpadu. Dengan mengucapkan terima kasih banyak kepada semua peserta atas perhatian dan partisipasi dalam mengikuti pertemuan ini pengarah acara menutup rapat tepat pada pukul 13:45 dengan mengucapkan Alhamdulillah.

Ujung Pandang, 9 Desember 1989

Koordinator Pelaksana,

Drs. Abd.Wahab M.TH.
Nip.110021189

PROYEK IRIGASI PONRE-PONRE DAN SELLI-COPPOBULU
KABUPATEN BONE, SULAWESI SELATAN

.PENJELASAN SINGKAT TENTANG
PEMBAHASAN BIDANG LINGKUNGAN

WATAMPONE

Desember 1989

PROYEK PENGELOLAAN IRIGASI SKALA KECIL (SSIMP)
DIREKTORAT JENDERAL PENGAIRAN
DEPARTEMEN PEKERJAAN UMUM, INDONESIA

DAN

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT(USAID)

**PENJELASAN SINGKAT TENTANG
PEMBAHASAN BIDANG LINGKUNGAN**

UNTUK PROYEK IRIGASI PONRE-PONRE DAN SELLI COPPOBULU

Pendahuluan

Penjelasan ini memberikan informasi tentang Proyek irigasi Ponre-Ponre dan Selli Coppobulu dan penilaian lingkungannya, serta diperuntukkan bagi para peserta pembahasan, yang direncanakan akan diselenggarakan pada bulan Desember 1989, di Watampone, Sulawesi Selatan. Materi singkat ini tidak dimaksudkan untuk menjadi suatu laporan ataupun suatu deskripsi yang lengkap, akan tetapi hanya merupakan bahan pembahasan. Diharapkan bahwa materi maupun pertemuan pembahasan yang direncanakan tersebut mempunyai tujuan agar para pembaca/peserta dapat memaklumi tentang areal Proyek, sumber daya proyek, dan dampak yang mungkin merugikan, serta adanya manfaat yang diperoleh karena adanya usaha pengembangan irigasi.

Tujuan Penilaian Lingkungan

Tujuan utama dari pada penilaian lingkungan ini ialah untuk meneliti atau menanyakan, apakah ada kemungkinan akan timbul dampak utama yang negatif dari pada proyek terhadap lingkungannya. Sebaliknya, laporan yang akan dipersiapkan juga menilai tentang dampak negatif lingkungan yang kemungkinan dapat mempengaruhi fungsi dan efisiensi dari pada proyek. Apabila akibat yang berbahaya sudah dapat di identifikasikan, maka diperlukan suatu rencana untuk mengurangi dampak utama yang negatif dan usaha untuk memperoleh peningkatan manfaat yang lainnya.

Tujuan Pembahasan

Secara umum, maksud dari pada pembahasan ini adalah untuk memberikan kepekaan kepada para perencana proyek dalam kaitannya dengan lingkungan, baik yang bersifat lokal maupun regional. Disamping itu juga untuk mengidentifikasi masalah-masalah yang mungkin timbul, untuk dapat dikaji secara lebih mendalam. Hasil dari pada pembahasan ini dan beberapa studi selanjutnya akan digunakan didalam keseluruhan siklus proyek untuk kepentingan perencanaan dan pengelolaan, terutama dalam kaitannya dengan jaminan terhadap hal-hal yang dapat mendukung proyek. Beberapa pembahasan sebelumnya yang juga pernah diadakan di Sul.Sel. untuk proyek-proyek SSIMP (Awo dan Salomekko) ternyata telah dapat melengkapi perencana dalam hal penilaian terhadap minat dan perhatian Pemerintah, dengan hasil berupa produk laporan lingkungan yang lebih lengkap.

Kebijaksanaan Lingkungan

Pemerintah Indonesia dan Pemerintah Amerika mempunyai kebijaksanaan yang serupa didalam hal pengelolaan lingkungan secara tepat, sikap tersebut dinyatakan didalam Pembukaan dari pada Peraturan Pemerintah No.29 seperti yang diperlukan didalam kerangka pengembangan dengan suatu pandangan lingkungan. Pengelolaan lingkungan hidup beraskan pelestarian kemampuan lingkungan yang serasi dan seimbang untuk menunjang pembangunan yang berkesinambungan bagi peningkatan kesejahteraan manusia. Setiap kegiatan pembangunan pada dasarnya menimbulkan dampak lingkungan hidup yang perlu diperkirakan pada perencanaan awal sehingga sejak dini telah dipersiapkan langkah penanggulangan dampak negatif dan pengembangan dampak positifnya. Didalam US NEPA juga terkandung bahasa yang serupa, yaitu mengamanatkan untuk memasukkan perencanaan lingkungan didalam setiap tindakan dari pada Pemerintah federal yang dapat memberikan akibat lingkungan yang layak.

Persyaratan Pemerintah Indonesia

Di Indonesia, proses penilaian lingkungan adalah berdasarkan atas Peraturan Pemerintah No.29 Tahun 1986 yang pelaksanaannya melalui beberapa Keputusan Menteri Kependudukan dan Lingkungan Hidup. Didalam beberapa keputusan ini telah ditetapkan bahwa suatu proyek baru adalah merupakan subyek dari suatu laporan PIL (Penyajian informasi Lingkungan) (Kep.Men. KLH Nomor 49/MENKLH/1987), dan untuk itu perlu ada keputusan dari komisi PIL mengenai laporan lengkap AMDAL (Kep. Men. KLH Nomor 50/MENKLH/1987. Sebagai tambahan dari laporan AMDAL, Kep. Men KLH Nomor 50/MENKLH/1987 menetapkan tatacara untuk menyusun RPL dan RKL.

Persyaratan USAID

Persyaratan dari Pemerintah A.S. tentang perencanaan lingkungan telah ditetapkan dalam National Enviromental Policy Act (NEPA) tahun 1969, yang kemudian juga diperlakukan bagi Proyek-Proyek diluar Amerika dan mendapatkan pembiayaan dari Pemerintah Amerika dengan adanya Amandemen Pelaksanaan Bantuan Luar Negeri tahun 1986. Sedangkan perincian pelaksanaannya dinyatakan didalam Peraturan USAID No.16. Peraturan yang dimaksud menetapkan suatu proses yang serupa dengan proses PIL bagi Pemerintah Indonesia, dimana suatu proyek dipastikan mempunyai dampak lingkungan nyata yang mungkin timbul, sehingga perlu dilakukan penilaian lingkungan (Enviromental Assesment). Dalam hal tidak adanya nampak lingkungan yang mungkin timbul maka diperlukan suatu pengaturan tentang tidak adanya dampak nyata dan studi lebih lanjut mengenai dampak tidak diperlukan lagi.

Gambaran Proyek

Proyek Irigasi Ponre-Ponre

Proyek Irigasi Ponre-Ponre (Gambar 1) berlokasi di Kecamatan Libureng, Kabupaten Bone, Sulawesi Selatan. Proyek ini terdiri atas sebuah waduk yang akan dibangun disekitar pertengahan dari panjang sungai Tinco, sekitar 10 km di sebelah hulu pertemuannya dengan sungai Walanae. Air dari waduk akan dialirkan melalui saluran-saluran irigasi ke persawahan di Desa Tompobulu, Swadaya, Tappale dan Bune.

Bangunan utama proyek ini adalah sebuah bendungan di sungai Tinco dengan tinggi sekitar 45 m. Luas daerah permukaan genangan akan mencapai sekitar 215 ha pada keadaan normal, dengan elevasi muka air pada +215 m, dan daya tampung waduk sekitar 28 juta meter kubik. Daerah waduk umumnya terletak di atas padang rumput dan belukar, tetapi juga meliputi beberapa sawah tadah hujan dan daerah pemukiman penduduk.

Daerah irigasi akan terdiri atas 3.000 ha sawah, yang berbatasan di sebelah Selatan oleh sungai Tinco, disebelah Utara oleh sungai Minraleng, di sebelah Timur oleh sungai Walanae dan di sebelah Barat oleh daerah pegunungan.

Selain pembuatan bendungan dan bangunan-bangunan pelengkap-nya, serta jaringan-jaringan irigasi, akan dilakukan pula kegiatan-kegiatan lain yang berhubungan dengan proyek ini: seperti peningkatan jalan dari Tinco ke lokasi bendungan, pembangunan rumah-rumah untuk tenaga kerja, serta pembebasan tanah dan lain-lain yang ada pada daerah genangan.

Proyek Irigasi Selli-Coppobulu

Proyek irigasi Selli-Coppobulu (Gambar 2) terbentang di Kecamatan Lappariaja, Kabupaten Bone, sampai pada sisi Timur jalan raya antara Camba dan Watampone.

Daerah irigasinya pada umumnya rata, dan landai terutama di bagian Barat daya. Daerah irigasi ini terdiri dari lebih 2000 ha sawah tadah hujan yang secara potensial dapat diairi. Dua bendung kecil di sungai Selli dan Sungai Coppobulu, mengairi masing-masing 715 dan 225 ha sawah selama musim hujan dan 200 dan 75 ha sawah selama musim kering. Kedua jaringan ini akan digabung menjadi satu Proyek Selli-Coppobulu.

Penyelidikan hidrologi awal menunjukkan bahwa air sungai yang ada di sungai Selli dan sungai Coppobulu tidak akan mencukupi untuk mengairi semua luas tanah yang potensial. Penyelidikan yang dimaksudkan untuk menetapkan batas-batas kemampuan sumber air permukaan ini masih berlanjut terus.

Pola dari proyek Selli-Coppobulu masih belum menentu sampai saat ini, dan akan tergantung dari hasil penyelidikan hidrologi dan evaluasi dari lokasi dam. ada kemungkinan merupakan proyek

waduk dan bendungan di sungai Selli, bendung permanen di sungai Selli dan/atau di sungai Coppobulu, saluran-saluran irigasi permanen atau semi-permanen, atau irigasi suplesi air tanah.

Daerah aliran sungai Selli dan Coppobulu tidak luas (masing-masing 9.8 km² dan 3.2 km²), curam, dan tertutupi oleh hutan atau daerah pertanian yang telah ditinggalkan, dan padang rumput yang telah dihutankan kembali. Suatu proyek reboasasi yang disponsori oleh ABRI telah dilaksanakan pada daerah ini beberapa tahun yang silam.

Bila waduk di sungai Selli ternyata layak secara teknis dan ekonomis, mungkin bendungan itu akan merupakan bendungan urugan batu. Tinggi bendungan mungkin sekitar 40 sampai 50 m. Waduk akan menempati sekitar 50 sampai 100 ha tanah yang relatif curam dan tidak dihuni oleh penduduk.

Penyelidikan yang sudah dilakukan sejauh ini menunjukkan bahwa suatu bendungan di sungai Coppobulu secara ekonomis tidak memungkinkan, karena kecilnya daerah aliran sungai.

Beberapa Studi yang sedang berjalan

Pada saat ini, beberapa studi yang antara lain mengenai teknis, ekonomi, sosial dan lingkungan sedang dilaksanakan. Studi dilaksanakan oleh Kanwil Dep. PU Prop. Sulawesi Selatan dengan dibantu oleh beberapa Team konsultan pada kurun waktu dan ruang lingkup yang berbeda-beda. Studi teknis untuk daerah irigasi ini, antara lain mencakup tentang tata letak jaringan irigasi, design jaringan irigasi dan study penyediaan air baik air permukaan maupun air tanah. Studi ekonomi dilaksanakan untuk menguji biaya dan manfaat proyek dalam arti biaya pelaksanaan, intensitas pertanaman, pemilihan tanaman dan ekonomi pasar. Sedangkan survey sosial dibutuhkan untuk mengembangkan suatu gambaran yang cukup luas mengenai kondisi sosial didaerah irigasi dalam rangka menjamin penerimaan proyek dan pengoperasian jangka panjang yang berhasil guna.

Team studi lingkungan terdiri atas seorang ekolog tanah dan air yang bekerja sama dengan Harza Engineering Company. di Sumbang oleh tersedianya laboratorium kualitas air, Universitas Hasanuddin (UNHAS). Para ahli tersebut bekerja sama didalam mempersiapkan data tentang berbagai sumber daya lingkungan yang ada di wilayah setempat yang nampaknya akan terpengaruh oleh adanya proyek. Wilayah yang dimaksud mencakup diantaranya daerah irigasi proyek, dan sistim alur sungai yang ada disekitar dibagian hilir dari pada areal proyek. Contoh-contoh air telah diambil pada 5 (lima) tempat didalam areal proyek Ponre-Ponre dan 6(enam) tempat didalam areal proyek Selli-Coppobulu, yang kemudian dianalisa dilaboratorium analitik UNHAS.

Beberapa akibat Lingkungan yang cepat diduga

Suatu proyek irigasi dapat memberikan akibat yang merugikan atau menguntungkan, terutama terhadap aspek-aspek fisik, biologis dan sosial ekonomi dari pada lingkungan. Akibat-akibat tersebut merupakan hal penting yang pada suatu tingkat tertentu diusakan oleh pemerintah dan masyarakat, seringkali dapat dilihat bahwa akibat lain dari pada suatu proyek irigasi adalah disebabkan oleh adanya perubahan didalam hal penggunaan dan tersedianya air. Perubahan tersebut antara lain terdiri atas adanya genangan waduk yang bersifat tetap, dan mencakup areal lahan seluas kurang lebih 1000 ha, berkurangnya debit/aliran sungai yang ada dibagian hilir dari pada waduk, dan juga bertambahnya air yang tersedia pada daerah irigasi yang menerima air melalui jaringan irigasi.

Akan tetapi proyek yang direncanakan tersebut akan memberikan berbagai akibat yang mungkin dapat dianggap cukup menggembarakan dalam arti pemampaan sumber dayanya (tanah dan air).

Sumber Daya Air

Dengan adanya tambahan areal irigasi dibagian kiri maka pengoperasian waduk akan mengalami perubahan, yang antara lain menyebabkan terjadinya penurunan muka air waduk dan juga berkurangnya jumlah air yang melimpah keluar dari waduk. Tingkat perubahan tersebut tentunya belum dapat dikemukakan, akan tetapi dapat dikatakan bahwa pada suatu ketika akan dialami adanya periode kering pada sungai yang ada dibagian hilir daripada waduk. Pada suatu tingkat tertentu akan terjadi keadaan seimbang, yaitu pada bagian hilir dari dua sungai kemungkinannya disebabkan karena adanya aliran air dari daerah irigasi yang sudah tidak dimanfaatkan masuk kembali kesungai (Irrigation return period). Begitu juga untuk sungai pada musim kemarau juga akan menerima tambahan aliran air.

Saluran induk Ponre-Ponre dan Selli-Coppobulu dan cabang-cabangnya akan menyediakan air untuk keperluan mandi dan cuci bagi masyarakat setempat, yang sampai saat ini masih mengalami kekurangan air. Pada saat sekarang ini, kebanyakan penduduk masih memanfaatkan genangan air yang terjadi pada beberapa cekungan atau menangkap air sungai di sungai dengan bendung-bendung yang sederhana untuk memenuhi air mereka guna keperluan mandi dan cuci.

Sumber Daya Lahan

Perubahan didalam tata guna lahan pada rencana daerah irigasi proyek diharapkan mempunyai kaitan dengan adanya usaha pertanian yang lebih intensip. Sedangkan adanya tambahan lahan untuk usaha pertanian kurang begitu diharapkan.

Sumber Daya Biologi

Sumber daya secara ekologis belum dipengaruhi oleh aktivitas manusia kiranya tidak dijumpai di wilayah proyek, selain itu juga tidak ada usaha untuk mengadakan modifikasi terhadap vegetasi yang ada, kecuali adanya perubahan tanaman yang terjadi diareal pertanaman. Ekosistem perairan diareal proyek pada saat sekarang ini masih tergantung pada terjadinya limpasan air dari waduk dan juga adanya "return flow" dari areal persawahan. Dengan adanya proyek maka terjadinya perubahan kualitas air juga mungkin dapat diharapkan, dan perubahan ini akan dapat diperbaiki apabila pengoperasian proyek sudah dapat ditetapkan.

Waduk proyek juga dapat dianggap sebagai sumber daya perikanan dalam skala kecil. Dengan adanya perubahan didalam pengoperasian waduk maka beberapa akibat yang mungkin timbul terhadap perikanan juga akan dievaluasi bersamaan dengan dilaksanakannya pekerjaan design. Bersamaan dengan itu juga terdapat pengaruh dari pada regime surut air yang baru terhadap banyaknya tumbuhan air yang ada pada saat sekarang yang jumlahnya berlebihan.

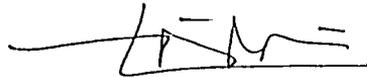
Sumber Daya Sosialekonomi dan Kebudayaan

Usaha perbaikan dan standar hidup dari para petani yang ada didaerah rencana irigasi merupakan sasaran utama. Dengan demikian hal ini tidak dianggap sebagai suatu akibat lingkungan. Terjadinya perubahan tersedianya air merupakan suatu yang mungkin dan hal ini akan mencerminkan manfaat local atau dampak yang akan diteliti. Akibat tambahan yang sifatnya tidak langsung dapat juga terjadi jika para petani menerima air untuk memenuhi kebutuhan dalam kondisi lebih baik atau bahkan lebih buruk. Team dari proyek juga diharapkan untuk berhati-hati dalam menangani masalah kebutuhan air penduduk setempat dan masalah ini akan dibahas didalam penilaian lingkungan.

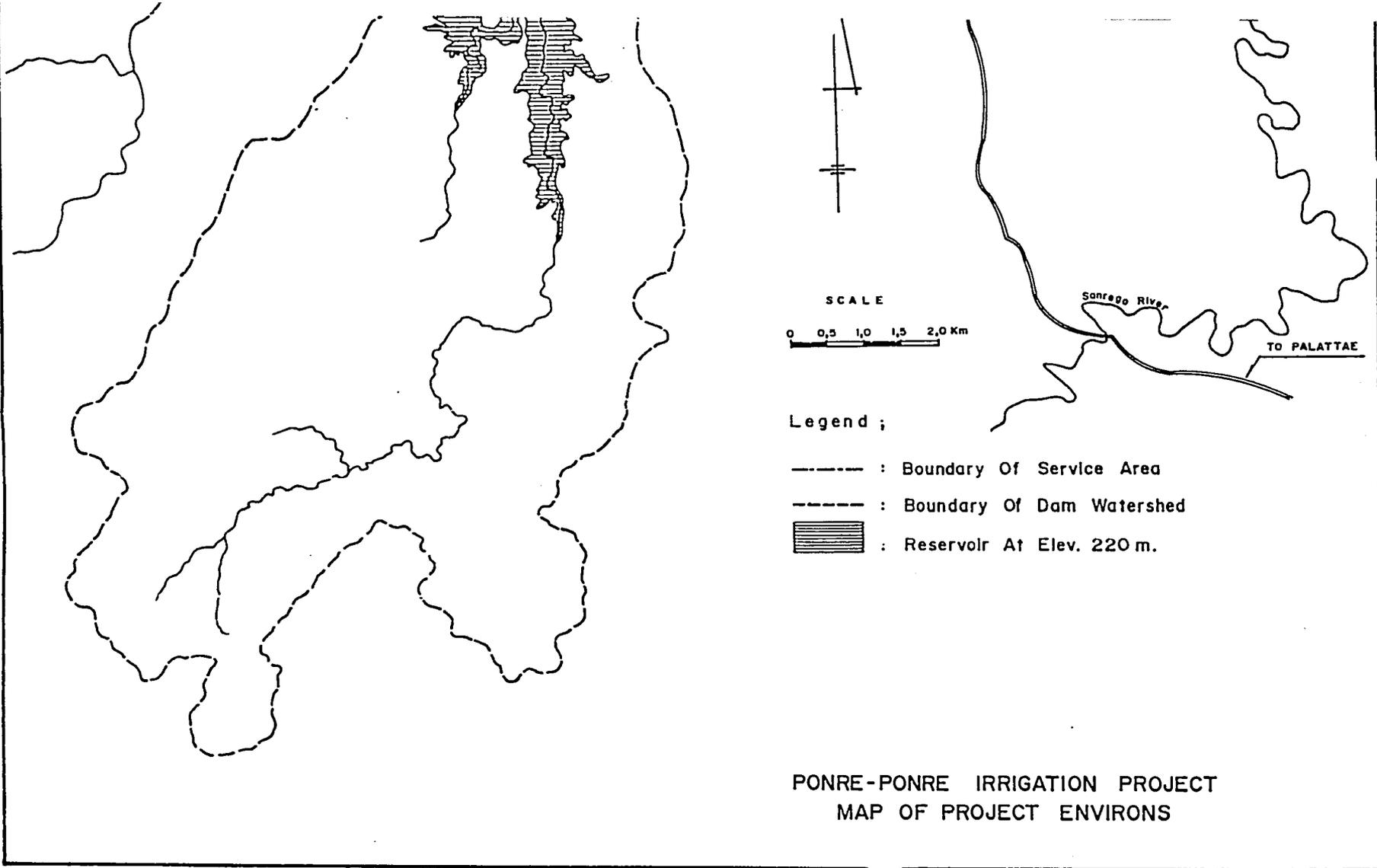
Kesimpulan

Penilaian lingkungan terhadap proyek Ponre-Ponre dan Selli-Coppobulu adalah merupakan kelanjutan dari pada studi-studi teknis lainnya yang diharapkan dapat berjalan berdampingan. Tim studi lingkungan mempunyai harapan untuk dapat berhubungan langsung dengan semua individu tanpa mengindahkan sifat hubungannya terutama yang mempunyai informasi dasar tentang sumber daya dan pemamfaatannya diareal proyek. Selain itu juga diharapkan, bahwa para peserta pembahasan dapat memberikan saran/masukan yang secara khusus mempunyai kaitan dengan lingkungan, atau bila mungkin dapat dalam bentuk tulisan dan menyampaikannya kepada ketua team studi untuk proyek Ponre-Ponre dan Selli-Coppobulu.

Ujung Pandang, December 1989



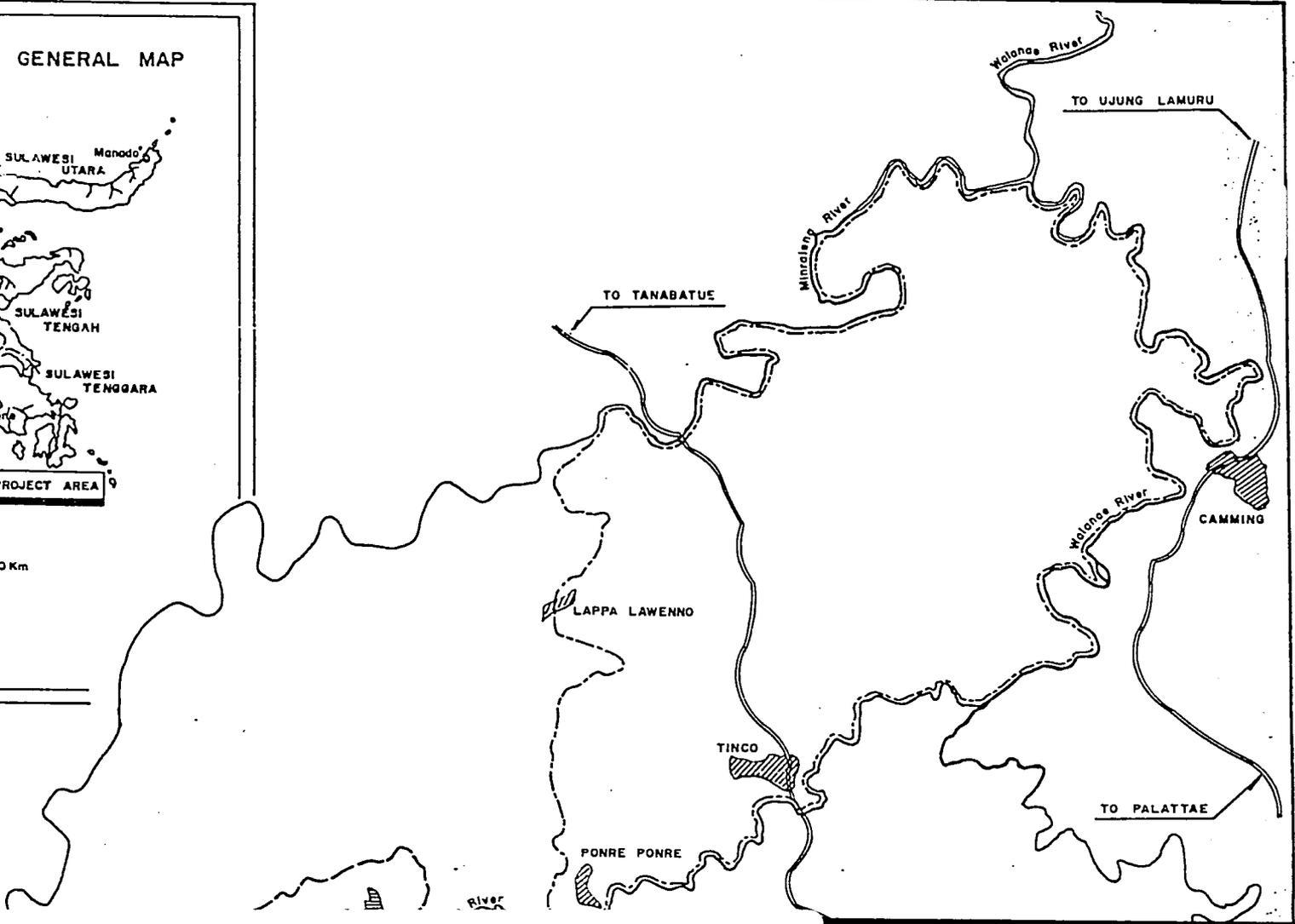
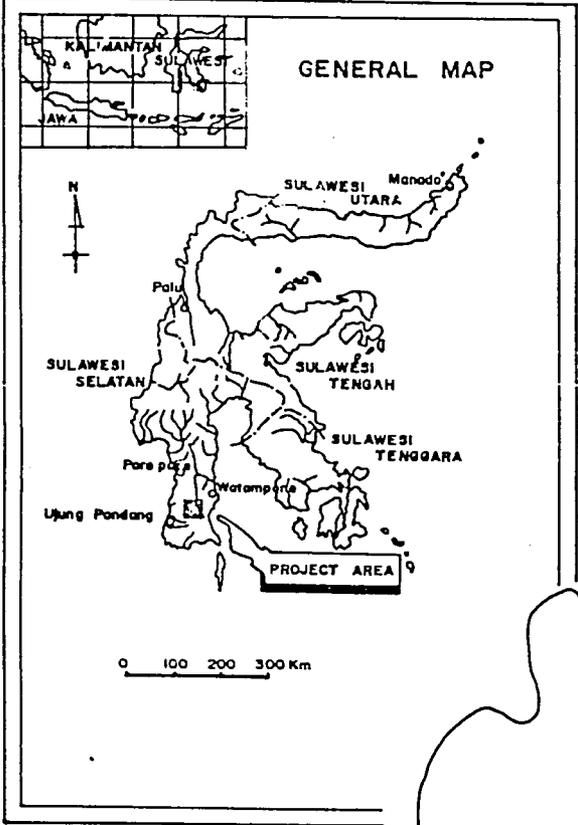
Ir. H. Syamsul Arida, Dipl.HE
Nip:110015535



PONRE-PONRE IRRIGATION PROJECT
MAP OF PROJECT ENVIRONS

FIGURE 1

1/2



101

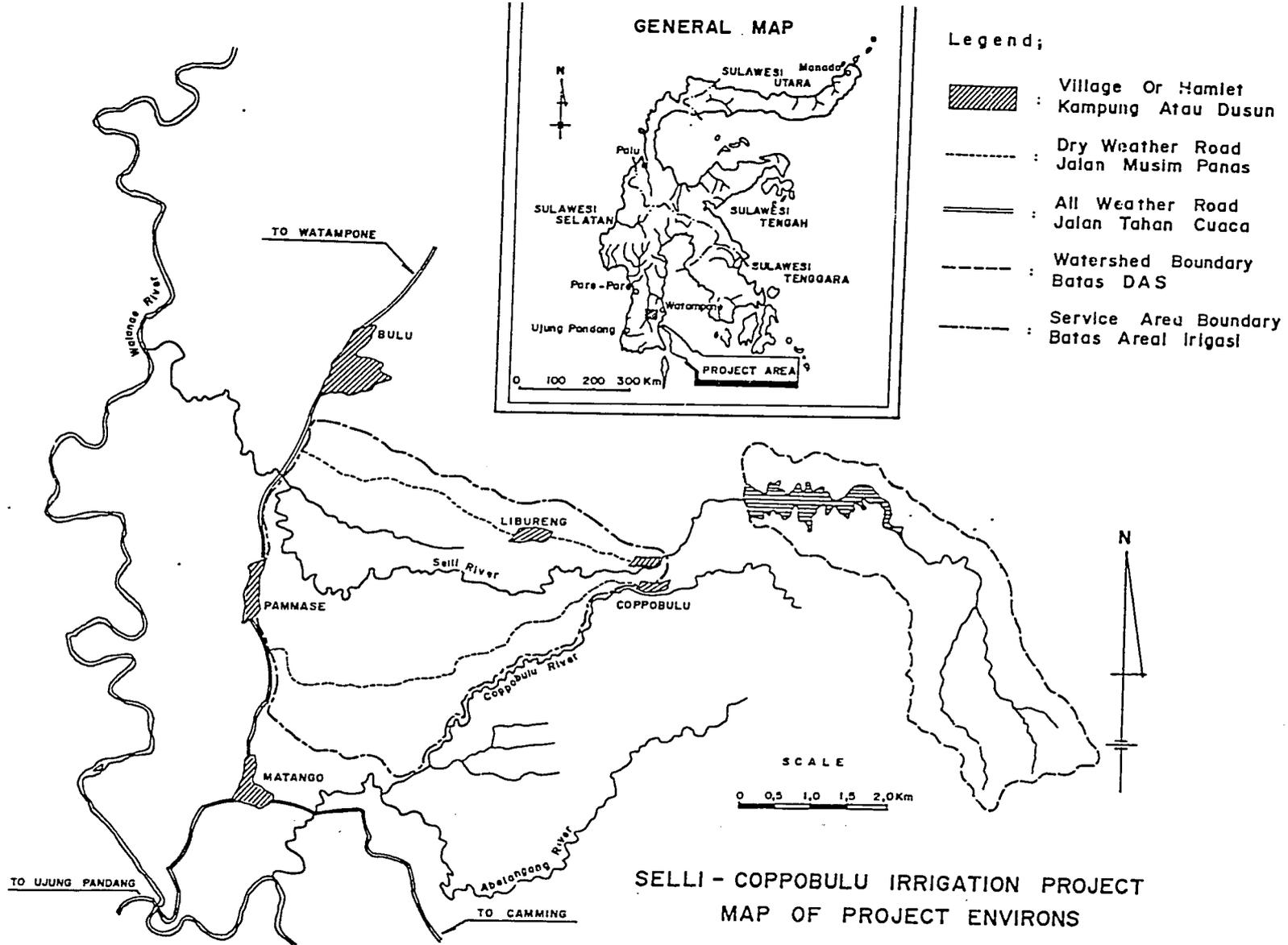


FIGURE. 2

BUPATI KEPALA DAERAH TK. II BONE

Nomor : 005/2369/PU.

Watampone, Desember 1989.-

Perihal : U N D A N G A N.

Kepada Yth.:

Bapak/Ibu/Sdr

.

di -

T e m p a t .-

Dengan hormat,

Berdasarkan Surat Kepala Dinas Pekerjaan Umum Propinsi Sulawesi Selatan Nomor UM 02 05/PISS/235/XI/89 tanggal 30 Nopember 1989 tentang permintaan tempat penyelenggaraan Rapat Koordinasi Pelaksanaan Environmental Scoping Session (Analisa Dampak Lingkungan) dalam rangka rencana bentuk USAID untuk pembangunan Irigasi Penre-Penre (Kec. Libureng) dan Selli - Coppobulu (Kecamatan Lappariaja), maka untuk dengan ini kami mengundang Saudara untuk menghadiri rapat dimaksud yang Insya - Allah akan dilaksanakan pada :

H a r i : S a b t u

T a n g a l : 9 Desember 1989

P u k u l : 09.30

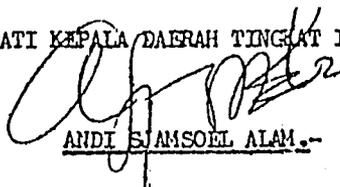
T e m p a t : Ruang Pola Kantor Dupati Kepala Daerah Tingkat II bone.

Diharapkan agar masing-masing Instansi menyiapkan data-data yang diperlukan yang berkaitan erat dengan kondisi lingkungan.

Demikian undangan ini disampaikan kepada Saudara dengan harapan dapat diikuti sampai selesai dan diminta sedapat mungkin tidak diwakili.

Atas perhatian Saudara diucapkan banyak terima kasih.-

BUPATI KEPALA DAERAH TINGKAT II BONE, *ds*


ANDI SAMSOEL ALAM.-

CATATAN :

Acara terlampir.

JADWAL PELAKSANAAN ENVIRONMENTAL SCOPING SESSION
 RENCANA IRIGASI PONRE-PONRE DAN SELLI-COPPOBULU.

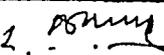
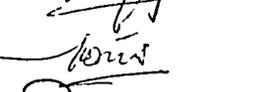
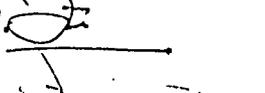
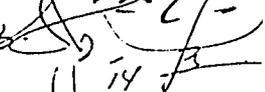
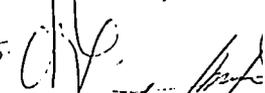
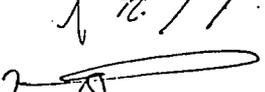
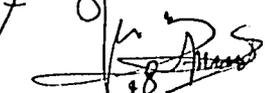
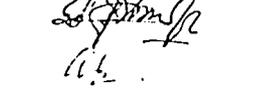
Tanggal : 9 Desember 1989

<u>J a m</u>	<u>A c a r a</u>	<u>Pembawa Acara</u>
10.00	Pembukaan	Pengarahannya Acara
10:00 - 10:10	Sambutan dan Pengarahannya	Pemda Tkt. II Bone
10:10 - 10:30	Maksud dan tujuan Environmental Scoping Session	Harza Consultant/- Proyek
10:30 - 11:45	Penjelasan dari Komosi Lingkungan USAID	USAID - JAKARTA
10:45 - 11:00	Penjelasan tingkat tentang rencana Proyek	P r o y e k
11:00 - 12:00	Pembahasan Dampak Lingkungan di D.I. Ponre-Ponre	Pengarahannya Acara
12:00 - 13:00	Istirahat /makan Siang	Panitia
13:00 - 14:00	Pembahasan Dampak Lingkungan di D.I. Ponre-Ponre (lanjutan)	Pengarahannya Acara
14:00 - 14:15	Istirahat /Coffee Break	Panitia
14:15 - 16:00	Pembahasan Dampak Lingkungan di D.I Selli-Coppobulu	Pengarahannya Acara
16:00 - 16:10	Kesimpulan	Pengarahannya Acara
16:10	P e n u t u p.	

DAFTAR HADIR PESERTA ENVIRON MENTAL SCOPING SESSION
DALAM RANGKA PEMBANGUNAN IRIGASI PONRE-PONRE
DAN IRIGASI SELLI - COPPOBULU.

TANGGAL : 9 DESEMBER 1989

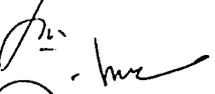
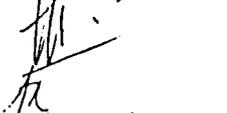
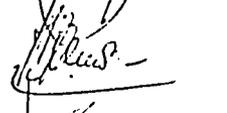
TEMPAT : WATAMPONE

NO.	NAMA PESERTA	INSTANSI	TANDA TANGAN
1.	Abdul Kadir	Kandyp Ayam	2. 
2.	A. M. Syarifuddin	Kandyp Perindustri	2. 
3.	el. Issah	Putriana Panca	3. 
4.	Azis Panda	Kantor Statistik	4. 
5.	H.A.M. KAWAN	Ktr Pertanian Ktr. Pon	5. 
6.	Syamsuddin	Ktr. Dep. Pertanian	6. 
7.	M. Hatta	Kab. Bone	7. 
8.	Marsani	Sampul	8. 
9.	Muhammad Fauz J.	Kab. Bone	9. 
10.	Muh. Koro P.	Staf COK. Walaue	10. 
11.	A. ALTI	Sek. Des Selli	11. 
12.	A. Imaail JAHIR	KAB. MARIKUPATI	12. 
13.	A. ACHMAD	KABES BUNG	13. 
14.	ABD. HARIDIS	KABES TUNGKE	14. 
15.	A. S. Burhanuddin BA	Dinas Perikanan	15. 
16.	Procionoel	Kep. Desa Walaue	16. 
17.	U. Syamirun.	Abdes Surtaya	17. 
18.	KADU RAHMAN.	SEK DES Selli/Kapri	18. 
19.	Dominicus P.	Camat Siliwangi	19.
20.	SYAMSU. MADE. BA	Ekonomi	20.
21.	ABDUL. MASHUR. BA	DEKOP. W. BANT	21.

DAFTAR HADIR PESERTA ENVIRON MENTAL SCOPING SESSION
DALAM RANGKA PEMBANGUNAN IRIGASI PONRE-PONRE
DAN IRIGASI SELLI - COPPOBULU.

TANGGAL : 9 DESEMBER 1989

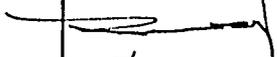
TEMPAT : NATAMPONE

NO.	NAMA PESERTA	INSTANSI	TANDA TANGAN
22.	Nengah Suraga	JMA - Consulting	
23.	JULIAN JOENDAWI, PH	INDEC Consulting	
24.	Hijia Nosa	PSL - UMHAS	
25.	Gurawan Wijaya	USAID - Jakarta	
26.	A. ABD. GLEBON	Kebes Toppale	
27.	NORMAN. P.	BAPPEDA TH 5 BONE	
28.	Mudjib Yunus	- Pub. -	
29.	ALIMUSAKKUR	- Biskop -	
30.	Almuddin	Pem. Um.	
31.	U. Y. H. /	Kep. Banteng	
32.	A. Rajab Ibrahim	Banking Dept. Banteng	
33.	B. S. P. S. H. A. N. S. Y.	Banking Dept. Banteng	
34.	Kasar Ramli	Kan. Pip. Sosial	
35.			
36.	A. ABD. GLEBON	Kebes Toppale	
37.	A. Anwar.	BIS Tan.	
38.	M. Kamari	SSIMP.	
39.	SAMSIAH Ras	Dinas Pengairan	
40.	Abd. Wahab	U. P. P. D. N. S. / SSIMP	
41.	KAREL	SSIMP	
42.	Soeperto	SSIMP	
43.	Rahim Abdullah	Kep. P. U. Cabang Dinno Wetampone	

**DAFTAR HADIR PESERTA ENVIRON MENTAL SCOPING SESSION
DALAM RANGKA PEMBANGUNAN IRIGASI PONTRE-PONTRE
DAN IRIGASI SELLI - COPPOBULU.**

TANGGAL : 9 DESEMBER 1989

TEMPAT : WATAMPONE

NO.	NAMA PESERTA	INSTANSI	TANDA TANGAN
44.	Mr. Noel Corcoran	LISAID / HARZA	
45.	Mr Piter AHS	HARZA	
46.	Mr Piter AHS Peter Neame	HARZA	
47.	Abdulrah U.	Pemerintah RI Keb. Sah. & Baku	
48			

PROJECT ACTIVITIES

CONSTRUCTION PHASE

OPERATIONAL PHASE

	Land Acquisition	Borrow Areas	Diversion Structure	Reservoir Inundation	Water Distribution System	Access Roads		Downstream Flows	Reservoir Operation	Irrigation	Access Roads
<p><u>WATER RESOURCES</u> :</p> <p>Hydrology</p> <p>Water Quality</p> <p>Groundwater</p> <p>Water Use</p> <p>- domestic</p> <p>- agricultural</p>											
<p><u>LAND RESOURCES</u> :</p> <p>Soils</p> <p>Land Use Patterns</p> <p>Farming Systems</p>											
<p><u>BIOLOGICAL RESOURCES</u> :</p> <p>Vegetation</p> <p>Wildlife</p> <p>Domestic Livestock</p> <p>Fish</p> <p>Plant/Animal Pests</p>											
<p><u>SOCIOECONOMIC RESOURCES</u> :</p> <p>Demography</p> <p>Settlement Patterns</p> <p>Infrastructure</p> <p>Social Organisation</p> <p>Land Ownership</p> <p>Health</p> <p>Cultural Aspects</p> <p>Economics</p>											

**JADWAL ACARA PELAKSANAAN ENVIROVMENTAL SCOPING SESSION
RENCANA IRIGASI PONRE-PONRE DAN SELLI-COPPOBULU**

Tanggal : 9 Desember 1989

Tempat : Ruang Pola kantor Bupati Bone

<u>J a m</u>	<u>A c a r a</u>	<u>Pembawa Acara</u>
10:00	Acara dimulai	Pengarah Acara
10:00 - 10:10	Sambutan Pengarahan serta secara umum acara Enviromental Scoping Session	Pemda Tk.II Bone
10:10 - 10:30	Maksud dan tujuan Enviromental Scoping Session	TA.Consultant
10:30 - 11:45	Penjelasan dari Komisi Lingkungan USAID	USAID- Jakarta
10:45 - 11:00	Penjelasan singkat tentang rencana Proyek	TA Consultant
11:00 - 12:00	Pembahasan Dampak Lingkungan di D.I. Ponre-Ponre	Pengarah Acara
12:00 - 13:00	Istirahat /makan Siang	Panitia
13:00 - 14:00	Pembahasan Dampak Lingkungan di D.I. Ponre-Ponre (lanjutan)	Pengarah Acara
14:00 - 14:15	Istirahat /Coffee Break	Panitia
14:15 - 16:00	Pembahasan Dampak Lingkungan di D.I Selli-Coppobulu	Pengarah Acara
16:00 - 16:10	Kesimpulan	Pengarah Acara
16:10	P e n u t u p.	

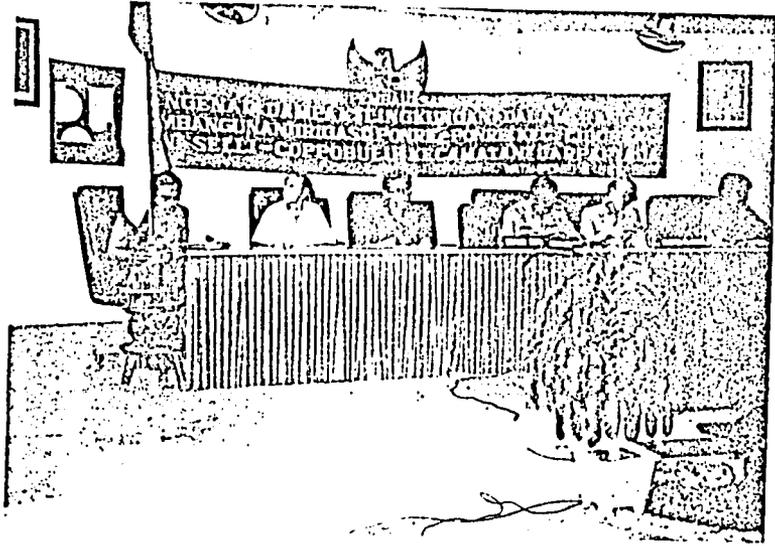


FOTO 1 : Dari kiri kekanan Rahim Abdullah, BE, Kepala Kantor Pembantu Sub Dinas Wilayah II, DR. Peter Ames, Ir. Soeprapto B., MSc. Keduanya team dari Ujung Pandang, Drs. B.Paturungi, Sekwilda Tkt. II Bone, Tadjuddin, SH, Pelaksanan Tugas Kepala Kejaksaan Bone dan paling akhir adalah Ir.M. Rusli dari BAPPEDA Bone.

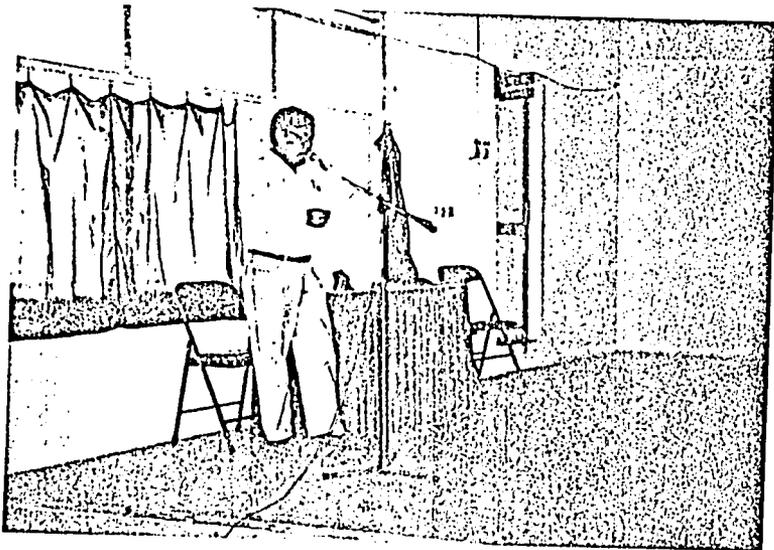


FOTO 2 : Drs. Abd.Wahab M.Th. sedang membacakan susunan acara Environmental Scoping Session.

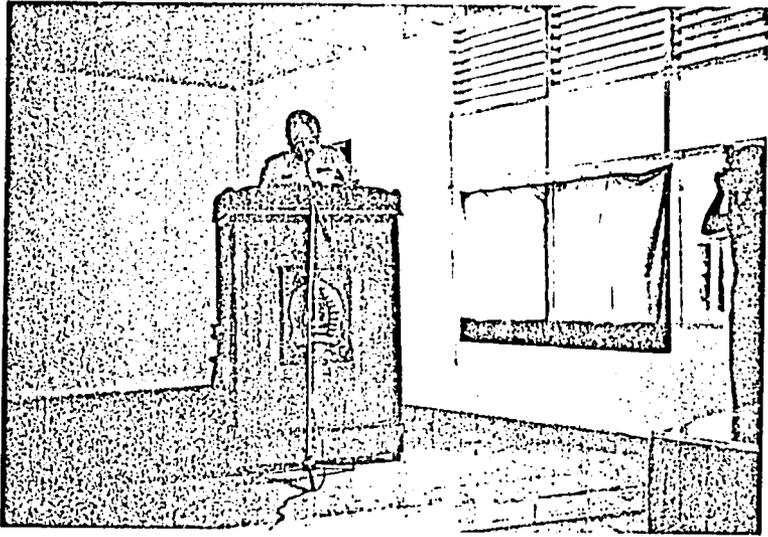


FOTO 3 : Drs. H.B. Paturungi Sekwilda Tkt.II Bone sedang memberikan sambutan mewakili Bapak Bupati Bone yang berhalangan hadir.

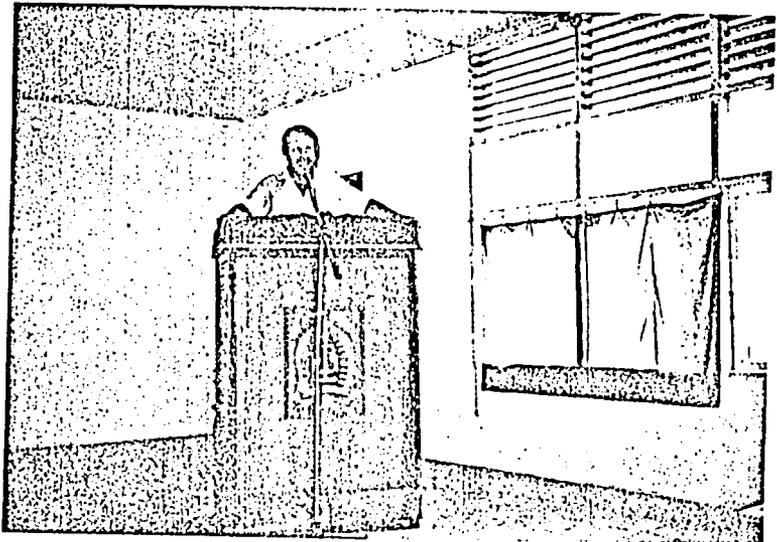


FOTO 4 : DR. Peter Amos Pakar Lingkungan dari Harza Consultan sedang memberikan penjelasan tentang maksud dan tujuan Environmental Scoping Session.

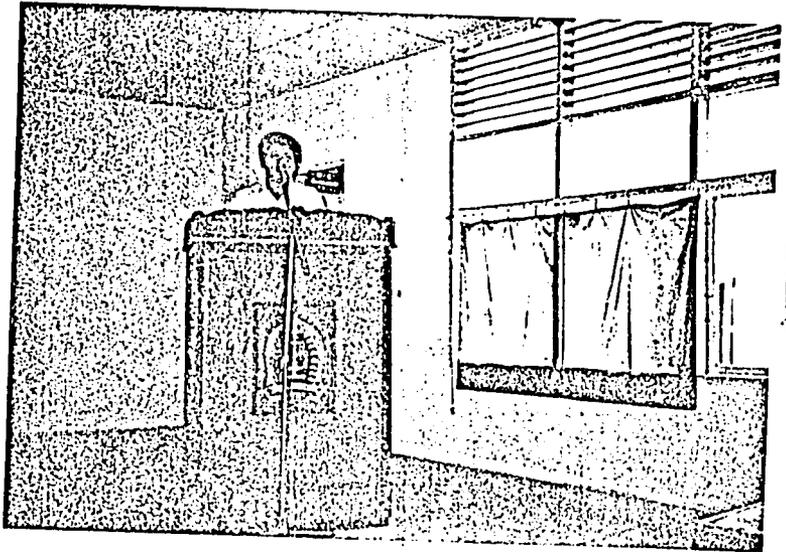
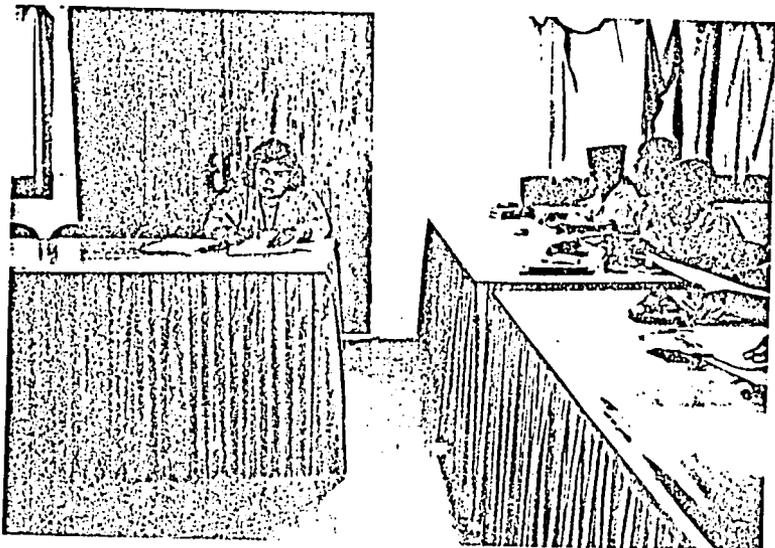


FOTO 5 : Ir. Gunawan Vidjaya dari Kedutaan Amerika Serikat/ USAID Jakarta sedang memberikan penjelasan tentang peraturan dan prosedur pelaksanaan Evaluasi Lingkungan.





6

FOTO 667 : Para peserta yang berasal dari Instansi terkait dan pemuka masyarakat sedang asyik mempelajari materi yang akan dibahas.



7

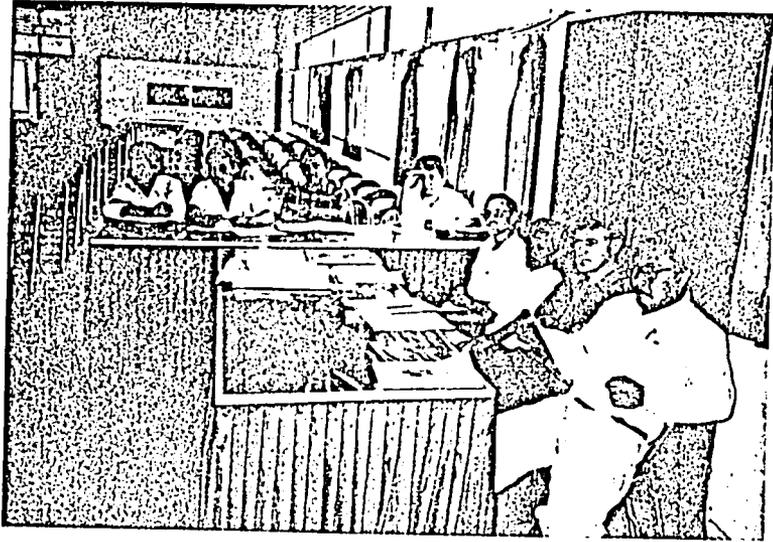


FOTO 8 : Para anggota team yang datang dari Ujung Pandang ber-
 turut turut dari kiri ke kanan : Ir. Jullian Joewono
 PH dari PT Indec Consulting Bandung, Ir. Nengah
 Suraga dari PT. Jasa Mitra manunggal Bandung ,
 DR. Alfian Nur, MSc. dari PSU UNHAS, Ir. Gunawan
 Widjaya dari USAID Jakarta, DR. Peter Neame dari
 Harza Consultant, Ir. Karel Paranoan dari SSIMP,
 Dennis Noel Corcoran, PE dari Harza Consultant dan
 Drs. Abd.Wahab H.TH. dari SSIMP.



FOTO 9 : Ir. Soeprapto B, MSc. sedang memberikan jawaban kepa-
 da bebera penanya sedang disamping kiri beliau duduk
 Ir. M. Rusli dan disamping kanan berturut turut -
 DR. Peter ames dan Rahim Abdullah, BE.

2

5

120