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PROJECT APPRAISAL REPORT (PAR)

1. PROJECT NO. 497-11-210-193	2. PAR FOR PERIOD: May 1, 1973 to June 1, 1974	3. COUNTRY INDONESIA	4. PAR SERIAL NO. 74-3
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5. PROJECT TITLE

Geological Survey Assistance

6. PROJECT DURATION: Began FY 70 Ends FY 75	7. DATE LATEST PROP 8/18/69	8. DATE LATEST PIP 8/18/69	9. DATE PRIOR PAR June 11, 1973
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10. U.S. FUNDING	a. Cumulative Obligation Thru Prior FY: \$1,309,400	b. Current FY Estimated Budget: \$41,900	c. Estimated Budget to completion After Current FY: \$ ---
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11. KEY ACTION AGENTS (Contractor, Participating Agency or Voluntary Agency)

a. NAME United States Geological Survey (USGS)	b. CONTRACT, PASA OR VOL. AG. NO. PASA
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I. NEW ACTIONS PROPOSED AND REQUESTED AS A RESULT OF THIS EVALUATION

A. ACTION (X)			B. LIST OF ACTIONS	C. PROPOSED ACTION COMPLETION DATE
USAID	AID/W	HOST		
		X	<p>1. Despite the ACTION Recommendation (No. 3) in the 1973 PAR, general English language capabilities and the necessary continuous upgrading thereof remains unsolved. The importance of the GSI role in Indonesian development and for international cooperation, through intensified publication of reports, surveys and maps, is recognized and encouraged. However, the overall lack of working English capability by the staff remains a serious handicap. Possible actions might include a package of non-field season mandatory courses, language capability, incentive allowances, or language-related promotions. For the long-range development of the GSI as an institution, it is again strongly recommended that a plan of action for continuing and future English language upgrading be initiated by the Indonesian Geological Survey.</p>	
X		X	<p>2. The PASA summary project review and end-of-project report draft is expected by early December 1974 prior to the conclusion of the project on December 30, 1974. It is agreed that a general retrospective project evaluation/review covering the five-year life of the project be conducted by USAID/GOI/USGS prior to the completion of the project. This review will also contain recommendations relevant to similar or related future or on-going AID projects world-wide and specifically to geologic survey assistance in Indonesia.</p>	

D. REPLANNING REQUIRES

REVISED OR NEW: PROP PIP PRO AG PIO/T PIO/C PIO/P

E. DATE OF MISSION REVIEW

6 June 74

PROJECT MANAGER: TYPED NAME, SIGNED INITIALS AND DATE

Marvin W. Brigham

MISSION DIRECTOR: TYPED NAME, SIGNED INITIALS AND DATE

Richard M. Cashin

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II. PERFORMANCE OF KEY INPUTS AND ACTION AGENTS

A. INPUT OR ACTION AGENT CONTRACTOR, PARTICIPATING AGENCY OR VOLUNTARY AGENCY	B. PERFORMANCE AGAINST PLAN							C. IMPORTANCE FOR ACHIEVING PROJECT PURPOSE (X)				
	UNSATISFACTORY		SATISFACTORY			OUTSTANDING		LOW		MEDIUM		HIGH
	1	2	3	4	5	6	7	1	2	3	4	5
1. U.S. Geological Survey (USGS)						X						X
2.												
3.												

Comment on key factors determining rating

All planned TDY have occurred except the geophysist who was unable to be released by USGS. Wolcott will be replaced in effect only by extending Nelson to end of project (3 mo. extension) plus two final 3 month TDYs.

4. PARTICIPANT TRAINING						X								X
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Comment on key factors determining rating

The GSI has provided highly qualified participants who have responded well to the training provided. English language was again a difficulty, preventing 2 candidates from qualifying and delaying a third. Project responsibilities within GSI prevented another from going. 6 participants have returned to GSI since the start of the project, another 3 are now in the US and 3 more are expected to depart before the end of the project (December 31, 1974).

5. COMMODITIES						X							X	
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Comment on key factors determining rating

Items mentioned in previous PAR have been received including most of the \$13,000 ordered. Some books were not received, being out of stock. Items received during FY 1974 totalled about \$10,000 and mostly in support of spectographic analytical training.

6. COOPERATING COUNTRY	a. PERSONNEL						X							X
	b. OTHER						X							X

Comment on key factors determining rating

A new director has been on the job 6 months and continues active support of the project. ~~Little has been achieved in providing salary adjustments and incentives to encourage the employment and retention of capable personnel.~~ Numbers of Geologic Mapping Division personnel will be close to or ahead of planned level at EOP; cartographic personnel will be ahead of planned level. GSI maintained a very active geologic mapping program during the year and will delay a few geologists starting field work during June to complete the maps of previous field work. The GSI and GOI have generally made their contributions as planned.

7. OTHER DONORS													X	
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(See Next Page for Comments on Other Donors)

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II. 7. Continued: Comment on key factors determining rating of Other Donors

A New Zealand team continues technical assistance to GSI in Geothermal exploration through chemical geophysical and geologic investigation. Their counterparts are in volcanology division, exploration division, and analytical laboratory. During the past year, the first of a Belgian team arrived to work with the exploration division in analytical work and geochemical exploration. Analytical instruments and training provided do not duplicate AID technical assistance. (Dutch, British or Japanese assistance was not continued on site during the year).

III. KEY OUTPUT INDICATORS AND TARGETS

A. QUANTITATIVE INDICATORS FOR MAJOR OUTPUTS (cumulative)		TARGETS (Percentage/Rate/Amount)					END OF PROJECT
		CUMULATIVE PRIOR FY	CURRENT FY 1974		FY 75	FY ____	
			TO DATE	TO END			
1. Systematic Geological maps published.	PLANNED	5	-	10	14		target capability 7 per year
	ACTUAL PERFORMANCE	5	5				
	REPLANNED			7	10	-	
2. Regional Geological maps published.	PLANNED	0	0	1	3		target capability 2 per year
	ACTUAL PERFORMANCE	0	0				
	REPLANNED			0	1		
3. Trained GSI Mapping Division Staff: Geologists and Assist. Geologists 1/ (see page 3a for footnote 1/).	PLANNED	16(15)	24(20)	24(20)	24(20)		
	ACTUAL PERFORMANCE	13(11)	19(18)				
	REPLANNED			-	22(30)		
4. Trained GSI staff: Cartographer/Photographers and others 2/ (see page 3a for footnote 2/).	PLANNED	15(4)	20(7)	20(7)	20(7)		
	ACTUAL PERFORMANCE	17(4)	23(10)				
	REPLANNED			-	29(10)		
B. QUALITATIVE INDICATORS FOR MAJOR OUTPUTS		COMMENT: Map quality depends upon both geologic and cartographic inputs. Of the 2 geology is a good more subjective, and map quality is dependent upon individual training experience, initiative and ability. Cartographic work can be more closely supervised, standardized and checked for accuracy. As should be expected the quality of the published maps varies considerably, as judged by the project team; there is a continuing improvement. A later indication of the map quality will come from the results of those using the maps for resource exploration and land-use planning.					
1. Published maps							
x 2. Technical Reports		COMMENT: The mapping division has not published a bulletin-type report, but the published reconnaissance map of Palu serves some of the purpose by providing a more complete geologic report than can be given on the systematic maps. It is planned that 1 technical report on fission-track age dating will be completed by the end of the project.					

1. These figures do not include 1 assistant geologist who was transferred to another division in GSI. In addition to these listed, the following geologists (and assistant geologists) in other institutions worked part time for GSI in geologic mapping this past year: 6-Gajah Mada University, 5-UNPAD and ITB, 12-Akademi.
2. Other include 1 librarian, 1 chemist, 4 assistant chemists and 4 geochemists. Other training given through classroom or laboratory instruction as follows (most of these men have been counted in boxes 3 and 4 above):

<u>Course</u>	<u>No. of men</u>	<u>Weeks training</u>
Geologic structure and geologic maps	27	8 (a)
Photogeology	12	8 (b)
Remote Sensing	22	2 (c)
Spectrographic analysis	6	12 (d)

- a) Included men from all GSI divisions
- b) " " " most "
- c) " two men from outside GSI
- d) " 1 chemist and 2 assistant chemists from Mining and Metallurgy Institute and for part of the time one man from P.N. Timah.

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IV. PROJECT PURPOSE

A. 1. Statement of purpose as currently envisaged. 2. Same as in PROP? YES NO

Develop an improved capacity on the part of the Geological Survey of Indonesia (GSI) to map, identify and appraise mineral and other geological resources of the country, emphasizing mineral target identification through coordinated geologic mapping, geochemical surveying and geophysical investigation.

B. 1. Conditions which will exist when above purpose is achieved. 2. Evidence to date of progress toward these conditions.

1. Continued annual production of geological quadrangle maps, region maps, and interpretative reports by GSI based on a GOI order of priorities.
2. Modernize laboratory facilities for rock and sediment sample analysis, as well as other supporting services (library, etc.)
3. Cartographic capability to prepare geologic maps for printing on a sustained basis.
4. Adequate distribution facilities for geologic maps and reports and the means for public notification of new releases of maps and reports.

1. Status of geologic maps: 6 printed (including 1 reconnaissance map), 2 in color proof, 3 in cartography, 8 being reviewed, 5 being compiled after field work, 5 being mapped and field work to start this field season on another 5.
 Evidences of conditions: GSI geology staff benefits (see ACTION 5, FY 73 PAR) have been expanded to include base salary increases of 200% (general GOI civil servant increases), geologic incentive pay (500% of base salary) field allowances of Rp.4000 per day for senior geologists (in addition to normal per diem), plus designated overtime pay for geologists compiling and completing maps. Other monetary incentives will be provided to personnel working in laboratory and cartographic services.
 2. Training and several items of equipment were provided for analytical work with the spectograph. Age dating of rocks by fission track methods will be initiated in Bandung when a USGS specialist arrives late in the year. Participant training of 2 men in Denver, completed this year, has taught them the fission track method. Needed items of equipment for fission tracking are on hand. The librarian to be provided by Great

V. PROGRAMMING GOAL

A. Statement of Programming Goal

Facilitate orderly long-range development of Indonesia mineral resources and systematic land-use planning.

B. Will the achievement of the project purpose make a significant contribution to the programming goal, given the magnitude of the national problem? Cite evidence.

Program Goal: Annual production of geologic maps, which are a basic need in attaining goal, continues, as indicated in IV B 2 (1) above. Since publication of the first map an average of 300 copies of each map has been distributed through library exchanges, provided gratis to in-country institutions and sold to companies and individuals. The value of published maps for resource exploration and land-use projects has a snow-ball effect; their value increases geometrically with increasing number of maps. Complete proof that the program goal will be attained awaits a few years of continued map production.

Britain has not been found. However, current GSI librarian to be trained under Colombo Plan in Australia for 3 months beginning in October.

3. The staff of cartography continues to increase. There are now 6 supervisors, 14 technicians and 3 lab. technicians. A further increase of 6 cartographic technicians will take place by the end of the project. A reorganization of cartography is providing better supervision and quality control. The photo lab was extensively improved by painting, wiring and installation of air-conditioners, which will insure much better copy.
4. Maps are easily available for inspection and purchase at GSI. A sales office in Jakarta will be needed after a few more maps and publications become available for easy purchase by public users. Notice of release of reports is being made in the "Berita", the GSI news letter.