PD AAG-516 already abstracted

(2)

497-0266

UNCLASSIFIED
CLASSIFICATION

PROJECT EVALUATION SUMMARY (PES) — PART I

Report Symbol U-647

1. PROJECT TITLE	2. PROJECT NUMBER	3. MISSION/AID/W OFFICE
Science and Technology: Practical Applications for Development	497-0266	USAID/Indonesia

4. EVALUATION NUMBER (Enter the number maintained by the reporting unit e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY) 80-11

☒ REGULAR EVALUATION ☐ SPECIAL EVALUATION

5. KEY PROJECT IMPLEMENTATION DATES			6. ESTIMATED PROJECT FUNDING	7. PERIOD COVERED BY EVALUATION
A. First PRO-AG or Equivalent FY 78	B. Final Obligation Expected FY 80	C. Final Input Delivery FY 83	A. Total $ 8,700,000 B. U.S. $ 6,500,000	From (month/yr.) Jan. 1978 To (month/yr.) Apr. 1980 Date of Evaluation Review

8. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR

A. List decisions and/or unresolved issues; cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., airgram, SPAR, PIO, which will present detailed request.)	B. NAME OF OFFICER RESPONSIBLE FOR ACTION	C. DATE ACTION TO BE COMPLETED
1. Amendment of Contracts or PASA's to provide grant funding (rather than loan funding) for non-academic (short-term) training abroad for Activity "3" and Activity "4-5", and for new program details (Activity "4-5").	W.H. Littlewood	July 1, 1980
2. Revision of "Management and Evaluation Committee" documents and membership list, as necessary.	S.B. Joedono	May 15, 1980
3. Report on GOI contributions through March 31, 1980, and projected contributions for following GOI fiscal year.	S.B. Joedono	August 1, 1980

9. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS

- ☐ Project Paper
- ☐ Financial Plan
- ☐ Logical Framework
- ☐ Project Agreement
- ☐ Implementation Plan e.g., CPI Network
- ☐ PIO/T
- ☐ PIO/C
- ☐ PIO/P
- ☒ Other (Specify) Contract amendment
- ☒ Other (Specify) PASA amendment

10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT

- A. ☐ Continue Project Without Change
- B. ☐ Change Project Design and/or ☐ Change Implementation Plan
- C. ☐ Discontinue Project

11. PROJECT OFFICER AND HOST COUNTRY OR OTHER RANKING PARTICIPANTS AS APPROPRIATE (Names and Titles)

William H. Littlewood, Science and Technology Advisor

S. B. Joedono, Assistant Minister V, Ministry of State for Research and Technology

12. Mission/AID/W Office Director Approval

Signature: Walter Bollinger

Typed Name: Thomas C. Niblock

Date: July 17, 1980

Clearances:

EHR:RWSchmeding, PRO:RZimmerman, PRO:REllert-Beck, DD:WGBollinger

AID 1330-15 (3-78)

13. Summary

The "Science and Technology" loan/grant project consists of several activities, related in that they all concern the application of science and technology to Indonesia's development problems and are coordinated through the Minister of State for Research and Technology (Prof. Dr. Ing-B. J. Habibie).
They are as follows:

General Activities
"A" : Science, Technology and Research Policy
"B" : Manpower Development in R&D Management

Specific Activities
"2" : Alternative Energy Sources for Rural Areas
"3" : Aquatic Resources Development
"4-5" : Land-Use and Geological Mapping, Geological Hazards (Natural Disaster) Mitigation, and Remote Sensing

Note: Project Paper Activities "1" on Standardization, and "6" on Weather Forecasting for Farmers and Fishermen were dropped because of lack of funding. (The Project Paper purposely developed more activities than necessary, in case unforeseen difficulties caused an activity dropout).

The objectives of these Activities are summarized in Section 18, below.

The Grant Project Agreement was signed February 3, 1978, for the initial $600,000 FY78 allotment (out of $1,500,000 projected) and in early 1979 a second allotment of $250,000 grant funds was received from AID Washington, D.C. The balance of $650,000 grant funds has not yet been allotted by AID/W.

The Loan Agreement of $5,000,000 for a five year project was signed April 12, 1978. Ninety days later, the general conditions precedent for the Project were met (July 10, 1978) primarily the establishment by Ministerial Decree of a Management and Evaluation Committee. Work on specific conditions precedent, scopes-of-work and PIO/Ts commenced soon afterwards. These specific conditions precedent were completed in 1978 for Activities "A" and "B", and Activities "3" and "4-5", the latter being a combined activity, under one PASA with the U. S. Geological Survey. The Indonesian decision for a proposal for Activity "2" (Alternative Energy R&D) was stalled (see Section 16, Inputs) throughout 1979, but in early 1980 a proposal was developed by BPPT (Agency for Development and Application of Technology), and has now been officially delivered to USAID (received April 10, 1980).

While awaiting the Loan Agreement "conditions precedent" to be met in early 1978, two subactivities which could not wait were arranged through separate PIO/Ts and contracts, using grant funds. These were a National Food and Nutrition Workshop held in July, as part of Activity "A", and three R&D Management Workshops under Activity "B". U.S. inputs were participation of a National Academy of Sciences (NAS) team of 11 persons. Another joint workshop was held at the BPPT on "Technology for Increasing Rural Productivity in Indonesia" in June, 1979. In 1979, longer term (i.e. to end of project) contracts were completed with the National Academy of Sciences, and the Denver Research Institute, for Activities "A" and "B" respectively. A decision was reached in late 1979 to establish an Activity "A", joint, high-level steering committee totalling six persons, to further guide the develcpment of future joint workshops, special studies, etc. GOI approval is still pending for both membership and a first meeting, to be held at the East-West Center in Honolulu this May, as well as formal decisions on future workshops, special studies, etc. (see Section 16, Inputs).

The proposal for Activity "2" (Alternative Energy) names BPPT as the counterpart agency with a program divided into five subactivities with five institutions, coordinated and administered by BPPT. An Activity "2" coordinator has now been designated by BPPT. Although not clear in this "first draft" proposal, USAID understands there will also be a training role incorporated in the Activity "2", with trainees expected to move into the future PUSPIPTEK (National Science Center) Energy Research Laboratory. The USAID S&T Project Manager has reviewed the draft proposal, and finds it follows both AID guidelines and the specific Activity objective.

A contract for Activity "3" (Aquatic Resources Development) was made with the University of Washington (Seattle, Washington) in late 1979, and the long-term (3 year) on-site (Ambon) representative, Mr. Charles L. Angell, arrived in December, 1979. The project leader, Dr. Lynwood S. Smith, College of Fisheries, University of Washington, also visited Ambon in December, and specialists (marine librarian, oceanographer, etc.) have visited or will visit soon for training and program development. Four academic degree candidates have been identified and are in English language training, preparatory to entering University of Washington in September, 1980. As the University of Washington contract did not require all the funding resources earmarked for the activity, the balance is being used for miscellaneous local activities which contribute to the activity objective, e.g., English language training and coral reef research project development. There are funding and administrative problems in the Ministry of Education/University of Pattimura side of the Activity (see Section 16, Inputs).

Activity "4 (Remote Sensing) - 5 (Geological and Land-Use Mapping, and Geological Hazard Mitigation)" is well underway, with a PASA (inter-agency contract) signed between AID and the U.S. Geological Survey (USGS) in early 1979. The first long-term USGS consultant arrived in June, 1979, and the second in December. It has now been decided that a third long-term consultant, a volcanologist to help strengthen a field station near Mount Merapi, Java, will be required. Various short-term specialists are periodically arriving, and equipment, such as "dry-tilt" instrumentation for measuring volcanic "swell", gas detectors and portable seismometers have been procured and installed. There have been administrative delays and problems in this Activity, (see Section 16, Inputs) resulting primarily from the split-up of the original counterpart, the Geological Survey of Indonesia, into three directorates and one center, each with their own budget and program. Therefore, inter-directorate matters, such as office or secretarial support for the USGS senior representative, have had budget and administrative problems. Solutions are being found or sought.

The land-use mapping aspects still need strengthening, such as development of geological data useful to land-use mapping activities in other GOI agencies, for example the Directorate of Land Use Planning, the Agrarian Director General, Ministry of Home Affairs.

The geological hazards part of the activity is focusing on volcanoes, earthquakes and landslides.

The PASA will be revised soon to substitute grant funds for loan funds for short-term training, and to incorporate other administrative changes.

After a hiatus of eleven months, the overall Science and Technology Project "Management and Evaluation Committee" resumed its monthly meeting schedule in March, 1980. (see Section 16, Inputs). Membership includes the primary project counterparts, Dr. S.B. Joedono as Chairman and representative for the State Research and Technology Minister, a BAPPENAS representative (Dr. Astrid Susanto), and the USAID project manager and representative (Mr. Littlewood).

An organizational diagram of the Science and Technology project is attached (Attachment #1). The "Project Design Summary - Logical Framework" is Attachment #2, and a summary of the Food and Nutrition Workshop is Attachment #3. Attachment #4 is an attempt to show obligations and disbursements of funds provided under AID loan and grant funds for this project. (Note: A similar breakdown from the GOI side would be useful). Attachment #5: Project Sequence of Events; A. General, B. Specific Activities, C. Bar Chart.

14. Evaluation Methodology

This second annual evaluation is the first evaluation held cooperatively with the S&T Project's Management and Evaluation Committee. The concept is that the recipients of the technical assistance under this project -represented by the Committee members- are as equally interested in whether the assistance is achieving the project objectives as the donor agency, A.I.D. They equally can recommend solutions to problems, raise suggestions for improvements, and institute procedures or amendments to make project execution more efficient and productive.

The methodology includes:

1. Review of files
2. Periodic meetings of the Management and Evaluation Committee
3. Visits to project sites
4. Visit to USAID by project leaders
5. Continual dialogue between GOI, USAID and contractor representative
6. Special meetings

15. External Factors

There are no major changes in the project foreseen in the near future. The organizational division of the former Geological Survey of Indonesia into four equal-level units has caused some administrativ and budgetary problems, which are being addressed. (see Section 16, Inputs).

16. Inputs

A. General Inputs:

Inputs (see Logical Framework, Attachment #2) are as planned, although there have been delays of a bureaucratic nature on both sides, described below.

B. Specific Input Problems

Overall:

1. Delay by AID/W in allotting remaining $650,000 grant funds.
2. Confusion in latter half of 1979 and early 1980 on Chairmanship of Management and Evaluation Committee and eleven month hiatus in monthly Committee meetings. (Problem clarified since March, 1980 Committee meeting).

Specific:

Activity "A" : Delay in decisions on establishment of Activity Steering Committee, and next workshops and specialized studies.

Activity "B" : Delay in contracting procedures; (both proposals were over budget). Contract signed December 1979.

Activity "2" : Delay of 16 months in GOI decision on specific topic(s) and institution(s) to be addressed by Activity. (Resolved in April, 1980).

Activity "3" : Delay in authority designation and in counterpart funding at University of Pattimura. UNPATTI leadership is not clear, and "DIP" proposals for counterpart funds and activities are insufficient.

Activity "4-5" : Delay (12 months) by USGS in response to request for gas detector tubes. Delay in office and travel support to USGS senior geologist for administrative matters. Delay in decisions on fully utilizing second long-term USGS representative.

17. Outputs (as of April 16, 1980)

Described below are activities related to the general outputs.

1. One science policy (Food and Nutrition) established.
2. About 20 S&T institutions or research projects better managed through the training of 70 administrators 1978, and two study tours (9 persons) 1978.
3. Five bilateral linkages established: (PEPUNAS/NAS; LIPI/NAS/ Ministry of Agriculture; LON/UNPATTI/Univ. of Washington; LIPI/Denver Research Institute; USGS/Four Geological Directorates).

4. Volcanological and earthquake detection equipment assisting safety of life and property in several rural locations.
5. One M.Sc. degree about to be awarded (June, 1980).
6. Volcanological/seismological equipment delivered.
7. No maps, charts, etc. yet produced.
8. Two science policy workshops and one volcanological planning workshop completed. The former was publicized.
9. Only volcanological and earthquake detection equipment demonstrated at this point.
10. No new small industry job opportunities generated (except indirectly through better management of R&D projects), through Activity "B".

Specific Outputs by Activity follow:

Activity "A" (S&T Policy):

1. "Food and Nutrition" Policy Workshop completed, with results (Attachment #3) incorporated into Third Five Year Plan.
2. "Technology for Increasing Rural Productivity in Indonesia" Workshop completed and report published, with results intended to be basis for subsequent workshops, and PEPUNAS (National Research Policy Committees) guidance.
3. Study tour (seven people) to U.S. (December, 1978) completed.

Activity "B" (R&D Management):

1. Three R&D management training workshops held in 1978, with 70 administrators trained.
2. Long-term (academic) trainees identified.
3. Plans for 1980 R&D management training workshops completed, emphasizing greater Indonesian participation in the teaching aspects.

Activity "2" (Alternative Energy R&D): No outputs yet.

Activity "3" (Aquatic Resources Development):

1. Study tour completed (two persons).
2. On-site, long-term consultant is at Activity site.
3. Four academic-degree (M.Sc.) candidates identified and in intensive English language training.
4. Marine science library design completed. First phase equipment was completed. A librarian candidate to receive BIOTROP internship for six months prior to further training at University of Washington for three months. Program ready to be implemented.

Activity "4-5" (Geology; Hazard Mitigation; Remote Sensing):

1. Three trainees completed short-term training (1979).
2. Two on-site, long-term consultants are at Activity site.
3. Gas detector instrumentation and portable seismometers delivered to Volcanological Directorate.
4. "Dry-tilt" equipment to measure pre-eruption swelling of volcanoes installed on Mount Merapi and Mount Kelut, Java. Personnel trained in maintenance and use.
5. Detailed program outline completed for further activities.
6. Limited review and advice given: (two abstracts and several maps).
7. Academic (M.Sc. degree) candidate "picked up" from another project. (Questions remains as to whether support will be through Ph.D. degree).

18. Purpose

A. Overall Purposes:

1. "To provide a strong indigenous capacity in selected GOI scientific and technological institutions to plan and conduct Research and Development (R&D) activities in ways that will benefit Indonesia's majority, and offer opportunities for increased productivity, employment, income, and improvements in quality of life."

2. In addition; the August 11, 1977 letter from BAPPENAS (Saleh Afiff, Deputy Chairman) asking USAID for loan and grant funds for a project on "Science and Technology" states the objective as:
" .... To strengthen indigenous capacity in research, science and technology."
and,
"The main thrust of the Project is to strengthen inter-Ministry and inter-Agency policy and program development, and to increase research management capability through education and in-service training."

B. Overall Counterparts:

a. USAID (represented by the Science and Technology Advisor)
b. Minister of State for Research and Technology (represented by the Chairman of the Science and Technology Project "Management and Evaluation Committee").

C. General Commentary

Science, technology and research project priority with the GOI remains high, as manifested by the appointment and widespread activities of the dynamic Minister of State for Research and Technology, Dr. B. J. Habibie, the establishment of a new operational agency under his chairmanship (BPPT, Agency for Development and Application of Technology), on-going construction of a ten-unit technical laboratory center (PUSPIPTEK), and the activities of five national R&D priority committees known as "PEPUNAS", four of which directly relate to the U.S. Congressional Mandate for technical assistance (I. Basic Human Needs, II. Energy and Natural Resources, III. Industrialization for Employment Generation, and V. Socio-Economic and Cultural Aspects. Only Committee IV, Defense and Security, falls outside AID priorities).

The third five-year development plan, REPELITA III, has "science, technology and research" as one of its 18 major budgetary categories. In the first year of REPELITA III (FY1979-80) the GOI has budgeted $21.6 million in the Routine Budget and $93.0 million in the Development Budget, for a total of $114.6 million. This represents about 1.7% of the development budget, and 1.0% of the total budget for the GOI fiscal year 1979/80. Due to changes in subsector attributions, it is not possible to make direct comparisons with previous budgetary years.

It should also be noted that many other of the major budgetary categories, such as agriculture, health and industry, include science, technology and research as major components.

The progress toward EOPS condition is described in Sections 13 and 17. It is too early in the project to discuss overall achievement, or changes in EOPS.

D. Specific Objectives

This "umbrella" project has individual activities, whose objectives and purposes may be summarized as follows:

Activity "A", Science, Technology and Research Policy Development

Objective : Development of science, technology and research policies and programs (which benefit the average Indonesian), resolution of interagency issues, execution of special technical studies, etc., where "outside", objective, highly experienced expert opinion is useful to the Government of Indonesia (GOI).

Counterparts: U.S. National Academy of Sciences (NAS) and Office of the Minister of State for Research and Technology

Activity "B", Manpower Development in R&D Management

Objective : Development, increase and application of R&D management capabilities in Indonesia, at the national, institutional and project levels.

Counterparts: Denver Research Institute and the Indonesian Institute of Sciences (LIPI).

Activity "2", Alternative Energy Sources for Rural Areas

Objective : Conduct R&D or other activities (e.g., training) which would promote provision of indigenous, renewable, acceptable, and environmentally and economically feasible energy sources to rural areas and villages. Fossil fuels, (oil, gas and coal) are excluded, as well as large scale hydro-electric and nuclear energy sources. For Indonesia, emphasis might be on reducing rural consumption of kerosene and environmentally damaging firewood and charcoal. The alternative energy provided should assist in meeting basic human needs and in promotion of employment opportunities through development of rural, small-scale industry which has modest energy requirements.

Counterparts: U.S. institutions (to be determined) and the Agency for the Development and Application of Technology (BPPT).

Activity "3", Aquatic Resources Development

Objective : Working through and with LIPI/LON (National Institute of Oceanology), an activity objective is to build the capabilities of UNPATTI (Pattimura University, Ambon) and the LON/Ambon field station (on the UNPATTI campus at Poka, near Ambon) into a "Center of Excellence" for teaching, applied research, and other appropriate activities which benefit the aquatic-resource-dependent segment of the population of the eastern region of Indonesia (Mollucan and Irian Jaya areas). Emphasis is on education, R&D,

and technical assistance (extension services) by UNPATTI and LON/Ambon, in an integrated way, to the community's needs and welfare, particularly fishery and boat problems, the quality of the aquatic environment, seaweed and fish culture opportunities, study and maintenance of fish and bait stocks, improvement of fishing and culturing techniques, marine food and product processings, etc.

Counterparts: University of Washington and LIPI/LON-UNPATTI

Activity "4-5" (4. Remote Sensing, and 5a. Geological and Land-Use Mapping, and 5b. Geological Hazard Mitigation)

Objective : The objective of 5a is to provide rural planners with better tools for decision making, through improved and increased geological and land-use mapping. The objective of 5b is to decrease loss of life and property from various geological based hazards, that is earthquake, volcano, landslide, land subsidence, flood, tsunami, etc. by appropriate mitigation activity. Remote sensing (4) may be useful to reaching "5" objectives.

Counterparts: U.S. Geological Survey and the GOI Department of Mines and Energy's Director General of Mining. Technical implementation is under three Directorates (Mineral Resources, Environmental Geology, Volcanology) and the Center for Geological Research and Development. (Explanation: The four institutions originally made up the "Geological Survey of Indonesia (GSI)", identified in the Project Paper as the GOI counterpart institution). GOI technical coordination of the activity is through an official designated by the Director General of Mining. Currently, the Activity 5 Technical Coordinator is the Director of the Directorate of Mineral Resources.

19. Goal/Subgoal

The broader objective to which this Project contributes is: "Establish an indigenous, self-reliant scientific and technological community that is able to manage and exploit rationally Indonesian natural and human resources for optimum contribution to the country's development and the welfare of the majority of its citizens".

It is too early in the project to discuss specific achievement levels. Delays have been for bureaucratic reasons.

20. Beneficiaries

There is no change in "beneficiaries" from those described in the Project Paper Part III, Section C (pg. 54). It is too early in the project to measure overall achievement levels. See attachment 6 for Section 102(d) Criteria Evaluation.

21. Unplanned Effects

Communication inter agency communication and cooperation at technical working level increased, S&T-education, LIPI-UNPATTI.

22. Lessons Learned

The actual time to implement a highly complex science and technology project is greater than the theoretical (or perceived) time. The inflation rate will be greater than expected, and therefore funding shortfalls may occur late in the project.

23. Special Comments or Remarks

In late 1982, if the project is still going well but has not attained all of its objectives, consideration should be given to a no-cost extension. If inflation has eaten up funds faster than expected, additional funding should be considered.

Attachment #1: Flow Chart for Project 497-0266, "Science and Technology: Practical Application for Development".

Attachment #2: Project "Logical Framework" Matrix

Attachment #3: Analysis of Result of National Food and Nutrition Workshop, July, 1978.

Attachment #4: USAID Budgetary Report (as of April 16, 1980)

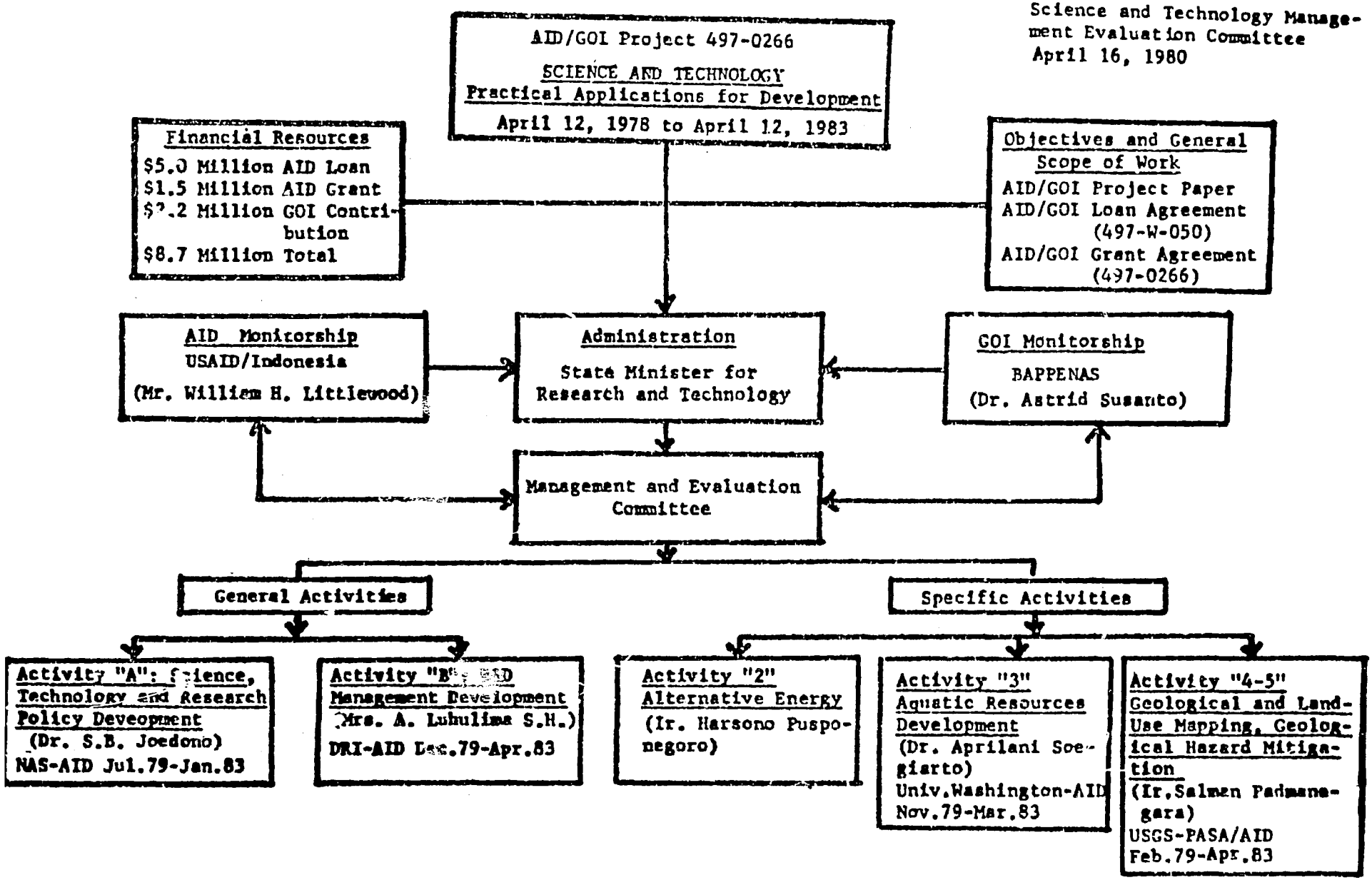
Attachment #5: Sequence of Events; Past and Planned:
A. General
B. Specific
C. Bar Chart

Attachment #6: Section 102(d) Criteria Evaluation

Attachment

PROJECT ORGANIZATIONAL CHART

Project 497-0266
Science and Technology Management Evaluation Committee
April 16, 1980



Attachment # 2
April 16, 1980

AID 1020-28 (1-73)

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Project Title & Number: Science and Technology Loan/Grant; Project No. 497-0164

Page 6-1

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program or Sector Goal: The broader objective to which this project contributes: Establish an indigenous, self-reliant scientific and technological community that is able to manage and exploit rationally Indonesian natural and human resources for optimum contribution to the country's development and the welfare of the majority of its citizens.	Measures of Goal Achievement: -Key indigenous industries and markets relevant to rural and urban poor developed and demonstrated. -National policies and plans for resource development and assistance to the poor being determined, published and executed. -Smaller percentages of expatriates being used in scientific Research and Development (R&D) without a corresponding reduction in institutional outputs. -Selected renewable resource levels being maintained, although resources are being exploited. -Substitutes being found for non-renewable resources being depleted, e.g. energy sources.	Survey of S&T institutions and agencies. Selected resource surveys. Research findings, and evaluation of their relevance to needs of Indonesian majority. Examine Indonesia's science and technology policies and plans.	Assumptions for achieving goal target: There are feasible renewable resources which can be substituted for non-renewable resources, e.g. alternative energies to substitute for fossil fuels in rural areas. Relevant sectors of the national plan will be based on research and development findings and products. Continued political and economic stability. Continued GOI commitment to improve the quality of life and socioeconomic development of the majority of Indonesians.
Project Purpose: To provide a strong indigenous capacity in selected GOI scientific and technological institutions to plan and conduct research and development (R&D) activities in ways that will benefit Indonesia's majority, and offer opportunities for increased productivity, employment, income, and improvements in quality of life.	Conditions that will indicate purpose has been achieved: End of project status. -Selected S&T sectoral and institutional development policies and plans (such as reducing post harvest food losses, environmental protection, and consumer goods and safety) will have been initiated. -The selected S&T institutions will be using management practices developed and learned through this project. -Maps and informational materials being used by regional planners. -Management courses for R&D entities will be established and taught by Indonesians. -Aquatic resource teaching and research capability to serve a remote region is achieved. -Increased level of government and public support of S&T activities achieved.	Examine published policy, and observe how development plan is being implemented: Observation of management practice. Evaluation by management experts. Check that study courses are being taught, their course materials, and by whom? Check that planners are using new maps and materials. Check national budget for S&T's share, monitor press attention to S&T sector. Joint USAID/GOI evaluation.	Assumptions for achieving purpose: Continued strong federal budget support for the science, technical and research sector. Continued support for the Ministry of State for Research, and associated S&T institutions.
Outputs: 1. Science policies in selected fields established and plans developed. 2. Key S&T institutions self-reliant, cost-effective and relevant to the needs of the majority. 3. International linkages with analog institutions established (primarily GOI-US). 4. Research products being used for benefit of poor, especially in rural areas. 5. Key S&T institutions will have trained manpower for key positions. 6. Computers will have been delivered, installed and put to use in research program [illegible] 7. Maps, charts, and data required for on [illegible] for selected land use [illegible] planning. 8. Workshops, surveys and publications resulting in GOI and public awareness of potential of usefulness of S&T activities to society. 9. Rate of adopted technologies demonstrated in rural areas. 10. Rate of opportunities generated through small industry development.	Magnitude of Outputs: 1. A stated policy and a published plan for each of 3 to 5 areas. 2. 4-7 key S&T institutions. 3. At least 3 linkages with top US institutions. 4. At least 3 major research studies being carried on each year. 5. At least 2 people academically trained abroad (average) for each of 5-7 key institutions. From 30-80 will have short-term training abroad. At least 400 persons trained in-country. 6-7. (not quantifiable at this stage) 8. At least 3 major workshops each year with resultant reports. Reports from 10 workshops and survey studies each year. 9. [illegible] 10. [illegible]	1. Examine plans and review reports of policy workshops and study groups. 2. Check that key entities will have no or very few expatriates; do cost effectiveness studies; do relevance-to-poor evaluation studies. 3. Study documents establishing linkages. 4. Surveys and research being conducted and results reported. 5. Participant training reports; reports from workshops, etc. 6-7. Survey data materials. 8. Review workshops reports, survey publications. 9. Survey of demonstration activities. 10. Review small industry reports, and make field inspections of demonstrations.	Assumptions for achieving outputs: It will be beneficial to Indonesian institutions to have linkages with analog institutions in the U.S. and other countries. Research of S&T entities can produce results needed for assisting the majority. Technologies are available or can be found that are suited to Indonesia's development needs, particularly in generating increased employment and income, increased productivity, and new sources of energy that are easily usable by the poorer elements of the population.
Inputs: Technical Assistance Short-Term Experts Long-Term Experts Training Abroad Academic Short-Term In-Country Training Commodities (primarily documentation, scientific instruments & equipment) Indirect Costs (Overhead, Central Management, etc)	Implementation Input (Type and Quantity) Technical Assistance Short-Term Experts 20 person years 1.0 .2 Long-Term Experts 20 person years 1.0 .4 Training Abroad Academic 70 person years 0.8 .2 Short-Term 35 person years 0.2 .1 In-Country Training Support 0.4 1.5 Commodities (S&T publications, instruments, and equipment) 1.3 Indirect Costs 1.0 .2 6.5 3.0	1. Reports of contractors on sub-projects. 2. Monitoring by S&T Advisor.	Assumptions for providing inputs: It will be possible for S&T institutes to release key personnel for further [illegible] need. Scientific and technological institutes (especially U.S.) will provide technical assistance that can be adapted to the situation in Indonesia.

April 16, 1980

NATIONAL FOOD & NUTRITION WORKSHOP

Organized by LIPI (Indonesian Institute of Sciences) with assistance from NAS (U.S. National Academy of Sciences) and various GOI G&N (Food and Nutrition) agencies.

Input Data 68 Food & Nutrition Workshop by LIPI - NAS

Identification of Problems

1. The problem of food supply and nutrition
2. The problems of soil, water and weather in food production
3. Problems in research
4. Policy for increased incentives for food production
5. Post harvest loss problems
6. Institutional problems

Data Input based on result of PELITA II on:

- Food & nutrition
- Current potentials in
  - *land, water
  - *climate
  - *plant
  - *food technology
  - *consumption
  - *population

Identification of Priorities

Program Priorities

Nutrition

- To eliminate protein Vit. A and iodine deficiencies by establishing a program for:
  - *children
  - *mothers + babies
  - *poor income people
- Improve extension workers activities
- Monitoring health through weight/age/graphic cards

Food

- Research on production, marketing, consumption and flow of food.
- Development of tertiary/quarternary irrigation systems
- Regulations in the use of gov. lands and agro-production sharing system to benefit the poorest farmers

Technology

- Increase non rice technology: corn, sorghum, cassava, sago
- Develop post harvest technology
- Improve cooperation capabilities, e.g. KUD
- Systems monitoring of pests and fertilizers
- Standardization of food preservation for consumers protection

Recommendations to GOI

Institutional Policy

It is recommended to:

1. Use the results of the workshop of F&N as a guideline for Repelita III.
2. Have periodic sessions at Ministerial level (chaired by the President or VP) to decide policy on F&N
3. Have similar periodic sessions at Director General and middle executive levels, to recommend policy for the implementation of the F&N programs.
4. Make changes in nutritional organizations in accordance with the results of the F&N Workshop.
5. Establish a coordination institution to:
   a. improve the nutrition institute in the Min. of Health
   b. establish and monitor the nutrition institute in the Min. of Agriculture
   c. Assign a special corps of executives to monitor the F&N program.
   d. Improve the consumers' organization.

Attachment #3
April 16, 1980

Attachment #4

S&T Project 497-266
Mgt&Eval. Cnto.
April 16, 1980

Obligations:
Grant US$1,500,000
Loan US$5,000,000
Total US$6,500,000

Science and Technology Project

SUMMARY OF FINANCIAL STATUS REPORT

ACTIVITIES	GRANT US $	LOAN US $	ACTIVITY TOTALS US $	%
Activity "A" (S&T Policy)	119,903	630,000	740,903	13%
Activity "B" (R&D Management)	339,339	631,000	970,339	16%
Activity "2" (Alternative Energy)	*	*	*	
Activity "3" (Aquatic Resources)	20,443	1,286,000	1,306,443	22%
Activity "4-5" (Geological Survey)	20,763	2,386,000	2,406,763	41%
Subtotals	500,448	4,933,000	5,433,448	
Uncommitted balance and reservation for Activity "2"	349,500	67,000	416,500	
Pending grant funds authorization	650,000		650,000	
Purchase of 5 books PO-SUO-122	52		52	
Grant & Loan Obligations Totals	1,500,000	5,000,000	6,500,000	

*Scope of work and PIO/T pending

Budget Summary as of March 1980
Funding:
FY 78 Grant US$ 600,000
Loan US$ 5,000,000
FY 79 Grant US$ 250,000
Pending Grant $ 650,000

Science and Technology Project
Obligations:
Loan 497-W-050 $ 5.0 million
Grant 497-0266 $ 1.5 million

S&T Project 0266
Mgt.&Eval. Cmte. Meeting
March 25,1980
Revised April 16,1980

Activities	Description	GRANT Subobli. US$	GRANT Disbursement US$	LOAN Subobli. US$	LOAN Committed & Uncommitted	Total Activity US$
"A" S & T Policy	a. NAS contract AID 492-1388 for 1978 Food Workshop and 1979 Rural Technology Workshop and Jan.-Mar.staff visit PIO/T 80035	94,390	94,390			
	b. Mr.Habibie's US trip (seven people) PIO/P 80222	25,513	25,228			
	Unliquidated balance		285			
	c. NAS program PIO/T 80248 contract# 497-79-100-23			630,000	630,000	
	Dow Oct.79 and Rabinowitch Feb.80 visits and other Oct-Dec 79 and Jan-Feb 80 costs BV# 1703-5;2570-1 amount $9,427 covered under contract					
	Advance to NAS BV# 1731 amount $45,000 covered under contract					
	Subtotals	119,903		630,000		749,903

"B" R & D Management	a. LIPI-DRI workshop PIO/T 80057 contract# 492-1408	70,339	70,339			
	b. LIPI-DRI program PIO/T 80226 contract# 497-80-100-08	269,000	268,963*	631,000	588,935	
	Excess of PIO/T 80226 grant amount $37 will be returned to obligation		37			
	Uncontracted amount in the PIO/T 80226 loan, uncommitted				42,065	
	Nazir Heryanto academic training Jan-Jul 80 PIO/P 80325 amount $ 17,400 covered under contract loan					
	Subtotals	339,339		631,000		970,339
*Committed under contract with DRI						
"2" Alternative Energy	Scope of work and PIO/T under negotiation. Funds provided approx. US$900,000 for Grant and Loan.					

"B" R & D Management	a. LIPI-DRI workshop PIO/T 80057 contract# 492-1408	70,339	70,339			
	b. LIPI-DRI program PIO/T 80226 contract# 497-80-100-08	269,000	268,963*	631,000	588,935	
	Excess of PIO/T 80226 grant amount $37 will be returned to obligation		37			
	Uncontracted amount in the PIO/T 80226 loan, uncommitted				42,065	
	Nazir Heryanto academic training Jan-Jul 80 PIO/P 80325 amount $ 17,400 covered under contract loan					
	Subtotals	339,339		631,000		970,339
*Committed under contract with DRI						
"2" Alternative Energy	Scope of work and PIO/T under negotiation. Funds provided approx. US$900,000 for Grant and Loan.					

"3" Aquatic Resources	a. LON/UNPATTI US study tour Feb 79 PIO/P 80224	11,610	11,610		
	b. John McManus Coral Reef Research Feb 80 in Ambon ITO-80355	2,622			
	c. Aprilani Sugiarto three days perdiem in Seattle Mar 80. ITO-80358	200			
	d. Luwarsih Pringgoadisuryo Library Study in Ambon Mar.80 ITO-80360	500			
	e. Four English Langauge Training Participants LON/UNPATTI in Jakarta	5,571			
	f. Univ.of Washington program PIO/T 80180 contract# AID497-79-190-63			1,286,000	899,892
	Project costs up to Feb 80 voucher#3 amount $28,758 covered under contract				
	Shortterm training amount $38,800 covered under contract				
	Miscellaneous expenses requested from PIO/T 80180				150,000
	Reserved funds (uncommitted) PIO/T 80180				236,108
	Subtotals	20,443		1,286,000	1,306,443

"4-5"	a. Two participants to USGS workshop Jan-Mar 79 PIO/P 80233-34	16,911	16,911			
Geological Survey	b. Subroto Mojo US trip to Wash.DC and Hawaii Mar 79 PIO/P 80265	2,700	2,700			
	c. Stainless Steel Rod for vulcano observatory by four Indonesia ory Tilt TDY Dec.79 PO-SU)-23	1,152	1,152			
	a. USGS-PASA/AID PIO/T 80227 contract# IC/INA-0266-1-79			2,386,000	1,167,100	
	Longterm housing, perdiem and allowances to support PASA consultants amonuht $206,000 covered under contract					
	Joyodiwiryo academic training in US Mar-Jun 80 PIO/P 80357 amount $6,400 covered under contract					
	Reserved for PASA supplemental AID support PIO/T 80227, uncommitted				1,218,900	
	Subtotals	20,763		2,386,000		2,406,763
	GRAND TOTALS	500,448		4,933,000		5,433,448

Attachment #5

SEQUENCE OF EVENTS: PAST AND PLANNED

Science and Technology Project No.497-0266

A. General

a.	Apr. 77	Project authorized
b.	Aug. 77	Project Paper cleared
c.	Feb. 78	Grant Agreement signed, with initial funding increment ($600,000)
d.	Apr. 78	Loan Agreement signed ($5 million)
e.	Jul. 78	Management & Evaluation Committee established
f.	Jul. 78	Conditions precedent satisfied
g.	Jan. 79	First annual project overall evaluation
h.	Feb. 79	USGS-PASA/AID contract starting date (Activity "4-5")
i.	Mar. 79	Grant Agreement amendment for second funding increment ($250,000)
j.	Jul. 79	NAS-AID contract starting date (Activity "A")
k.	Nov. 79	University of Washington-AID contract starting date (Activity "3")
l.	Dec. 79	DRI-AID contract starting date (Activity "B")
m.	Apr. 80	Second annual project overall evaluation
n.	Jun. 80	Activity "2" initiated
o.	Apr. 81	Third annual project overall evaluation
p.	Apr. 82	Fourth annual project overall evaluation
q.	Feb. 83	Final project overall evaluation
r.	Apr. 83	Project Completion Date

D. Specific Activities

1. Activity "A" Performance and Projections

a.	Feb. 78	PIO/T 80035 grant NAS/LIPI for Food and Nutrition Workshop
b	Jun. 78	Amendment PIO/T 80035
c.	Nov. 78	PIO/P 80222 grant training visitation of Dr. B.J. Habibie to U.S.
d.	Dec. 78	NAS PIO/T 80248 approved US$630.000
e.	Jun. 79	NAS Workshop on Technology for Increasing Rural Productivity
f.	Jul. 79	NAS-AID contract program starting date (3 years and seven months)
g.	Dec. 79	Activity steering group will convene every 6 months alternatively in U.S. and in Indonesia
h.	May 80	Activity steering group second convention in Hawaii
i.	1980-82	Eight S&T policy activities in Indonesia
j.	Nov. 82	Projection of last workshop
k.	Jan. 83	NAS-AID contract program end
l.	Feb. 83	Final Evaluation Activity "A"

2. Activity "P" Performance and Projections

a.	May 78	PIO/T 80057 grant for three DRI-LIPI Management workshops
b.	Dec. 78	PIO/T grant & loan for DRI approved US$900,000
c.	Dec. 79	DRI-AID grant & loan contract program starting date (3 years and 3 months)
d.	Jan. 80	Academic training in U.S. starts, PIO/P 80325
e.	Jan. 80	DRI long-term advisor arrived
f.	1980	Three management workshops-cum-training in Indonesia
g.	1981	Two management workshops-cum-training in Indonesia
h.	1982	Two management workshops-cum-training in Indonesia
i.	Feb. 83	Final Evaluation Activity "P"
j.	Apr. 83	DRI-AID contract program and

3. <u>Activity "2" Performance and Projections</u>

a. Apr. 80 Submission by COI of Proposal

b. Jun. 80 PIO/T's approved

c. Sep. 80 Contracts signed

d. Feb. 83 Final Evaluation Activity "2"

4. <u>Activity "3" Performance and Projections</u>

a.	Feb. 79	PIO/P 80224 LON/UNPATTI study tour to U.S.
b.	Mar. 79	PIO/T 80180 loan approved US$1,286,000
c.	Dec. 79	Univ. of Washington-AID contract program starting date
d.	Jan. 80	Long-term (three years) consultant arrived in Ambon
e.	Jan. 80	Four participants preparing for academic training
f.	Feb. 80	Short-term consultant (one month) for Coral Reef Ecology
g.	Mar. 80	7 short-term experts in various expertise will arrive one in each month
h.	May 80	Training International starts
i.	Jun. 80	Three participants to attend workshop in Papua New Guinea
j.	Jan. 81	Short-term expert in Population Dynamics & Stock Assessment
k.	Feb. 83	Final evaluation Activity "3"
l.	Mar. 83	Univ. of Washington-AID contract end

5. <u>Activity "4-5" Performance and Projections</u>

a.	Dec. 78	PIO/T 80227 loan approved US$2,386,000
b.	Jan. 79	PIO/P 80234 grant to attend training course in U.S.
c.	Feb. 79	USGS-PASA/AID contract program starting date
d.	Mar. 79	PIO/P 80233 grant to attend training course in U.S.
e.	Mar. 79	Volcanology workshow in U.S. and observational tour in Hawaii
f.	Jun. 79	Long-term (four years) consultant arrived
g.	Dec. 79	Long-term (two years) consultant arrived
h.	Dec. 79	Short-term (one month) consultant for volcanic hazard mapping
i.	Dec. 79	Short-term consultant (one month) for seismic program
j.	Dec. 79	Four short-term consultants (one month) for hazard mitigation
k.	Mar. 80	Participant academic training in U.S.
l.	Apr. 80	Short-term (three months) consultant for environmental geology
m.	Jun. 80	Short-term (one month) consultant for computer applications
n.	1980	Sixteen short-term consultants
o.	1981	Thirteen short-term consultants
p.	1982	Eighteen short-term consultants
q.	Feb. 83	Final evaluation Activity "4-5"
r.	Apr. 83	Project completion
s.	Apr-Sep 83	USGS submission final report to AID/W
t.	Sep. 83	USGS-PASA/AID contract program end

CIENCE AND TECHNOLOGY PROJECT (497-0266) BAR CHART Attachment #5 C

1978 1979 1980 1981 1982 1983

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Umbrella Project

SCIENCE AND TECHNOLOGY PROJECT AID - GOI CONTRACT GRANT 497-0266 LOAN 497-W-050

April 12, 1978 to April 12, 1983 (5 years)

Activity "A"

F&N WORKSHOP NAS
May 1,78-Mar 31,79

SCIENCE AND TECHNOLOGY POLICY NAS-AID CONTRACT PIO/T 80248
July 1, 1979 to January 31, 1983 (3 yrs and 7 mos)

Activity "B"

DRI 3 Wrks
Apr-Sep.78

RESEARCH AND DEVELOPMENT MANAGEMENT DRI-AID CONTRACT PIO/T 80226
December 15, 1979 to April 1, 1983 (3 yrs and 3 mos)

Activity "2"

ALTERNATIVE RESEARCH & DEVELOPMENT being negotiated
to April , 1983

Activity "3"

AQUATIC RESOURCES DEVELOPMENT U.of Washington -AID CONTRACT PIO/T 80180
November 1,1979 to March 31, 1983 3 Yrs and 5 mos

Activity "4-5"

GEOLOGICAL SURVEY & HAZARD MITIGATION USGS - PASA/AID CONTRACT PIO/T 80227
February 15, 1979 to September 30, 1983 4 yrs and 7 mos

Attachment # 6

PROJECT TITLE: Science and Technology: Practical Applications for Development

I. **Impact re Section 102(d) Criteria: (Explain How)**

☒ **Increase Agricultural Productivity**
People involved in fisheries and other marine industries in the Mollucas will benefit from Activity "3" (Aquatic Resources Development), as the University of Pattimura is strengthened in this sector, and establishes marine extension services.

☐ **Reduce Infant Mortality**

☐ **Control Population Growth**

☐ **Promote Greater Income Distribution**

☒ **Reduce Un-Under Employment**
New job opportunities should arise in fisheries (Activity 3), or as a result of Alternative Energy (Activity 2) results, which may spin-off new small industry dependent upon local energy resources.

And related criteria:

☒ **Strengthen/Create institutions which aid social/economic development**
The primary purpose of this Project is to strengthen GOI institutions (described earlier) which are involved in social/economic development for the benefit of the ordinary Indonesian.

☐ **Improve condition of women: Social/Economic/Political**

☒ Provide decentralized, alternative energy resources

Activity "2" is designed to do Research and Development in decentralized, small, energy production (cooking gas, char, windpower, alcohol production, etc) for rural production and use, and to train people in the technologies.

II. **Benefit Incidence*** (Please specify effect on women wherever possible)

A. **Direct Beneficiaries**

	(Number)	(Who)	(Where)
Income			
Labor			
Agricultural Production	Not quantifiable at this early point in project.		
Education/Training/Management			
Activity "B"	90	R& D institution and project mngrs	Countrywide (Indonesia)
Remainder not quantifiable at this point.			
Medical Treatment (Reduction of Disease, available facilities/ services)			
Living Conditions Improved (water, housing, sanitation, nutrition, institutions, decrease cost of living)			
(Improved Institutions) (see Educ/Trng/Mgt above)			
Provision of Power/Transportation			
Activity "2" (decentralized power)	Not quantifiable at this point)		

Estimated Overall Total Without Double Counting 90 plus

B. **General Population in an Area that indirectly benefits from:**

increased availability of food /fish (potentially hundreds of thousands in Molluccas)

increased mobility in area ____ **Overall** _____

general health improvement ____ (potentially hundreds of thousands, countrywide)

or overall economic improvement ____ through small industry/energy improvement.

C. **People in Area not affected. Why?**

Some people not affected.
Project not intended to be all things to all people.

D. **People in Area adversely affected. How?**

Few, if any

* Most of these figures are not mutually exclusive and many will include people who benefit in two or more ways.