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PROJECT PAPER
WESTERN UNIVERSITIES AGRICULTURAL EDUCATION
PROJECT NO. 497-0297

Prepared by

EDUCATION & HUMAN RESOURCES OFFICE

USAID INDONESIA

CONTENTS

<u>Section</u>	<u>Page</u>
Face-Sheet	
I. FOREWORD	1
II. DETAILED PROJECT DESCRIPTION	2
A. Relevance to Government of Indonesia Plans for Higher Education	2
B. Institutions Served and Focus	2
C. Current Institutional Development Problems	3
D. Project Focus	5
E. Project Goal and Strategy	8
F. Project Purposes	9
G. Project Outputs	10
H. Project Inputs	12
III. METHODOLOGY USED AND RESULTS OF THE PROJECT ANALYSIS	12
A. Economic Analysis	12
B. Social Soundness Analysis	14
1. Social-culture environment	14
2. Social-cultural factors	14
3. Beneficiaries	15
4. Benefits	16
5. Spread effect	16
6. Follow on	17
7. Women in development	17
C. Technical Analysis	18
1. Training	19
2. Technical assistance	20
3. Commodity assistance	21
4. Essential role of universities in development and transfer of technology to impact on the rural poor	22
5. Technical feasibility assessment	24
D. Administrative Analysis	24
1. Central office	24
2. Project structure and staffing	24
3. Project policy steering committee	25
4. Project office and staff	26
5. Universities and university project offices	27
6. Location of project central office	27
7. Participant selection	27
8. Administrative feasibility	28
E. Financial Analysis	29
IV. IMPLEMENTATION PLAN	30
A. Introduction	30
B. Detailed Implementation Schedule	30
V. EVALUATION ARRANGEMENTS FOR THE PROJECT	31
A. Annual Review	31
B. External Review	31
C. Completion of Project Review	31
D. Continuing Operational Review	32
E. Baseline Data	32

	<u>Section</u>	<u>Page</u>
VI.	CONDITIONS, COVENANTS AND NEGOTIATING STATUS	33
	A. Conditions Precedent	33
	B. Covenants	33
	C. Negotiating Status	33

C H A R T S

<u>Title</u>	<u>Page</u>
Map - Location of Universities.....	2A
Summary Data for Universities.....	3A
Proposed Scheme for Operation of Network System	6A
Project Inputs.....	12A
Organization Chart	24A
Summary of Cost Estimates and Financial Plan	29A
Costing of Project Outputs/Inputs	29B
Projection of Expenditures by Project Year	29C
Contribution Percentage	29C

ANNEXES

- A. Project Identification Document (PID) Facesheet
- B. PID Review Cable
- C. Initial Environmental Examination
- D. Logical Framework
- E. Statutory Criteria Checklist
- F. Draft Project Authorization and Request for Allotment of Funds
- G. GOI Application for Assistance
- H. Detailed Budget Data
- I. A Brief History and Description of Indonesian Higher Education
- J. Social Soundness Analysis
- K. Selected Data on Nine Universities 1/
- L. Project Design Team

1/ Only representative data for one university is included herein to conserve space. Data on other project universities are part of this Project Paper and are on file in ASIA/ISPA, ASIA/PD, ASIA/TR and the Mission.

AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT DATA SHEET	1. TRANSACTION CODE <input type="checkbox"/> A = Add <input type="checkbox"/> C = Change <input type="checkbox"/> D = Delete	Amendment Number _____	DOCUMENT CODE 3
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2. COUNTRY/ENTITY USAID INDONESIA	3. PROJECT NUMBER 497 - 0297
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4. BUREAU/OFFICE EDUCATION/HUMAN RESOURCES	5. PROJECT TITLE (maximum 40 characters) WESTERN UNIVERSITIES AGRICULTURAL EDUC.
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6. PROJECT ASSISTANCE COMPLETION DATE (PACD) MM DD YY 06 30 86	7. ESTIMATED DATE OF OBLIGATION (Under 'B.' below, enter 1, 2, 3, or 4) A. Initial FY 81 B. Quarter 2 C. Final FY 86
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8. COSTS (\$000 OR EQUIVALENT \$1 =)						
A. FUNDING SOURCE	FIRST FY 81			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total						
(Grant)	(397)	(-)	(397)	(4,000)	(-)	(4,000)
(Loan)	(730)	(184)	(914)	(7,455)	(1,545)	(9,000)
Other U.S.						
1.						
2.						
Host Country	-	1,044	1,044	-	7,000	7,000
Other Donor(s)		-	-	-	-	-
TOTALS	1,127	1,228	2,355	11,455	8,545	20,000

9. SCHEDULE OF AID FUNDING (\$000)									
A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1) FN	210 B	690	690	-	-			4,000	9,000
(2)									
(3)									
(4)									
TOTALS				-	-			4,000	9,000

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each) 070 250 060 620 660	11. SECONDARY PURPOSE CODE 680
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12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)							
A. Code	XII	BR	TECH	TNG			
B. Amount							

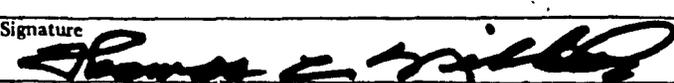
13. PROJECT PURPOSE (maximum 480 characters)

To strengthen the capability of the member institutions of the Association of Western Universities (BKS-B) to play increasingly effective roles in Agricultural and Rural Development by:

- 1) Improved staff, teaching and better trained graduates.
- 2) Institutionalized system of university/rural public service.
- 3) Organized and integrated faculty research.

14. SCHEDULED EVALUATIONS Interim MM YY MM YY Final MM YY 01 83 01 84 02 85	15. SOURCE/ORIGIN OF GOODS AND SERVICES <input checked="" type="checkbox"/> 000 <input checked="" type="checkbox"/> 941 <input checked="" type="checkbox"/> Local <input type="checkbox"/> Other (Specify) _____
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16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a _____ page PP Amendment)

17. APPROVED BY	Signature  Title Thomas C. Niblock Director	Date Signed MM DD YY 09 29 80	18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION MM DD YY 10 02 80
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I. FOREWORD

The Western Universities (BKS-Barat) Agriculture Education (Title XII) Project # 497-0297 was carried in the FY1981 Congressional Presentation under the Title Sumatran Universities Agricultural Education Program. The name has been changed as the regional university associatinn has accepted a tenth member, Tanjung Pura University (UNTAN) located in Pontianak, Province of West Kalimantan. Pontianak is not on the Island of Sumatra, but on the adjacent island of Kalimantan (Borneo). Its geographic, communications and economic links are more closely associated with Sumatra than the rest of Kalimantan which is considered to be in the Eastern Islands region.

Although the thrust of the project as described in the PID remains the same, the Title XII and GOI representatives who designed the project worked hard at fashioning the best Project possible. It was that motivation and not the availability of a certain amount of money, that was determinative of final costs. This, plus the addition of one more university and refined costing of necessary inputs has resulted in increasing the anticipated AID contribution from \$9 million to \$13 million (44%) and the Government of Indonesia's share from \$2.25 million to \$7 million (31%).

The significant increase of the GOI contribution clearly illustrates the Government's interest in this project. This support is in addition to important new funding in the areas of commodities, buildings and personnel to be received by the Association (BKS-Barat) Universities during the current budget year and beyond.

The project purpose is to strengthen the capability of ten Western Region institutions of higher education to play increasingly effective roles in Agricultural and Rural Development by: 1) improved staff, teaching and better trained graduates; 2) institutionalized systems of university/rural public service; and 3) organized and integrated faculty research.^{1/}

This project paper focuses on the first five year phase of a multi-phased project designed to establish firm networks for inter-university cooperation solidify the instructional/research/community service base, and form the nucleus for continuing development of the "critical mass" necessary for academic competence.

^{1/}The ten project institutions consist of eight public universities and two public teacher education institutes known as IKIPs. Frequently the term "universities" will be used in this paper to apply to both kinds of higher education organizations. The institutions and their years of founding are:

<u>Year</u> <u>Founded</u>	<u>University</u>	<u>Year</u> <u>Founded</u>	<u>University</u>
1952	Sumatera Utara (USU)	1963	Jambi (UNJAM)
1956	Andalas (UNAND)	1963	Tanjung Pura (UNTAN)
1960	Sriwijaya (UNSRI)	1964	IKIP Medan
1961	Sylah Kuala (UNSYIAH)	1964	IKIP Padang
1962	Riau (UNRI)	1965	Lampung (UNILA)

II. DETAILED PROJECT DESCRIPTION

A. Relevance to Government of Indonesia Plans for Higher Education

In the third 5-year plan (PELITA III: 1979/1980 -1983/1984), emphasis is assigned to the improvement of higher education. This is to be accomplished through greater educational efficiency, particular in strengthening undergraduate and building programs, ^{1/} and through structural improvement.^{2/} Under PELITA III, 800 MS and 550 PhD are to be trained.^{3/} Emphasis is also placed on improving teaching/learning methods, faculty members' capability to conduct research, and on upgrading educational facilities including libraries, laboratories and other supporting facilities.

The development of higher education is geared to the fulfillment of its three missions: teaching, research and public service, all of which figure prominently in this project. Higher education is charged with 1) developing experts required for staffing the technostructure network of the society; 2) producing scientific findings; and 3) promoting the use of expertise and scientific findings in national development.

Based on the urgency of manpower requirements and the existing capability of the programs, areas of specialization are assigned priority in the following order: 1) teaching, 2) technology, 3) basic sciences, 4) management, 5) agriculture, 6) health, 7) social sciences and 8) humanities. Every state and private higher education institute has been requested to develop a program consistent with these priorities. This project is directly responsive to the first and fifth of these priorities.

There are currently twenty-seven universities and thirteen institutes under the Department of Education and Culture, as well as over two-hundred in the private sector.

B. Institutions Served

This project is designed to assist in the development of nine Sumatran public institutions of higher learning, including seven universities and two IKIPs (public institutes of teaching training and education) and one university in West Kalimantan. Details concerning current individual institutional budgets, student numbers, and professional staff are contained in Annex K, Table 1. These institutions are located in seven Sumatran provincial capitals as shown on the following map. These institutions have banded together to form the Association of Western Universities (Badan Kerja Sama Universitas-Indonesia Bagian Barat - BKS/B). This Association will serve both to guide and to monitor the project proposed herein.

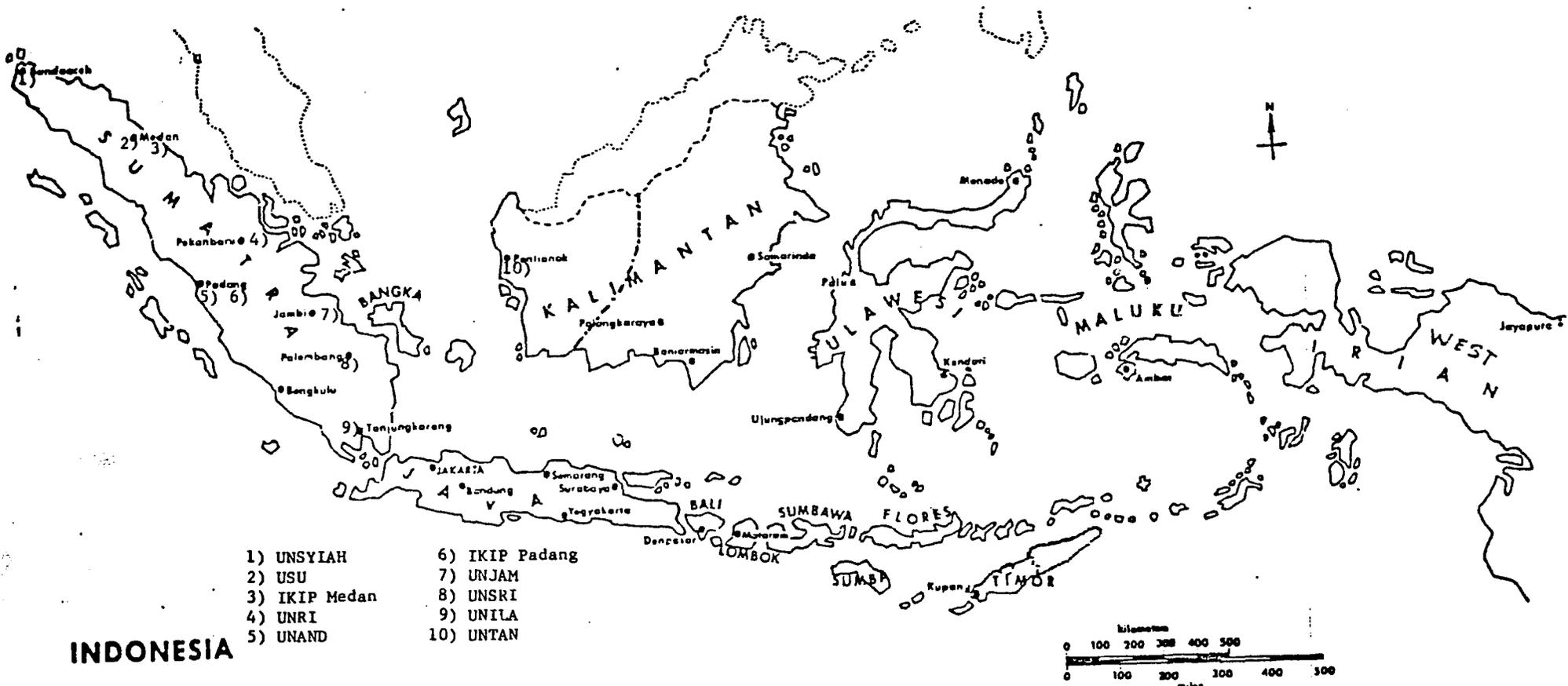
In 1980, twenty-seven per cent (12,549) of the BKS-B institutions' total student population of 45,740 were enrolled in faculties directly related to this project. Thirty-two per cent of the 3573 staff members were assigned to project-related fields. Thus within the public higher education

^{1/}Ministerial Decree No. 0124/U/1979.

^{2/}Government Decree No. 5/1980.

^{3/}These figures refer only to post graduate training. Total need for university graduates is estimated at 301,000 persons during the period 1978-85.

LOCATION OF WESTERN UNIVERSITIES RECEIVING PROJECT SUPPORT



INDONESIA

- | | |
|---------------|----------------|
| 1) UNSYIAH | 6) IKIP Padang |
| 2) USU | 7) UNJAM |
| 3) IKIP Medan | 8) UNSRI |
| 4) UNRI | 9) UNILA |
| 5) UNAND | 10) UNTAN |

--- line for West Kalimantan

system, this project will impact directly on twenty-five per cent of the institutions and on 32 per cent of the faculty and 25 per cent of the student body of these institutions who focus on careers in the agricultural sciences and rural development fields.

C. Current Institutional Development Problems

ectors and professional staffs of the cooperating institutions, as well as the Directorate General of Higher Education, have identified a number of key problem areas which this project will help to address. Among the more important of these are:

1. Most of the professional staff are inadequately trained to carry out a program of higher education in the agricultural sciences.^{1/} Of a total professional agricultural faculty of 497 in the eight institutions, there are represented only 9 PhDs (2%) and 26 MS (6%) or equivalent levels of training.^{2/} Furthermore, a high degree of "in-breeding" exists, with some 70 per cent of the total staff having received their entire education at the institution in which they are currently employed. Many, if not most, of the problems listed below derive from scarcity of well-trained staff.
2. The quality of the teaching program suffers both from the weak preparation of many of the instructors and from a number of structural shortcomings which the university administrations have identified and are striving to overcome. Among these latter are:
 - a low capacity for making out-of-class reading assignments because scientific texts are primarily available only in the English language; both students and professional staff are generally poorly equipped to use English; the number of texts is very limited --- often only 1-2 texts for 75-100 students.
 - limited access to current research findings and other professional developments both within Indonesia and internationally.
 - few scientific texts, journals, monographs, or lecture notes have been prepared and reproduced in the Indonesian language; many instructors are unaware of those that do exist and thus are not utilizing them.
 - inadequate testing and evaluation procedures.

^{1/} It should be noted that there are a few highly trained and very capable faculty members at each institution, but their ranks are thin. The well-trained professionals are over-committed with many special assignments and responsibilities in addition to their normal academic duties.

^{2/} Although we refer to ten institutions, there are actually only eight which have agricultural faculties. The two IKIPs do not.

TABLE I. SUMMARY DATA FOR NINE SUMATRAN PUBLIC INSTITUTIONS OF HIGHER EDUCATION (1979-1980)

	Andalas Univ.	IKIP Padang	Syiah Kuala University	Jambi Univ.	Lampung Univ.	Univ. North Sumatra	IKIP Medan	Univ. of Riau	Univ. of Sriwijaya	Univ. of Tanjung Pura
<u>Year Established</u>	1956	1964	1961	1963	1965	1952	1964	1962	1960	1963
<u>Routine Budget (Rp.million)</u>	874.6	877.8 ^{1/}	667.7	141.9	237.5	1,295.1	793.9	348.4	781.1	257.6
<u>Development Budget</u>	793.9	626.1	622.7	111.6	260.1	533.1	302.1	155.9	411.0	225.8
<u>Provincial Budget</u>	10.0	12.5	140.0	59.0	170.3	NA	-	167.2	250.0	NA
<u>Other Budget</u>	90.0	533.0	215.0	10.0	148.9	NA	256	47.6	280.6	NA
<u>Total Budget</u>	1,768.5	2,049.4	1,645.4	398.5	716.8	1,828.2	1,352.2	719.0	1,722.7	-
<u>Agricultural Faculties</u>										
Agriculture	x	-	x	x	x	x	-	-	x	x
Animal Husbandry	x	-	-	x	-	-	-	-	-	-
A.H. & Veterinary	-	-	-	-	-	-	-	-	-	-
Fisheries	-	-	-	-	-	-	-	x	-	-
Forestry	-	-	-	-	-	-	-	-	-	-
<u>Full-time Professional Staff</u>										
Agricultural	25		86	24	31	104		21	62	44
Sarjana Muda	-		-	-	-	-		1	5	-
Sarjana	113		67	24	31	94		17	54	44
Professional Degree	-		12	-	-	-		-	-	-
M.S./M.A	9		5	-	-	7		3	2	-
Ph.D	3		2	-	-	3		-	1	-
<u>Percent Professional Staff from Own Institution</u>	84%		76%	4%	77%	75%		52%	72%	27%
<u>Agricultural Students</u>	977		542	278	292	1,219		230	400	227 ^{3/}
<u>Percent of Students from Rural Background</u>	70%		95%	25%	73%	60%		24% ^{2/}	17%	-
<u>Graduates (1979)</u>										
Sarjana Muda	4/		59	25 ^{3/}	38	148		9	29	10 ^{3/}
Sarjana	77		15	-	10	57		6	18	1 ^{3/}

1/1980; 2/ Fathers' occupation reported as farmer; 3/ 1978; 4/ No sarjana muda degree program.

- student/teacher contact time low. Full time staff may teach only 3-4 hours/week.
 - little preparation and distribution of course outlines detailing the purpose of the course, structure, learning expectations, material to be covered, evaluation procedures, and references.
 - teaching aids such as slides, overhead transparencies or video-taped instruction which would draw upon existing Indonesian resources have received little developmental attention.
 - often weak primary and secondary level educational preparation of entering students in Sumatra compared to those students attending the more highly developed schools on Java.
3. As a result of the situation outlined above (plus other contributing causes) there is a low productivity rate, defined as the number of annual sarjana graduates expressed as a percentage of the total student body. For the seven Sumatran institution's agricultural faculties, this coefficient in 1979 was only 4.6 per cent. Educational "efficiency" is also low in terms of the average number of years required to complete a degree and the high number of dropouts. Specific figures for Sumatra were not available, but for all agricultural faculties, about 7.5 years are taken to complete the present 5-year sarjana.
 4. There is an inadequate base of physical infrastructure including classrooms and laboratories, scientific equipment, and library resources. Good progress is being made in this area through expanded central government expenditures. Several of the target institutions are currently in the process of establishing new campuses and physical facilities.
 5. There does not exist a satisfactorily functioning system of inter-university cooperation, including exchange of faculty and students, exchange of teaching and research materials, joint seminars, etc. Thus, the strengths of the relatively more highly developed institutions are not readily available to the weaker institutions.
 6. Staffing of the outer island universities is difficult because there seems to be a strong desire to secure employment in Java, where social and professional opportunities are perceived as being superior. This problem is particularly acute for some of the smaller, more isolated institutions.

7. The Directorate General of Higher Education has determined that all public institutions of higher education will implement an academic credit system by 1982. The implications and requirements for instituting such a system are not fully comprehended throughout the university structure.
8. The level of research training and experience of the majority of the professional staff is relatively low; thus they cannot produce students who are well prepared researchers. Similarly, exposure to training in public service techniques, methodology and philosophy is very limited.
9. The number of agricultural graduates is far below the manpower requirements for developing rural Sumatra and West Kalimantan. The needs of government agencies alone greatly exceed the annual production of new graduates. In 1979, the seven Sumatran universities with agricultural faculties produced only 183 sarjana degree holders, and almost all of these accepted government employment. Despite the priority needs for skilled agricultural manpower, the seven Sumatran universities with agricultural faculties for example, currently enroll far greater numbers of students in economics (6,021) and law (5,325) than in the agricultural sciences (3,938).
10. Although mandated to mount research and public service programs, these programs are still very weak. Successful models for coordination of university activities with those of other research and public service agencies have not been developed.

D. Project Focus

The primary focus of this project is upon assisting in the development of a stronger institutional capability for carrying out the tri-partite teaching, research and public service mission in the areas of agriculture^{1/} and rural development. It is recognized, however, that to achieve this objective, it may be necessary in some instances to strengthen supporting disciplines and services including the basic sciences, library resources, teaching methodology, university management and operations, and English language programs.

^{1/}In this project paper, "agriculture" is defined to include the traditional agricultural and animal sciences; fisheries; and forestry; as well as the agricultural social sciences. The two IKIPs do not have agricultural faculties, but do train teachers who work in rural areas. They also provide special training in family life, nutrition, cooperatives, food preparation and preservation, community development and preparation of instructional materials.

The ten institutions vary greatly in their stage of development. As a minimum this five-year project will aim to lay a solid groundwork in terms of staff and programs at each institution which may be built upon by follow-on projects. Major attention and resources will be devoted to strengthening the teaching program by means of upgrading professional staff capabilities. Strengthened research and public service programs will also be made more feasible by staff upgrading. Assistance in organizing, managing and conducting these activities will be provided.

The ten project institutions to be served include two teacher training institutions (IKIP). The IKIPs do not have agricultural programs as such but do have heavy responsibilities for rural development in their respective areas through training rural teachers and home economic specialists and participation in a broad range of public service programs. Project assistance for the IKIPs will stress those activities having commonality with and roles supportive of activities relating to the agricultural institutions. Examples include basic science teaching, English language teaching, instructional methodology, communication techniques and public service activities.

There is no administrative entity under the Directorate General of Higher Education having specific and direct administrative responsibility for these ten institutions. Thus, in order to provide unity and direction, it will be necessary to establish a central project office operating under the Directorate General of Higher Education and through the Association of Western Universities (BKS-Barat).

Project activities will include degree training to both the MS and PhD levels. Approximately half of the degree level training will be at U.S. institutions, slightly less than half at Indonesian institutions and a small component in 3rd countries. Provision is included for some degree candidates at Indonesian institutions to take courses in the U.S. for one or two semesters.

The project also provides for a sizeable component of in-country short course training averaging one month in duration. These short courses will be of two types. Some are designed to improve the academic background of the prospective U.S. degree candidates. These courses will be taught in English and in the style of teaching used in the U.S. Hence the course will also offer an opportunity for the candidate to become acquainted with English language lecturers and U.S. teaching methods. The second type of short course is designed for staff members of the ten institutions who will probably not be taking degree level graduate work. These courses will be discipline oriented and their purpose will be to improve the capacity of the staff members in their professional areas. Such courses will usually be taught in Indonesian or in some cases in a combination of English and Indonesian. Both types of courses will be taught by either an Indonesian professor or a combination of an Indonesian and an American professor.

The project includes a component for network establishment and operation. Networks, consisting of appropriate individual staff from several or all of the institutions, will be established by BKS/Barat with operational responsibility assigned to the project. A network may be developed

PROPOSED SCHEME FOR OPERATION OF NETWORK SYSTEM

WESTERN UNIVERSITIES
AGRICULTURE EDUCATION
(BKS-BARAT)
PROJECT 497-0297

ASSOCIATION OF
WESTERN UNIVERSITIES
(BKS-BARAT)

BKS-BARAT
DEANS

RECTORS

PROJECT POLICY
STEERING COMMITTEE

PRIORITIZATION
ESTABLISH NETWORKS

IDENTIFICATION - PLANNING - GUIDANCE
EVALUATION - APPROVAL - PLANNING

NETWORK

NETWORK

NETWORK

IMPLEMENTATION

NETWORK

NETWORK

NETWORK

OPERATIONAL
PLANNING

REVIEW-TECHNICAL ASSISTANCE
- OTHER SUPPORT

PROJECT OFFICE

BKS-BARAT

K I P

P.P.S.C.

DIR-GEN

USAID

along either discipline, function, or commodity lines. Examples of each type might be soil science, public service and livestock production respectively. Depending on the purpose for which it is established, activities of a network may include preparation of teaching materials (course outlines, laboratory workbooks, visual aids, textbooks), collaborative efforts in a research program, improvement of library collections and services, developing policy and guidelines for public service activities, and so forth. A network may be designed to either function over an extended period of time or to accomplish a specific short-term task.

There are several reasons for the network approach. These include sharing scarce resources (money, staff, equipment and facilities), lessening institutional imbalances (an institution weak in a particular area can be helped by the institutions stronger in this area), and providing more open-ended opportunities for professional development. No matter how competent and well trained, a professional tends to atrophy if he does not have stimulating interchange with other professionals in his specialty.

The process of networking offers a unique opportunity for instructional improvement throughout the Association. As activity areas are selected by the BKS-Barat Policy Steering Committee, Rectors will appoint appropriate staff to work on the network teams. Under guidance of either Indonesian or American experts, each team will meet to discuss the objectives, design an implementation plan, and assign definite responsibilities and activities to be carried out on the various campuses over a short period of time (four to six weeks). The team member then becomes the catalyst to enlist the support of his other colleagues in supplying data, trying out new instructional techniques, recommending library reading lists, supplying successful lecture notes, and writing up short case studies or completing whatever other type of assignment the team may have devised. The team will then meet again for several days to study and evaluate the results submitted by each university, discuss and consolidate the material as appropriate, define the next steps and make new assignments to be carried out on the team members' home campuses. As this process is repeated several times a year, a large portion of each university staff will be actively involved in this "action" research. This should result in the development, preparation and distribution of new instructional materials, methods, and improved study processes in specified subject-matter areas on each campus. Products developed in this way should be significantly effective in improving the learning environment and in raising instructional quality.

Networks primarily will be made up of staff from BKS/Barat institutions. In some instances it may be desirable to include staff from other institutions of higher education and for some network activities (especially public service and research networks) it will be desirable to include counterparts from other ministries or professional entities.

English language training is important to the achievement of project goals from two aspects. The staff of the institutions generally do not have an adequate level of English competence to go directly into graduate work in the U.S. or to utilize the technical books, journals and reports written in English. Therefore, each institution will provide intensive English training for the staff members it proposes for training in the U.S. or third countries.

The second and more basic aspect of the need for English training is that neither the instructors nor the students have adequate confidence to make or carry out reading assignments in English language texts or references. Most technical materials in university libraries are written in English. Indonesian language texts and references are very limited. The problem is accentuated by the shortage of relevant materials for learning English which reduces the incentive for staff and students to develop the necessary skills. The project will provide additional relevant English language texts and references and work with the universities to improve their programs for developing English language reading skills. Technical English will be stressed.

E. Project Goal and Strategy

The goal of this project is to improve Indonesia's ability to feed its people and provide a better livelihood for the rural poor. The Government of Indonesia (GOI) is currently implementing its third five-year development plan (PELITA III). Major emphasis is devoted to increasing food production through crop diversification and intensified farming in settled areas, and opening up new food crop regions in the outer islands, primarily through transmigration schemes. Increased production of rice, fruits, vegetables, legumes, beef, poultry and other farm products that will in turn contribute to higher rural living standards is expected.

This project will support the GOI's efforts to increase food production on the islands of Sumatra and Kalimantan. Because of the area's relatively low population density and large amount of arable land, the GOI has placed major emphasis on agricultural development. Sumatra holds only twenty per cent of Indonesia's population, but contains twenty-five per cent of its total land area and forty per cent of the land suitable for crop production. In its current development plan, the GOI has targeted forty per cent of new irrigated rice fields for Sumatra.

Among the major problems encountered in accelerating agricultural development in Sumatra and West Kalimantan has been the scarcity of trained personnel and skilled laborers. It is anticipated that by assisting the development of public institutions of higher learning, the skilled manpower needed to increase food crop production and consumption can be provided. By training educators and research workers and by stimulating institutional development through activities involving US universities, a number of results will be achieved:

- Better trained university staff and graduates will contribute to rural and agricultural development by participation in improved research and public services.
- Network development will enable the university teaching, research and public service systems to help other GOI agencies to develop programs of agricultural research in food crops.
- Development and demonstration of innovative approaches to public service.

- Grass-root participation in farm and non-farm job and income creating activities.
- Coordinating and integrating overall rural development activities.
- Through these activities rural incomes and employment will be increased.

An overall economic growth rate of about 6.5 per cent has been established as a target for PELITA III (1979-84), with an annual growth of the agricultural sector of 3.5 per cent. Adequate supplies of well-trained manpower represent a key input in meeting these targets, and the university system constitutes the major source of this manpower. Project goals are consistent both with GOI development strategy and USAID/Jakarta assistance emphasis as delineated in the FY1982 Country Development Strategy Statement.

F. Project Purposes

The purpose of this project is to assist the universities of Western Indonesia to fulfill their mandate to carry out programs of education, research and public service. More specifically, the purpose is to strengthen the capabilities of the member institutions of the Association of Western Universities (BKS/Barat) to contribute more effectively to agriculture and rural development by assisting in:

- (a) improving staff, teaching and producing better trained graduates;
- (b) institutionalization of a system of university rural public service;
- (c) organization and integration of faculty research.

At the end of the project, it is expected that the universities' educational programs will have been substantially strengthened as indicated by a significant number of staff having been upgraded through appropriate study programs, by implementation of an academic credit system which permits students greater freedom to design study programs to better meet their needs and by higher quality of graduates.

Public service in these universities is still in its infancy. For the most part it is provided on an ad-hoc basis, with little administrative organization and planning. As a result of a 1979 directive, the universities must each establish an institute for public service which will become the central administrative unit for planning, coordinating and implementing public service activities. It is expected that this project will contribute to stronger institutes by upgrading analytical and planning skills of staffs. With these capabilities sharpened, institutes can then do a better job of establishing linkages with those government agencies.

Research, like public service, is not yet fully institutionalized into the universities of Western Indonesia. Although a small program of

research has been underway for many years, it was not until recently that the universities and the Directorate General of Higher Education placed major emphasis on the research function. Promotion criteria have been revised to include more emphasis on research and publication; a competitive program for funding research has been initiated by the Department of Education and Culture; and the establishment of Institutes of Research has been decreed. The universities continue to lack the human, financial and organizational resources to mount a strong research program. In this project, the universities' research institutes will be strengthened by assisting them to set up better administrative and dissemination procedures; cooperate more effectively with each other and with other research agencies; and train their staffs in research techniques and research administration.

The assumptions underlying the achievement of these purposes include: a) continuing growth in the demand for university graduates, b) maintenance of the quality of primary and secondary school systems, c) GOI's strong commitment to university research and public service, and d) universities' staffs committed to teaching, research, and university public service.

G. Project Outputs

This project will have eight outputs, the most important of which is a better trained professional staff. In order to upgrade the skills of as many staff members as possible, a wide variety of opportunities for training are incorporated into the project. At least forty staff members will be trained to the PhD and 140 will receive masters degrees. Additional staff who, because of family commitments or other constraints, will not undertake graduate studies, will have the opportunity to participate in non-degree studies of one to two semesters and/or intensive short courses to be offered in Indonesia. At least fifty staff will undertake non-degree programs. Twenty-two upgrading courses will be offered, each with approximately twenty students. Twenty in-country degree participants will go abroad for one or two semester to take courses (sandwich program).

A second major output of this project will be the upgrading of physical facilities to meet the minimum needs for mounting effective teaching, research, and public service programs. This will include the provision of laboratory equipment for the basic science laboratories for each university, and where necessary, the buildings to house them. Selected equipment for research, laboratories and field facilities are also included. Commodities and buildings constitute a major GOI contribution. The shortage of appropriate and recent textbooks, journals, and materials about Indonesian agriculture will be substantially alleviated by the purchase of 9600 books and journals. Finally, each university will receive minimal printing facilities to make possible reproduction of educational materials such as lecture notes, extension publications and research materials. To supplement GOI purchases, a total of \$375,000 of equipment will be purchased with loan funds.

The third output contributes directly to the implementation of the GOI policy that the Indonesian public universities form regional associations which undertake collaborative efforts to strengthen their

universities and resources. This project will provide technical and financial assistance to the Association of Western Universities (BKS/Barat). A key mechanism for collaboration will be assistance in the development of networks of professional scholars and administrators. The project will assist in the formation of at least six networks, and will provide technical assistance necessary to the achievement of their goals. In order to facilitate the effective functioning of the networks, as well as other on-campus activities of BKS/Barat, project offices on each campus will be established by the universities.

The fourth output will be increased research publications as measured by an increasing volume of published research from an average of five to at least ten publications per year per faculty (college), and increasing distribution among the BKS/Barat institutions. At present, little research is undertaken by the universities. Those faculties (colleges) reporting publication of any research averaged approximately five publications per year between 1975 and 1979. Most of these are mimeographed publications which receive limited distribution.

The fifth output will be increased public service activities as measured by numbers of short courses organized annually, numbers of leaflets published and increased student involvement in community activities. The members of the BKS/Barat are at various stages of developing capability for mounting public service programs. None presently have fully developed and functioning programs. Several have not yet initiated an organized program of public service, while others have several years experience and an articulated administrative structure.

A sixth major output will be strengthened and revised curricula and teaching methods. The project will address such problems as increasing the amount of time university staff devote to teaching and student activities, implementation of the academic credit system in the universities (including revision of the faculty curriculum to include elective courses) and arrangements to permit students to take courses outside his/her faculty and to transfer among universities. Networks will be utilized to undertake such activities as improvement of course syllabi, preparation of reading and laboratory materials, and introduction of improved teaching methods. Measures of improved teaching and curriculum at each institution include: revision and increased standardization of the syllabi of the basic science courses and at least three agricultural courses; preparation of at least three laboratory manuals; doubling the frequency with which agricultural students use libraries; at least one-third of agricultural instructors develop course outlines, assign readings, give tests and/or quizzes.

The seventh output of this project is improved university administration, organization, planning and evaluation. Non-degree study programs and internships at American and other suitable foreign universities will be utilized to improve the skills of Indonesian academic administrators. The services of senior American academic administrators may be made available to BKS/Barat to provide specific training. Because of the need to adapt university record systems to the academic credit system, a measure of this output will be implementation of a new record system.

The eighth major output, and perhaps the most important for increasing efficiency and productivity in the university system, focuses on curriculum reform so that the credit system for degree achievement may be implemented as soon as possible.

All sarjana degrees of agriculture/rural development related faculties in project universities will be modified to conform to credit and time requirements set forth in Article 5, item 3 of Ministerial Decree No. 0124/U/1979. The credit system, detailed in footnote 1/ on page 13 establishes Sarjana (BA or BS) degrees based on successful completion of 140 minimal or 160 maximal credit hours. This is equivalent to four years of consecutive study and has a time limit of seven years for completion.

H. Project Inputs

The magnitude of inputs to be provided through this project are summarized below by the illustrative list on page 12 A.

It should be noted that project inputs are not designed to fully achieve levels of strength desired by the Directorate General of Higher Education in its long-range planning for Project institutions, but rather to make a substantial contribution in this direction and to set the stage for developmental efforts (whether strictly national or donor assisted) which may produce the desired levels. For example, it is estimated that about seventy-five per cent of training will be for agricultural faculties. (111 MS and 38 PhD.) Added to present faculty already trained to these levels will result in an average of 11 MS and 4 PhD level staff per average agricultural faculty of fifty-one. While this will be a marked improvement over the present situation it is well below the desired level.

The magnitude of inputs requested by the universities have been modified to take into account their capacity to absorb assistance during the five year span of this project as judged by the project preparation team.

III. METHODOLOGY USED AND RESULTS OF THE PROJECT ANALYSIS

A. Economic Analysis

As noted in the AID Handbook, in education projects such as this one "..... economic benefits are often impossible to measure without use of imaginative techniques (and thus) the analysis should only be as penetrating as good common sense permits." Thus, there will be no attempt to calculate traditional benefit-cost ratios or internal financial and economic rates of return. Estimates are made, however, of the expected reduction in educational costs resulting in part from project activities and expected improvements in resource utilization among the participating universities. A brief discussion of expected qualitative changes is also provided.

Currently the Directorate General of Higher Education is implementing a program to reduce the formal time requirement for completion of the

Project Inputs^{1/}
(Illustrative)

<u>Activity</u>	<u>Quantity</u>			<u>A I D</u>		<u>G O I</u>
				<u>Grant</u> (\$000)	<u>Loan</u> (\$000)	(\$000)
1. <u>Participant Training</u>						
	<u>MS</u>	<u>PhD</u>	<u>Non-Ac.</u>			
U.S.A.	90	26	70			
Third country	8	4	-			
Indonesia	50	20	-			
Total	148	50	70	-	6,381	2,078
(inflation included)						
2.. <u>Technical Assistance</u>						
Long-term (Sumatra	19.5	PY		1,648	-	351
Professional Associate	14	PY		322	-	84
Volunteer	18	PY		239	-	108
Short-term	5.1	PY		345	92	
Inflation (8.2%)				541	16	109
Total	56.6	PY		3,095	108	652
3. <u>Campus Backstop</u>						
for Technical Assistance				193.4	-	-
4.. <u>Project Operations</u>						
Central Project Office	(1)			-	410	374.5
University Project Office	(10)			-	85	1,215
Training Courses	(22)			-	110	219
Network Meetings	(96)			-	144	648
Intensive English	(250)			-	28	135
Special Teachers				-	74	-
In-country Travel				-	198	198
Educational Materials				-	34	57
(Inflation - 8.2%)				-	198	531
5. <u>Commodities</u>						
Library Books	(9,600)			-	240	30
Lab. Equipment/Supplies				-	100	260
Audio-Visual				-	55	50
Farm Equipment	(8 Farms)			-	90	100
Vehicles	(12)			-	-	155
Reproduction				-	90	90
Other				-	40	19

^{1/}Cost figures in this Chart are not all adjusted for contingencies, overhead.

Sarjana 1 degree from five to four years.^{1/} At the same time steps are being taken through this and other projects to reduce drastically the actual time utilized in obtaining a Sarjana degree from the presently estimated 7.5 years. Project output eight addresses this problem specifically. The goal is to reach productivity^{2/} of fifteen per cent through reducing both the average time required and the drop-out rate. Examination of the basic demographics of student populations shows that the average time for a degree must be reduced to approximately five years for a fifteen per cent productivity level to be achieved. An average five year duration of study may be unrealistic within the time frame of this project but an average six year duration of study and a ten per cent productivity rate should be achievable for the project institutions.

The present enrollment in the agricultural faculties of the Sumatran Universities is 3,938 and productivity is 4.6 per cent. Current annual government cost per student enrolled is approximately \$500.^{3/} Government cost per graduate at 4.6 per cent productivity is \$10,900. If current total enrollment is maintained, ten per cent productivity would produce 394 graduates per year with a cost per graduate of \$5,000. The total annual cost of 394 graduates at 4.6 per cent productivity would be \$4,300,000 while at ten per cent productivity the cost would be \$2,000,000. Thus the increase in productivity results in an annual reduction of \$2,300,000 over the cost of producing the graduates at the present level of productivity. In addition, the reduction in enrollment duration by 1.5 years would eliminate out-of-pocket student costs (food, lodging, supplies, transportation, etc.) conservatively estimated at \$500 per year for a total saving for 394 graduates of \$300,000. It would also allow an extra 1.5 years of gainful employment at an estimated annual salary of \$2,000 producing additional earnings for each year's group of 394 graduates of \$1,182,000.

^{1/} Indonesian University level degree requirements introduced in 1979.

<u>Indonesian Level</u>	<u>Credits</u>	<u>Years Req'd</u>	<u>U.S. Equivalent</u>
Diploma (S0)	35 - 120	1 - 3	
Sarjana (S1)	140 - 160	4 - 4.5	BA or BS
Pasca Sarjana (S2)	S1+ 60-80	+ 2	MA or MS
Doctoral (S3)	S2+ 60-80	+ 3	PHD

Each university varies in its stage of development efforts to conform to these new degree requirements. Individual faculties also vary in their ability to change to the new system.

^{2/} Productivity as used in Indonesia is the percentage of graduates per total enrollment.

^{3/} This training cost figure is estimated by summing the total 1979/80 budgets of the nine institutions (\$19.6 million) and dividing by total 1979/80 enrollment (43,996) which results in a per student cost of \$444. Since budgetary data were incomplete for Northern Sumatra University, and assuming some inflation in education costs, this figure was rounded to \$500.

The above calculations are not meant to justify the project but to illustrate that substantial direct economic benefits may be expected from it. Equally important although not subject to even speculative economic analysis are the enhanced research and public service programs which will be developed and, most importantly, the greater potential of better trained students to contribute to the rural development of the area.

The project will also achieve efficiency cost savings to the system by developing networks for sharing of professional time, teaching and research materials and experiences in administrative organization and management.

The movement towards greater standardization of curricula and course content among the various institutions will also facilitate student mobility without loss of time and academic credits, and will permit students with particular interest areas to complete their final year or two of education at institutions other than the one at which they initially enroll. This, in turn, will facilitate greater specialization in programs among universities rather than each needing to develop programs in all areas (e.g. the University of Riau may be designated as the only institution to develop a fisheries program; another will develop a forestry program). Such activities will reduce duplication of investments and should result in significant cost savings over time.

As noted in the following section which discusses project beneficiaries the existence of a strong university in an area has significant economic impacts by: supplying trained manpower to both government and private industry, reducing outmigration of talented youth, and providing the intellectual and cultural environment that is pre-requisite to attracting industrial growth and investment to the area.

B. Social Soundness Analysis

1. Socio-Cultural environment

This project will benefit the large numbers of people in Western Indonesia who are engaged directly or indirectly in Agriculture. Specifically it will improve the teaching, research and public service programs of ten universities in the agriculture, rural development and basic science fields enabling them to produce more and better rural leaders. It is entirely consistent with current government social/educational goals. It is designed to strengthen and implement many of the higher education policies in the Western region and responds to requests for assistance made to the USAID by the Directorate General of Higher Education (DGHE).

2. Socio-Cultural factors which may affect the project:

* Diversity of individual university expectations. Traditionally and culturally the provinces are so unique and disparate that it is difficult for a university to respond to more than the development needs of its own province.

- * The strong "Call to Java". A further constraint to effective staffing and administration is the strong desire for university graduates to secure employment in Java where social, professional and economic opportunities are perceived to be superior.
- * Strong role of women in society. Although as much as 85 per cent of agricultural labor is performed by women in many Western provinces, the numbers of women in university faculties and in leadership roles is not consistent with their roles at lower levels.
- * Uninformed rural population. Farmers and villagers generally have been left behind and are continuing traditional practices for lack of better methods of doing things.
- * Language barriers. The rural population of Sumatra and West Kalimantan speak a great number of languages most of which are variants of Bahasa Melayu. Many have never been written. Although one of these variants became Bahasa Indonesia and is the common language now being taught in schools, it is still little understood or read by the large majority of rural people who have not had the opportunity to attend primary school.

Beneficiaries

- (a) Ultimate beneficiaries. The rural population will benefit from improved research and public services programs, both those implemented directly by universities and those resulting from activities of better qualified university graduates who will form the backbone of program planning and implementation of rural development activities by other agencies.
- (b) Direct beneficiaries. Will be 1,012 university staff members as follows: 1) 198 who will study for 148 MS and 50 PhD degrees in their areas of competence, 2) 54 who will serve on "Network" task forces, 3) 440 who will take refresher courses 4) 70 will participate in short non-academic study, and 5) 250 who will study Intensive English for three months. The social awareness of students and staff will be directly affected.
- (c) Indirect beneficiaries. Will include 1) 645 additional university staff who will be recipients of technical assistance from U.S. and Indonesian advisors; 2) 6,000 farmers, 3) 60 professional community development and extension workers and 4) 12,550 university/IKIP project-related students.

- (d) Economic level of beneficiaries. The rural dweller, comprises 80 per cent of Sumatra's rural population. It was estimated by the World Bank in 1976 that 86 per cent of these people were living below the poverty threshold of \$190 per capita and that 13 per cent were classified as destitute.

As all professors are public servants they are paid on the regular civil service salary schedule plus a few automatic family and professional allowances. A full lecturer (grade 4 on a 6 grade scale) with five full years at his rank and grade may earn \$82.88 per month salary plus \$137.12 allowances or a total of \$220 (\$2,640/year). Additional benefits for a few at this level may raise their take home "cash" and "kind" receipts to as high as \$516.90 per month (\$6,202/year). A recent World Bank study on Agricultural Manpower in Indonesia finds that although hard data on remuneration in the private sector for comparable levels of study and experience is difficult to obtain it appears that the private sector remuneration is 30-50 per cent higher than that of the university professor with all his automatic and supplemental allowances.

In terms of employment, income generation, consumption, and other generally accepted measures of economic activity, the agricultural sector occupies a position of major importance in Sumatra. Agricultural production continues to follow largely traditional practices and productivity is low. Both directly and indirectly this project will contribute to improved incomes and levels of living throughout the Western Region.

4. Benefits

A listing of project outputs (described more fully elsewhere) illustrates benefits to be derived by universities and communities served by them: 1) better trained professional staff; 2) strengthened curriculum and teaching methods; 3) upgraded laboratories, libraries, textbooks and printing facilities; 4) increased university public service programs; 5) increased research publications, 6) strengthened Association of Western Universities; and 7) improved university administration and organization.

5. Spread Effect

By contributing to the intellectual and economic growth of a region, universities contribute in subtle ways by helping to create a climate conducive to:

- retention of many of the brighter and more able young people who might otherwise migrate to Java.

- research which will provide improved technologies for the small farmer.
- leadership training which focuses on the plight of the poor so that progress achieved may result in greater equity.
- project organization and activities which will serve as models that the Association (BKS) may use other than agriculture faculties to improve out-reach programs and concerns for the economic and social well-being of rural people.

6. Follow-on

This project is the third in a series of similar AID projects designed to improve the teaching, research and public service of universities in a particular geographic area. The Department of Education and Culture and the Indonesian Planning Board (BAPPENAS) have already expressed their approval of results obtained by the on-going projects and are expected to request AID assistance in formulating and implementing a similar multi-phase program for the NUSA TENGGARA (South Eastern) universities and some universities in Bali and Java. If this request should lead to a project, AID would be the only donor agency to work directly with all public university faculties concerned with agricultural sciences and rural development.

7. Women in Development

An understanding of the role women play in the different cultures of Indonesia is crucial to the success of Indonesian development planning since Indonesian development depends heavily on programs in family planning, literacy, and nutrition. Without the full involvement and support of rural women - who as wives and mothers have major control over the family group and the way it eats, works, and thinks - these programs will have limited effect. Development planning, however, especially at the higher levels of government, is a male business.

In accordance with the impressive societal role of women in the Western Region, the joint GOI, USAID, University of Kentucky design team recommends that the BKS-Barat consider the following as an integral part of this project:

- a. Special emphasis be placed on extending graduate education opportunities for women faculty in agriculture, nutrition, food processing, home economics.

- b. Women also be encouraged to study in the fields of political sciences, economics, marketing and administration to be better prepared for community, regional and national leadership roles.
- c. A greater than proportionate number of women, i.e. 25-33 per cent be granted advanced study opportunities within country and abroad.
- d. Universities expand their cooperative activities with BAPPEDA, Agricultural Extension and the Department of Education and Culture in an effort to more fully involve women in non-formal and informal educational activities.
- e. Professional women be encouraged to join professional organizations and participate actively in regional and international professional meetings.
- f. Research be initiated to understand more clearly the role of women in development within the Western Region.

Women must be involved as visiting consultants and in-country, appropriately trained, counterparts. Men can work effectively as part of the team, but if only men define the problems, design the research, select the methodology and conduct the evaluation, the women's viewpoint could be lost. Evidence that this could happen exists in the fact that most agricultural planning has been done by males, and women's potential for local food production (and hence in improving nutritional status) has not been fully recognized.

C. Technical Analysis

There are a number of key problem areas in institutional development which have been identified by the Association of Western Universities (BKS-Barat), the Konsortium for Agricultural Sciences (KIP), USAID specialists, the Directorate General of Higher Education, and the joint project preparation team. Some of these are discussed below.

The Sumatran Universities are relatively new institutions compared to those in Java and some other areas. Although now developing rapidly, there remains a serious shortage of trained faculty as well as an inadequate supporting physical infrastructure. Furthermore, the prevailing educational approach is inconsistent with the system being promoted by the Department of Education and Culture. Professors teach primarily by lecturing from notes; text books are scarce, generally in English, often date to the early 1960's and are seldom utilized; library reference materials are similarly scarce, out-dated, in English and little used; formal written course syllabi, outlines, evaluation procedures, objectives and statements of what is expected of the students are practically non-existent; laboratories are poorly equipped; university experiment farms are largely undeveloped and research activities are minimal. The GOI has plans, however, to greatly

increase research activities under the AID funded Sumatra Agricultural Research Project # 497-0263 which will establish a network of nine research stations throughout Sumatra under the Department of Agriculture. Close cooperation will be sought between the department of agriculture and university agricultural research projects through research grants and sharing of facilities, laboratories and scarce personnel.

Meetings held by the joint survey team with rectors and their staffs, deans, department chairmen, and individual faculty members suggest both a recognition of the problems and a strong desire to begin to rectify the weaknesses. High priority is assigned by almost everyone surveyed to the need for strengthening English language competency for both faculty members and students. This is viewed as a strong prerequisite both for the opportunity for foreign technical training, and for effective access to and utilization of textbooks and other scientific materials. This suggests the need for project attention to strengthened English language programs at each institution, and perhaps intensive short courses at central locations. The need for interchange with native English speakers was stressed by each university.

In order to achieve the project objectives of strengthening university programs of teaching, research and public services, inputs in the traditional areas of training, technical assistance and commodity support will be required. Each of these is discussed below.

1. Training

This area will receive first priority and major emphasis in the project since effective upgrading of professional staff is a necessary condition for effective utilization of other project inputs. Training will be accomplished in a variety of ways, including:

- in-country short courses, seminars, workshops, and symposia conducted by Indonesian professionals and/or foreign specialists.
- informal "hands on" training accomplished by contract specialists working closely as counterparts with professional staffs at their universities in the solution of problems in the areas of teaching, research, and public service.
- in-country formal and non-degree refresher courses in areas such as statistics, research methodology, biochemistry and technical agricultural fields as needs dictate.
- in-country formal degree programs at the MS and PhD level.
- third country degree and non-degree training programs at some institutions in South East Asia.

- non-degree special training programs in the United States in such areas as laboratory organization and management, university administration, experiment farm organization and management, library administration, public service (extension) program development and management and other areas as needed.
- "sandwich" programs which combine training in Indonesian and American universities and result in a degree being granted by one or the other.
- formal degree training programs at U.S. universities at the MS and PhD level.

The scope and purpose of the above training is considered to be much broader than simply upgrading of staff technical competence in disciplinary areas. It must also address the problem of strengthening the institutional systems for teaching (including administration, curriculum development; teaching/learning methods; course structure and evaluation; and similar areas); research (including problem identification and prioritization; research design and methodology; research administration, including interdisciplinary and inter-agency research collaboration); and public service (with requirements similar to those for research).

To be effective, the training thrust of this project must be adequately supported by technical assistance through the contract team and the BKS/Barat. It must also be supported by large amounts of commodities (mostly to laboratories be supplied by the GOI) and construction of laboratories, experimental farm facilities and libraries - again by the GOI and Provincial Governments.

2. Technical assistance

Foreign and Indonesian expertise will be utilized in a number of areas including, but not limited to, the following:

- assistance in the development of a "networking" system which integrates research, teaching, and public service activities of the various cooperating universities and eventually results in more efficient and effective utilization of resources through exchange of materials, sharing of professors, exchange of ideas and joint program development. These networks may be established both along disciplinary lines (e.g. soils, animal sciences, agricultural economics) and functional lines (e.g. research and public service organization and administration; teaching methodology; curricula design), or along commodity lines (rice, cattle, rubber).

- assistance in the preparation of course outlines, teaching materials, evaluation procedures.
- assistance in organizing and implementing research projects and programs.
- assistance in organizing and implementing public service projects and programs.
- teaching, in collaboration with Indonesian professors, selected short courses in specialized areas (e.g. statistics, biochemistry, agricultural disciplines research methodology; English language skills) as determined by individual university and network needs.
- assistance in the organization, management and equipping of laboratories.
- assistance in the organization, development and management of university experiment farms.
- assistance in the establishment of identification and selection procedures for participant training (including priority areas).
- assistance in library organization, administration and operation.
- assistance in the implementation of the semester-based academic credit system.
- assistance in the organization and administration of academic records.
- assistance in identifying commodity needs and placing orders for off-shore procurement.
- assistance in university management and operations.
- assistance to both staff and students to improve English language skills pre-requisite to utilization of most library collections, textbooks and technical/professional publications.

3. Commodity assistance

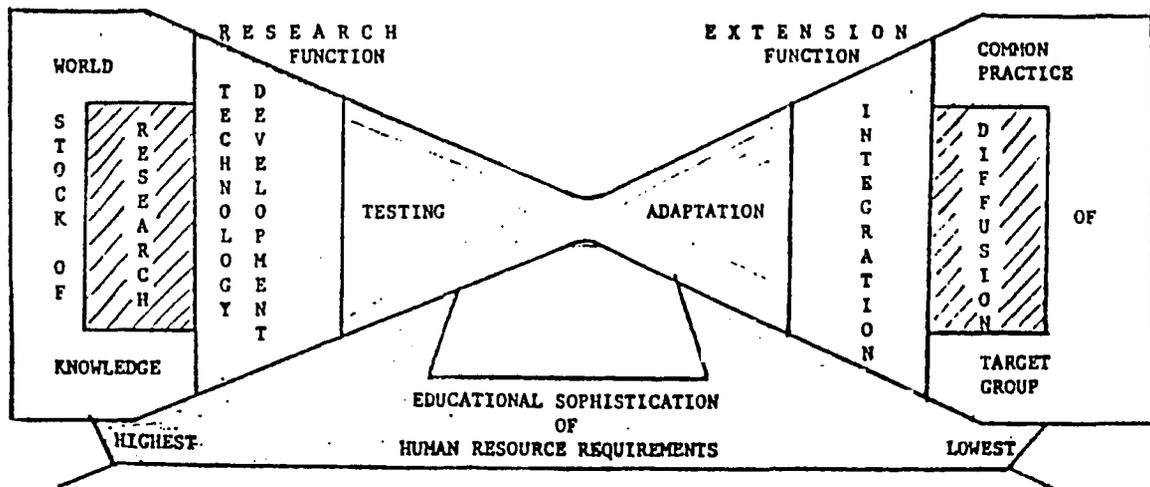
Both training and technical assistance components of the project will require commodity support. Since the GOI plans to provide major inputs in this area from non-project funds (in support of the project), U.S. commodity expenditures directly by the project will be relatively modest. Emphasis will be placed upon procuring textbooks, journals and

reference materials, specialized equipment for auto-tutorial instruction, in both English and Indonesia, audio-visual equipment, teaching materials (and duplicating equipment to produce such materials), laboratory equipment and supplies, and university experimental farm equipment and supplies.

4. Essential role of universities in development and transfer of technology to impact on the rural poor:

An indigenous capacity for the development and transfer of pertinent technology is essential for rural development. Such technology must respond to or reflect problems of target audiences at various production levels. Technology transfer depends heavily on indigenous research capacity, a lack of which places serious constraints on the ability to adapt knowledge generated elsewhere to local conditions. Likewise essential is an intermediary organizational and administrative framework which closely ties research to producer needs and motivations. The pre- or semi-literate poor cannot be expected to change centuries-old patterns and beliefs and embrace new technologies and practices by themselves or in isolation. Some means must exist to foster, interpret and support behavioral change at various levels of interrelated competence and complexity connecting needs with knowledge. Indigenous university competence - as the U.S. experience with the Land-Grant Colleges has shown - is essential to this framework and the transfer of technology to the target "poor". The following schematic is one way to think about this process of development and transfer of technology.

PROCESS OF TECHNOLOGICAL INNOVATION AND APPROXIMATE LEVEL OF CORRESPONDING GENERAL HUMAN RESOURCE TRAINING REQUIREMENTS



In the above figure, Research should be thought of as systematic and organized activity carried out for the specific purposes of adding to the stock of knowledge; that is, identifying and analyzing, applying and evaluating pertinent aspects of it. Technological Development is the process by means of which items from the stock of knowledge are selected and synthesized into products or processes instrumental in satisfying human wants and needs. Testing the new technology under a variety of conditions is the next integral function. Adaptation is an extension operation, and is a further sequential process by which a technology proved for one range of conditions is modified appropriately to fit other conditions, frequently under field trials or testing. Integration fits a new technology into current practices. It often utilizes a variety of other services and inputs and requires an expertise in the technology as well as the knowledge and understanding of local cultural/econological conditions. Diffusion delivers information, practices, even equipment and certain commodities, and instructs in their use, while Common Practice may be regarded as the final adoption of the technology into common usage.

When focusing on solving or improving certain human problems or needs, the Research activity searches out tentative development technologies from the store of knowledge, tests them, eliminates alternatives, evaluates the results, and produces a refined product or promising practice. Extension activities then adapt, integrate and diffuse this resultant technology through increasing applications to the target audience until it becomes part and parcel of every day practice. These activities are interdependent, each piece related to very other piece and communication among the components flowing in both direction. Thus, the need for technological innovation may be identified and initiated at any point within the cycle.

This schematic underscores the basic relationships between the roles of the university, pre-literate users and intermediary organizations in the effective application of technological innovation. When such relationships are viewed as a functional whole, the essential and very basic role the university might play becomes clearer.

In Indonesia, the statutory responsibility for the management of agricultural research is under the Department of Agriculture. It is the university system, however, that has the resources, the structure, and increasingly, the imagination to encompass the various elements of the technology development and transfer process and to facilitate a closer integration between the Departments of Agriculture and Education to direct the force of this process to solving problems of the poor.

Indonesia has charted its course but still has some way to go before it will be able to enlist all its universities successfully in this cooperative and important work; it is clearly a task of high priority

5. Technical feasibility assessment

The approaches to addressing the existing problem areas in most of the universities are generally known and have been tested, both in Indonesia and abroad. Materials, methodologies, and technical know-how can be assembled from diverse sources. There exists a climate of understanding of the problems, a willingness and enthusiasm to tackle them, and a base of Indonesian educators and administrators with whom to implement the project. If the needed resources identified in the project are supplied, it is technically quite feasible for implementation.

D, Administrative Analysis

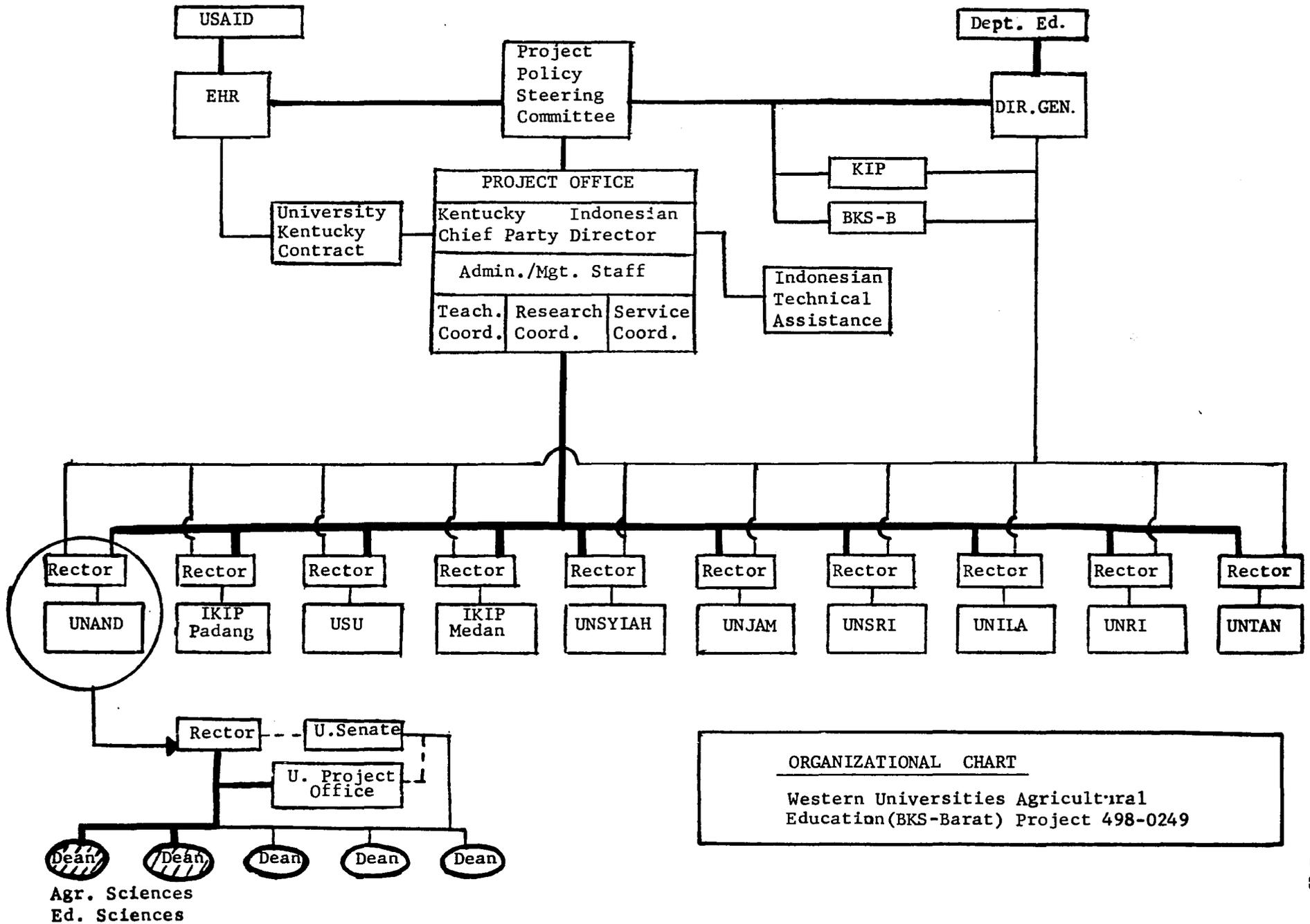
1. Central office

The Western Universities Agricultural Education (BKS/Barat) Project will be administered by a project central office established in Palembang, Sumatra for the project by the Director-General of Higher Education. The Project Office staff will receive broad policy guidance from a Project Policy Steering Committee (PPSC).

2. Project structure and staffing

The Project Office staff will consist of a full time Indonesian Director and three Vice-Directors plus the contract team Chief-of-Party and both long and short-term contract specialists who will be phased in as the project develops. Indonesian short-term specialists will be provided by the Directorate General of Higher Education (DGHE) and BKS/Barat universities as appropriate. The contract Chief-of-Party will serve as a counterpart to the Indonesian Project Director. The long-term specialists will serve as counterparts to the Vice-Directors or to individual university staffs as will be determined by the Project Office and the PPSC. The office will be supported by a staff of up to three bilingual secretaries, four drivers and by a maintenance staff. The office will utilize short-term American and Indonesian technical specialists as required for project implementation.

The Project Office will be directly linked to the Western Indonesian Universities through the Rectors' offices. A project field office will be established within the Rector's office of each participating institution this will serve as the Rector's implementation arm for campus project



ORGANIZATIONAL CHART
 Western Universities Agricultural
 Education (BKS-Barat) Project 498-0249

activities. The universities' Senate will function as an informational link to the faculties, and as a policy advisory body to the Rectors.

3. Project Policy Steering Committee (PPSC)

The PPSC will be composed of the Director General of Higher Education or his designee, the Executive Secretary of the Agricultural Consortium (KIP), the USAID project manager, the Chairman and/or Vice Chairman of BKS/Barat, the Project Director, and the Contract Chief-of-Party.^{1/} The Director General or his designee will chair the PPSC, which will meet at least twice annually.

The PPSC will establish the overall policy framework within which the Project Director and Chief-of-Party are to carry out implementation activities of the project. PPSC responsibilities will also include annual evaluation of the project, approving annual plans of work, approving contractor's technical assistance nominations, and reviewing participant selection. A less formal, but equally important, function will be to serve as a sounding board and advisory body to provide guidance as requested in the solution of problems encountered in program design and implementation. The members of PPSC will also provide liaison with their respective organizations to assure that project activities are consistent with GOI and AID policy guidelines and do not duplicate activities of other projects and programs.

4. Project office and staff

The implementation of this project will be the responsibility of the Project Director. He will supervise the Indonesian staff of the office, and, together with the Chief-of-Party, will be responsible for preparation of annual plans of work, for maintaining liaison with the university Rectors, and for project implementation.

The Project Director must work closely with the university Rectors. If the project is to be successful, it is essential that the Project Director be an individual with substantial experience as an academic administrator who has a good working knowledge of both American and Indonesian higher education and is knowledgeable with respect to Indonesian agriculture and agricultural sciences program activities in universities. Clear understanding of the Directorate General's policy goals for public higher education is required. The Project Director will be appointed by the Director General of Higher Education after the concurrence of the USAID Project Manager.

^{1/} The Project Director and the contract Chief-of-Party will be informal (non-voting) members of the PPSC.

The volunteers will serve primarily as teachers of English to potential participants and university staff. Volunteers will have training or experience as teachers of English as a foreign language.

5. Universities and university project offices

The rectors of the BKS/Barat universities will have responsibility for project activities on their campuses and for the involvement of their staff in project activities. Each rector will have responsibility for selection and nomination of participants for academic training from his/her institution, selection of staff for participation in network activities and maintaining liaison with the central project office in Palembang. To assist the rectors in carrying out these activities, each rector will appoint a member of his staff to assist him in carrying out the project activities. This person will report to the rector or vice-rector I, and will be responsible for day-to-day management of project activities on the campus.

Each university will provide sufficient project funds and facilities to support the project activities including a field vehicle which will be made available for use by central Office Project staff and short-term specialists whenever they are on-campus. In addition vehicles for occasional personal use and appropriate furnished housing and utilities will be provided for all long-term specialists, associates and volunteers assigned to that university.

6. Location of project central office

The central office of the project may be temporarily located in Jakarta upon project initiation. Permanent headquarters will be in Palembang with housing and offices to be supplied by Sriwijaya University with the assistance of the Provincial Government. Supplemental funds for office furniture, equipment, appliances and operating expenses and salary supplements for the project director and vice-director will be supplied by Project loan funds.

7. Participant selection.

Initial participant selection (nominations) for all training will be made by each university from among those candidates who meet the requirements for the particular type and purpose of training to be undertaken. Complete folders for these participants (including, as appropriate, academic transcripts; TOEFL scores or other appropriate English language scores; requested level and field of training; recommendations; for preferred training site) will be forwarded to the central project office. A participant selection committee composed of a representative of the office of the Director General of

The Chief-of-Party of the contract team will function as a counterpart to the Project Director and will be responsible for supervising all Contractor Personnel. This position should be filled by a senior faculty member from the contracting institution who has had prior administrative and professional experience in project implementation of an institution-building nature in a developing country. The Chief-of-Party will be appointed by the University of Kentucky after concurrence of the USAID Project Manager and the Director General of Higher Education.

The Indonesian Vice-Directors and Contractor team members should be senior faculty members who have had significant university research and teaching experience. They will have responsibility for managing the networks^{1/} approved by the Project Policy Steering Committee within their technical expertise, and designing/evaluating short courses and non-degree traineeships. Occasionally, they may also be called upon to teach courses.

As the project matures, and as participants return from advanced training programs, "critical masses" will begin to emerge in the disciplinary areas (e.g. soils, animal science, agricultural economics, library management, pedagogy) but these inevitably will develop at different rates among disciplines and among institutions. As the areas and institutions are identified which are capable of effectively utilizing the services of long-term contract specialists, they will be employed. It is anticipated that most such specialists will be assigned to locations at Sumatran institutions beginning in years three and four of this five-year project phase.

When the second phase of the project is implemented, several institutions should be in a position to effectively utilize on-site, long-term contract specialists. Meanwhile, contract team specialists will also include two categories of junior staff: professional associates and volunteers who qualify as practitioners for the job to be done. The professional associates will be outstanding MS graduates or PhD candidates in the agricultural sciences, social sciences and administration/management areas. The professional associates will be assigned to specific Sumatran Universities for periods of one to two years, where they will undertake such activities as team teaching, participation in network activities, training of junior faculty and laboratory technicians and participation in university research and public service projects. They will work closely in a "hands on" environment with Indonesian colleagues under the direct supervision of the rector or his designate. The US chief-of-party will have overall responsibility for coordinating their general program activities.

^{1/} See "Proposed Scheme for Operation of Network System" found on page 9A of this paper.

Higher Education, the BKS/Barat, the KIP, AID, the project director, and the contract team will meet to approve final selection of participants and alternates as appropriate. This committee will assure that candidates meet all qualifications for the level and nature of training proposed, and that the training proposed is consistent with project purposes and objectives. Participants thus selected will begin preparation, if required, through refresher training, intensive English language training, and other measures as appropriate.

Every effort will be made by the contractor's office in the US to place each USA participant who is to enter formal academic training programs at a university appropriate to his/her interest, purposes, and qualifications.

AID regulations as prescribed in Handbook 10 for participant training in the USA and third countries will prevail. Procedures for in-country training will follow Directorate General of Higher Education Guidelines.

8. Administrative feasibility

The success of this project is partly dependent on its establishing close working relationships and effective informational flows with the Directorate General of Higher Education including the Konsortium of Agricultural Sciences, and ultimately with the Association of Western Universities. Rather than integrating this project into one of these organizations and thereby possibly jeopardizing the relationship with the remaining two, all three will participate in policy decisions and evaluation of the project through membership on the Project Policy Steering Committee. Actual management and day-to-day implementation decision however, remain with the central project office.

The funding of this project includes a grant component to fund technical assistance and contractor's campus backstop components related to technical assistance. The need for grant funding of technical assistance is stressed in the USAID FY 1982 Indonesia Country Development Strategy Statement (January, 1980).

"Grant funds are needed to finance the critical ingredients of US consultant services and technical assistance, training programs and some local operations, particularly where innovation and demonstration are key project elements"

staffing, commodity procurement, and support of the participant training program.

The total administrative structure described in this section has been developed jointly by the GOI (representatives of the Directorate General of Higher Education), USAID (the project manager designated by EHR), and the contract design team from the University of Kentucky. It is considered administratively feasible to implement the activities delineated in this project and to achieve the specified project purpose and objectives.

E. Financial Analysis

An examination of operating budgets of the universities and of the higher education development programs of the Department of Education and Culture indicates that the proposed program is feasible and within the capacity of the institutions to support adequately. The major focus of the project is on improving the professional staff of the universities. These institutions will require additional operating funds for this improved professional staff to be properly utilized. Presumably staff will be promoted more rapidly following upgrading and enhanced on-the-job performance. This will require additional funds. The project will attempt to develop improved program in basic science laboratories, informational services, public service activities and research. Each of these has implications of increased budgetary needs. It is the impression of the project preparation team that sources of such support will be available once the ability to use the additional support is developed and justified in university annual budget submissions.

The basic financial plan for the proposed project is shown in the following tables, "Summary of Cost Estimates and Financial Plan", "Projected Expenditures by Project Years", and "Costing of Project Outputs/Inputs". The total expenditures shown in these tables are considered to be reasonable estimates for a developmental program which realistically balances the needs of the ten institutions and the BKS/Barat with their ability to absorb the development assistance.

Detailed financial data are provided in the Appendix H. The Appendix also contains "Detailed Budget Notes" indicating the derivation of costing estimates.

Summary of Cost Estimates and Financial Plan^{1/}
(US \$000)

PROJECT AREA	AID						GOI		TOTAL PROJECT
	Grant		Loan		Total		Total		
	FX	LC	FX	LC	FX	LC	FX	LC	
I. Participant Training	-	-	6,381	-	6,381	-	-	2,078	8,459
II. Technical Assistance	3,795	-	-	108	3,795	108	-	652	4,555
III. Campus Back Stop (TA)	193	-	-	-	193	-	-	-	193
IV. Project Operations	-	-	-	1,281	-	1,281	-	3,378	4,659
V. Commodities	-	-	650	68	650	68	-	778	1,496
Contingency	12	-	424	88	436	88	-	114	638
TOTAL	4,000	-	7,455	1,545	11,455	1,545	-	7,000	20,000

^{1/} These figures include a compounded adjustment for inflation (8.2%) after year one.

Costing of Project Outputs/Inputs^{1/2/}
(US\$ 000)

Project Operations	Project Outputs ^{3/}							Total
	1 Training	2 Facilities Commodities	3 Network	4 Research	5 Public Service	6 Curriculum English	7 Administration Plan/Evaluation	
<u>AID</u>								
Participant Training	6281	-	-	-	-	-	100	6,381
Technical Assistance	308	302	662	465	430	909	827	3,903
Campus Backstopping (TA)	15	15	33	23	22	44	41	193
Project Operations	130	116	170	124	124	33	584	1,281
Commodities	-	678	-	20	20	-	-	718
Contingency 4.2%	283	47	36	27	25	41	65	524
Total	7017	1158	901	659	621	1027	1617	13,000
<u>GOI</u>								
Participant Training	2078	-	-	-	-	-	-	2,078
Technical Assistance	74	60	95	88	82	133	120	652
Campus Backstopping (TA)	-	-	-	-	-	-	-	-
Project Operations	130	137	765	135	155	160	1876	3,378
Commodities	-	608	-	9	10	-	151	778
Contingency 1.7%	38	13	14	4	4	5	36	114
Total	2320	818	874	256	251	298	2183	7,000

^{1/}Inflation adjusted at 8.2 per cent per year after year one.

^{2/}Contractor overhead on all contract costs included: 18 per cent Indonesia based; 25 per cent U.S. based.

^{3/}Outputs:

1. A better trained professional staff in R+AD and supporting areas.
2. University facilities (classrooms, laboratories, field facilities, libraries, and printing facilities) meet minim requirements.
3. BKS networks established and functioning.
4. Research undertaken by university staff.
5. Public service activities increasingly meet needs.
6. Curriculum and teaching methods revised and strengthened and improved English training.
7. The administration and organization of the universities better adapted to meet the increasingly demands upon the university.

IV. IMPLEMENTATION PLAN

A. Introduction

Delineated below is a schedule of key implementation actions. It features regular evaluation of project programs, an orderly expansion of staff and participants as absorptive capacity of the participating universities increases, and revision of implementation plans through the preparation of annual plans of work to be approved by the Project Policy Steering Committee.^{1/} Arrivals of project personnel are scheduled to be congruent with the U.S. academic year in order to minimize conflict with U.S. teaching responsibilities. Annual plans of work are scheduled so that they are coordinated with the GOI fiscal year (April 1 - March 31).

B. Detailed Implementation Schedule

<u>Month</u>	<u>Action</u>	<u>Implementing Responsibility</u>
1	Selection of U.S. institution for collaborative assistance	AID/W
2	Contract signed for Project Preparation Team	AID/W, CONTRACTOR
2	PP Team arrives Indonesia	CONTRACTOR/USAID/GOI
4	PP Team completes draft PP	CONTRACTOR/USAID
4	Meeting of BKS/B, GOI, USAID	GOI/USAID
7	Final PP completed and forwarded to AID/W	USAID/GOI
8	Universities submit training nominations	UNIVERSITIES
8	PP approved	AID/W
10	First year participants' applications sent to appropriate graduate schools (U.S. and Indonesian)	GOI
11	PROAG signed	USAID/GOI
11	First year participants intensive English course initiated	GOI
13	Loan Agreement signed	GOI/USAID
14	Implementation contract signed	CONTRACTOR and AID/W
15	Indonesian Project Director and Deputy appointed	GOI

^{1/}If the signing of the contract is delayed beyond April, 1981, this entire schedule will require revision. First year participants' departures will be delayed to June, 1982, and this will require extending the contract by one year if foreign training outputs are to be achieved.

<u>Month</u>	<u>Action</u>	<u>Implementing Responsibility</u>
16	First year foreign participants depart Indonesia	USAID/GOI
16	Chief-of-Party and administrative specialist arrive Indonesia	CONTRACTOR/USAID/GOI
16	First meeting, Project Steering Committee	GOI/CONTRACTOR/USAID
18	First group long-term in-country participants begin study	CONTRACTOR/GOI
18	Contract staff completes language training	CONTRACTOR
18	Universities submit training nominations	BKS/B Universities
19	Third long-term advisor arrives	CONTRACTOR/USAID/GOI
19	Second year participants selected	SELECTION COMMITTEE
20	Second year participants records sent to Campus Coordinator	CONTRACTOR
21	Third advisor completes language training	CONTRACTOR
21	First volunteer arrives	CONTRACTOR/USAID/GOI
22	Network design completed	CONTRACTOR/GOI/BKS-B
23	First year commodities ordered	CONTRACTOR/GOI
23	Second year foreign participants begin English training	CONTRACTOR/GOI
24	First annual work plan completed	CONTRACTOR
24	First network meeting held	CONTRACTOR/BKS-B
25	First annual work plan approved	STEERING COMMITTEE
26	Second year participants refresher course begins	CONTRACTOR/GOI
27	Three professional associates and three volunteers arrive Indonesia	CONTRACTOR/GOI/USAID
28	Second year foreign participants depart	CONTRACTOR/GOI
28	Second year commodities ordered	CONTRACTOR/GOI
30	Universities submit training nominations	BKS/B UNIVERSITIES
30	Second year in-country participants begin studies	CONTRACTOR/GOI

<u>Month</u>	<u>Action</u>	<u>Implementing Responsibility</u>
31	Third year participants selected	SELECTION COMMITTEE
32	Third year foreign participants' records sent to Campus Coordinator	CONTRACTOR
35	Third year foreign participants begin intensive English	CONTRACTOR/GOI
35	First annual evaluation completed	GOI/USAID/STEERING COMMITTEE
36	Second annual work plan completed	CONTRACTOR
37	Second annual work plan approved	STEERING COMMITTEE
38	Third year participants intensive refresher course begins	CONTRACTOR/GOI
38	Third year commodities ordered	CONTRACTOR/GOI
39	Chief-of-Party renewed or replaced	CONTRACTOR/GOI/USAID
39	Administrative specialist departs Indonesia	CONTRACTOR
39	Two long-term team members arrive; professional associates renewed/replaced plus one additional; volunteers renewed/replaced	CONTRACTOR/USAID/GOI
40	First year MS participants complete studies and return	CONTRACTOR/GOI
40	Third year foreign participants depart	CONTRACTOR/GOI
41	New team members complete language training	CONTRACTOR
41	Long-term advisor replaced or renewed	CONTRACTOR/USAID/GOI
42	Universities submit training nominations	BKS/B UNIVERSITIES
42	Third year in-country participants begin studies	CONTRACTOR/GOI
43	Fourth year participants selected	SELECTION COMMITTEE
44	Fourth year foreign participants' records sent to Campus Coordinator	CONTRACTOR
47	Fourth year foreign participant begin English	CONTRACTOR/GOI
47	Second annual evaluation completed	GOI/USAID/STEERING COMMITTEE
48	Third annual work plan completed	CONTRACTOR

<u>Month</u>	<u>Action</u>	<u>Implementing Responsibility</u>
49	Third work plan approved	STEERING COMMITTEE
50	Fourth year participants refresher course begins	CONTRACTOR/GOI
51	One additional long-term advisor arrives; professional associates renewed/replaced; one volunteer replaced/renewed; and two volunteers depart	CONTRACTOR/USAID/GOI
51	Fourth year commodities ordered	CONTRACTOR/GOI
52	Fourth year foreign participants depart	CONTRACTOR/GOI
52	Second year MS participants complete studies and return	CONTRACTOR/GOI
52	Long-term advisor arrives; volunteers, professional associates renewed/replaced	CONTRACTOR/USAID/GOI
54	Fourth year in-country participants begin studies	CONTRACTOR/GOI
59	Fourth work plan completed	CONTRACTOR
60	Fourth work plan approved	STEERING COMMITTEE
60	External evaluation begins	AID/W/GOI/USAID
63	Chief-of-Party, three advisors, volunteer, associates renewed/replaced	CONTRACTOR/USAID/GOI
63	Fifth year commodities ordered	CONTRACTOR/GOI
64	First year PhD and third year MS participants complete studies and return	CONTRACTOR/GOI
75	Contract team departs - phase I completed	CONTRACTOR/USAID
76	Second year PhD and fourth year MS participants complete studies and return	CONTRACTOR/GOI
109	Final evaluation completed	AID/W/USAID/GOI/ CONTRACTOR

V. EVALUATION ARRANGEMENTS FOR THE PROJECT

A. Annual Review

This project will be reviewed annually by a team composed of one representative each of the Directorate General of Higher Education, the BKS/Barat, the Project Director, USAID/EHR, and the Contract Team. The initial evaluation should be carried out approximately twelve months following the arrival in Indonesia of the contract team and initiation of project activities. This annual review will be concerned primarily with progress of the project in terms of quality, quantity, and timeliness of inputs provided and outputs derived, and to insure that the project is following the path delineated by the overall goal and purpose statements. It is anticipated that the BKS/Barat representative, prior to the review, will have made a concerted effort to solicit the views and recommendations of the ten participating universities and will reflect their input to the review. Modifications in project work plan and activities will be based upon this review. The results of the review will be prepared in writing and made available to all parties participating in the project.

B. External Review

Approximately forty-two months following the arrival of the contract team and initiation of project activities, an in-depth review of project progress will be undertaken by a team external to Indonesia. This team should be composed of persons knowledgeable and experienced in the development of agricultural education institutions of higher learning in developing nations; the United States land-grant college system; and USAID project evaluation procedures regarding projects of this nature. It is considered desirable that at least some of the team have prior Indonesian experience. The focus of the review and the reporting procedures will be similar to those outlined above for the annual review. More emphasis will be devoted, however, to assessing progress towards the specific goals of upgrading of professional staff; establishment and functioning of networks; improvement of laboratory, library, and experiment-farm facilities, improvement of course curricula, outlines, and teaching materials; strengthening of English training programs; strengthening of research program and research productivity; and strengthening of public service program. Success, failures, constraints and necessary actions to be taken will be specified in the evaluation report.

To the extent requested, the Project Office staff and the annual review team will cooperate in data collection, field site visits and other arrangements.

This external review will serve in lieu of the fourth annual internal review, and will provide the basis for recommendations regarding any further USAID assistance to the development of the Western Universities.

C. Completion of Project Review

Three years following the completion of the project, a final evaluation and review will be undertaken to measure the effectiveness and impact of the project. This review will be carried out by a team composed of at least one

representative each of the GOI, USAID/W, USAID/Jakarta, and the Contract Institution. Funding for this review should be provided directly from AID/W sources.

D. Continuing Operational Review

The project staff, in cooperation with the Project Policy Steering Committee, will conduct continuing informal monitoring and review activities. This will provide the basis for modification in operational emphasis as the project matures and changing needs of the participating universities are identified.

E. Baseline Data

Although reliable baseline data are scarce, some data have been generated by a BKS/Barat survey of the participating institutions; the survey conducted by the joint GOI/USAID/University of Kentucky project design team (April - May 1980); an IBRD manpower survey; an Asian Development Bank study of Northern Sumatra University; and data of the Directorate-General of Higher Education. It is anticipated that further baseline data will be generated by the project office staff in the form of trip reports, subject matter reports, and so forth, once project activities are initiated.

VI. CONDITION PRECEDENT, COVENANTS, AND NEGOTIATING STATUS

A. Conditions Precedent

In addition to the standard Conditions Precedent (opinion of Ministry of Justice and names of Borrower's authorized representative) the Project Loan Agreement and Grant Agreement, as appropriate, will contain the following Conditions Precedent:

1. Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement, the Cooperating Country shall furnish in form and substance satisfactory to AID: a) Assurance that the Directorate General of Higher Education concurs with the implementation plan prepared by the Project Design Team and detailed in the Project Paper and/or indicates to AID any deviation from the plan that he deems necessary; and b) Assurance that the Central Project Office of the Directorate General of Higher Education has been established, and provide office space, and that the Director and minimum staff are appointed.
2. Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement to finance training, the Cooperating Country shall furnish in form and substance satisfactory to AID a training plan detailing among other things the course description, cost estimate of training, selection criteria, selection procedures and the establishment of a Selection Committee.
3. Prior to the signing of the technical assistance contract, the Cooperating Country shall furnish in form and substance satisfactory to AID, a time phased procurement plan for the acquisition of staff housing, office space, and vehicles for the technical assistance advisors. This plan shall include locations, description, dates of acquisition and concurrence of each respective university Rector responsible at each location.

B. Covenants

In addition to the standard covenant, the Project Agreement will contain a covenant in which the cooperating country agrees to establish the Project Steering Committee as envisioned by the Project Design team and described in the Project Paper.

C. Negotiating Status

The Project Design Team was made up of Indonesian officials, University of Kentucky, faculty and USAID officers (see Annex L) and was developed in the collaborative style. The Indonesian offices and universities concerned with the project were directly involved in the development and the Design Team is confident that the project presented in this paper has the complete agreement of the Government of Indonesia.

A N N E X

AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT IDENTIFICATION DOCUMENT FAGESHEET <i>To Be Completed By Originating Office</i>				1 TRANSACTION CODE <input checked="" type="checkbox"/> A - Add <input type="checkbox"/> C - Change <input type="checkbox"/> D - Delete		PID 7 DOCUMENT CODE 1			
3. COUNTRY/ENTITY INDONESIA				4. DOCUMENT REVISION NUMBER. <input type="checkbox"/>					
6. PROJECT NUMBER (7 digits) [497-0297]		6. BUREAU/OFFICE A. Symbol ASIA B. Code [04]		7. PROJECT TITLE (maximum 40 characters) TITLE XII - SUMATRAN UNIVER- SITIES AGRICULTURAL PROGRAMS					
8. PROPOSED NEXT DOCUMENT A. <input checked="" type="checkbox"/> 2 - PRP B. DATE MM YY [02/79] <input type="checkbox"/> 3 - PP				10. ESTIMATED COSTS (\$000 or equivalent, \$1 = Rp. 414.50) FUNDING SOURCE % of Total					
9. ESTIMATED FY OF AUTHORIZATION/OBLIGATION a. INITIAL FY [810] b. FINAL FY [810]				a. AID Appropriated 5000 b. OTHER: 1. _____ US 2. _____ 2000 c. Host Country _____ d. Other Donor(s) _____ TOTAL 7000					
II PROPOSED BUDGET AID APPROPRIATED FUNDS (\$000)									
A. APPROPRIATION		B. PRIMARY PURPOSE CODE		C. PRIMARY TECH CODE		E. FIRST FY 80		LIFE OF PROJECT	
				C. Grant D. Loan		F. Grant G. Loan		H. Grant I. Loan	
(1) FN		210B		690 690		1000 4000		1000 4000	
(2)									
(3)									
(4)									
				TOTAL		1000 4000		1000 4000	
12. SECONDARY TECHNICAL CODES (maximum six codes of three positions each): 070 250 060 620 660								14. SECONDARY PURPOSE CODE 680	
13. SPECIAL CONCERNS CODES (maximum six codes of four positions each): XII BR TECH TNG									
15. PROJECT GOAL (maximum 240 characters) [To improve Indonesia's ability to feed its people and provide a decent livelihood for the rural poor.]									
16. PROJECT PURPOSE (maximum 480 characters) [To strengthen the capability of the Association of Sumatran Universities to play increasingly effective roles in agricultural and rural development.]									
17. PLANNING RESOURCE REQUIREMENTS (staff/funds) Title XII collaborative assistance arrangement with U.S. university - \$100,000 PDSF.									
18. ORIGINATING OFFICE CLEARANCE Signature: Thomas C. Niblock <i>[Signature]</i> Title: Director, USAID/Indonesia						19. Date Document Received in AID/W, or for AID/W Documents, Date of Distribution Date Signed: MM DD YY [05/01/78]			

4. ENGLISH LANGUAGE TRAINING - WE UNDERSTAND THAT ENGLISH LANGUAGE COMPETENCE HAS BEEN SERIOUS CONSTRAINT FOR SENDING FACULTY MEMBERS FROM OUTER ISLAND UNIVERSITIES TO U.S. FOR GRADUATE STUDY. RP SHOULD DISCUSS HOW THIS CONSTRAINT IS BEING ADDRESSED IN ORDER TO FACILITATE RAPID IMPLEMENTATION OF SUBJECT PROJECT.

PAGE: 2

5. TEXTBOOK FINANCING - PID SUGGESTS THAT AID FUNDS WILL BE USED TO PURCHASE INDONESIAN LANGUAGE TEXTBOOKS. APAC VIEW IS THAT LOCAL TEXTBOOK FINANCING SHOULD BE ON GOI ACCOUNT TO PROMOTE ADEQUATE RECURRENT BUDGET PROVISION FOR THIS PURPOSE. MORE APPROPRIATE USE OF AID FUNDS IN THIS AREA WOULD BE FOR DEVELOPMENT OF IMPROVED INDONESIAN TEXTS. VANCE
BT
05015

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INITIAL ENVIRONMENTAL EXAMINATION

TITLE XII - SUMATRAN UNIVERSITIES AGRICULTURAL PROGRAMS

Project Location: Indonesia
Project Title: Title XII - Sumatran Universities
Agricultural Programs
Funding: \$5.0 million
Life of Project: 1980-1984
IEE Prepared by: USAID/Indonesia
Environmental Action
Recommended: Negative Determination

Mission Director's
Concurrence:


Date: _____
Thomas C. Niblock

Assistant Administrator's
Decision:

Approved: _____

Disapproved: _____

Date: _____

INITIAL ENVIRONMENTAL EXAMINATION

TITLE XII - SUMATRAN UNIVERSITIES AGRICULTURAL PROGRAMS

I. Examination of Nature, Scope and Magnitude of Environmental ImpactA. Project Description

This project is to strengthen the capability of the Association of Sumatran Universities to play an increasingly effective role in agricultural and rural development. It will provide technical assistance, training of staff members, and essential instructional equipment and materials to the member universities to make their agricultural programs more relevant to development requirements.

B. Identification and Evaluation of Environmental Impacts

Since this project will be to develop the capabilities of several universities, it will have little or no direct impact on the environment; however, it provides an opportunity to demonstrate environmental concepts to teachers who will be influential in shaping agricultural development in Sumatra. An especially important endeavor that is likely to be of concern to these faculties and their graduates is planning the opening of forested regions for agriculture for transmigrant settlements. A long-range perspective on natural resource utilization will be important for local decision makers who, through their decisions in the next decade, will determine future land use in Sumatra.

II. Recommendation for Environmental Action

A negative determination is recommended because the project involves training that has no direct environmental impact; however, some exposure to environmental concepts should be included, wherever appropriate, in the training programs.

PROJECT LOGICAL FRAMEWORK

PROJECT LOGICAL FRAMEWORK

For Period: _____ to _____

Project Title: Sarjana Agriculture Education Programs

Date Prepared: _____

NARRATIVE SUMMARY	OBJECTIVELY VERIFYABLE INDICATORS	IMPORTANT ASSUMPTIONS	MEANS OF VERIFICATION																																				
<p>Program or Sector Goal: To improve Indonesia's ability to feed its people and provide a decent livelihood for the rural poor.</p>	<p>Measures of Goal Achievement: 1. Increased production of rice, fruits, vegetables, legumes, beef, poultry and other farm products. 2. Higher rural standards of living. 3. Increased rural employment.</p>	<p>1. University graduates contribute to rural and agricultural development (R+AD). 2. University public service programs facilitate R+AD. 3. University research programs produce knowledge needed for R+AD. 4. GOI continues to support R+AD with appropriate policies, programs and funding and incorporates the educational, research, public service programs of the universities into its programs for R+AD. 5. The Indonesian economy does not deteriorate.</p>	<p>1. BKS Barut statistics 2. GOI and university studies</p>																																				
<p>Project Purpose: To strengthen the capability of the member institutions of the Association of Western Universities (BKS-Barat) to play increasingly effective roles in Agricultural and Rural Development by: 1) Improved staff, teaching and better trained graduates. 2) Institutionalized system of university/rural public service. 3) Organized and integrated faculty research.</p>	<p>Conditions Expected at End of Project: 1a. Significant number of university staff upgraded through approved study programs. 1b. Full implementation of an academic credit system. 1c. Increased quality of R & AD graduates. 2a. Establishment of Institute for Public Service at each university. 2b. Linkages with GOI ministries and offices established. 2c. Goals and role of public service programs defined and administrative procedures designed. 3a. Institute for research strengthened at each university. 3b. Research administrative and dissemination processes established. 3c. Linkages with other research agencies developed.</p>	<p>1. Continued growing demand for higher education. 2. Primary and secondary education maintain quality. 3. GOI committed to and funds growth of education, research and public service programs. 4. GOI ministries and offices desire linkages with universities. 5. Universities' staffs committed to teaching, research and public service.</p>	<p>1. University records and survey of employers. 2. University records and discussions with public service agencies. 3. University records and discussions with research agencies. 4. Joint GOI/USAID evaluation studies (PES and special evaluation)</p>																																				
<p>Outputs: 1. A better trained professional staff in R+AD and supporting areas. 2. University facilities (classrooms, laboratories, field facilities, libraries, and printing facilities) meet minimum requirements. 3. BKS networks established and functioning. 4. Research undertaken by university staff. 5. Public service activities increasingly meet needs. 6. Curriculum and teaching methods revised and strengthened and improved English training. 7. The administration and organization of the universities better adapted to meet increasing demands such as staffing, program planning, evaluation, accreditation, student services and facility requirements. 8. Credit system fully implemented in all agriculture related faculties of project universities establishing Sarjana degrees based on 144 minimal to 160 maximal credit hours.</p>	<p>Magnitude of Outputs: 1. 40 Ph.D. 50 non-degree programs. 140 M.S. 440 staff in inservice short courses. 2. classrooms built or renovated. laboratories built or renovated. All laboratories meet minimum needs field facilities developed. All libraries collections expanded. All faculties have duplication facilities and access to printing facilities. 3. 6 networks established. 4. Annual publication of research results increased to at least 10 per faculty. 5. Annual release of at least 10 leaflets and other publications by each faculty. At least 5 short courses to public and civil servants by each faculty. 6. Course syllabi in basic sciences revised and standardized. 3 course syllabi in agriculture revised and standardized. 3 laboratory manuals prepared. Use of libraries by agricultural students increased 100 percent. One third of agricultural faculty prepare and distribute course outlines. Reading assignments and tests routinely given. 7. Administrators undertake non-degree training programs. Record systems improved and adapted to credit system. 8. Universities and 2 IKIPs establish 13 Sarjana degrees based on 140 (minimum) 160 (maximum) credit hours achievable in four years consecutive study.</p>	<p>1. Sufficient qualified candidates for English training and for overseas training. 2. Universities can release sufficient number of staff for training. 3. Staff desires further training. 4. GOI funds construction and equipment. 5. Staff desires participation in networks. 6. Staff committed to research and public service. 7. Staff willing to change syllabic and teaching methods. 8. Commodities and technical services meet CPI indicators.</p>	<p>University and project records.</p>																																				
<p>Inputs:</p> <table border="1" data-bbox="431 1328 812 2049"> <thead> <tr> <th></th> <th colspan="2">(US \$000)</th> <th></th> </tr> <tr> <th></th> <th>Grant</th> <th>Loan</th> <th>GOI</th> </tr> </thead> <tbody> <tr> <td>Training</td> <td></td> <td>6,381</td> <td>2,078</td> </tr> <tr> <td>Technical Assistance</td> <td>3,795</td> <td>108</td> <td>652</td> </tr> <tr> <td>University Backstopping</td> <td>193</td> <td>*</td> <td>-</td> </tr> <tr> <td>Project Operations</td> <td>-</td> <td>1,281</td> <td>3,378</td> </tr> <tr> <td>Commodities</td> <td>-</td> <td>718</td> <td>778</td> </tr> <tr> <td>Contingency</td> <td>12</td> <td>512</td> <td>114</td> </tr> <tr> <td></td> <td>4,000</td> <td>9,000</td> <td>7,000</td> </tr> </tbody> </table> <p>*included in training costs.</p>		(US \$000)				Grant	Loan	GOI	Training		6,381	2,078	Technical Assistance	3,795	108	652	University Backstopping	193	*	-	Project Operations	-	1,281	3,378	Commodities	-	718	778	Contingency	12	512	114		4,000	9,000	7,000		<p>1. GOI and AID disburse funds in a timely fashion. 2. Contractor supplies services of qualified and committed professionals. 3. GOI assigns senior Project Director and Co-Director, and delegates necessary authority. 4. GOI assigns appropriate level of counterparts to contractor technical assistance personnel.</p>	<p>Project, University, GOI records.</p>
	(US \$000)																																						
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STATUATORY CHECKLIST

PROJECT PAPER CHECKLIST FOR: WESTERN UNIVERSITIES AGRICULTURE EDUCATION PROJECT

Listed below are statutory criteria applicable generally to projects with FAA funds and project criteria applicable to individual fund sources Development Assistance (with a subcategory for criteria applicable only to loan); and Economic Support Fund.

A. GENERAL CRITERIA FOR PROJECT

1. FY 79 App. Act Unnumbered; FAA SEC. 653(b); Sec. 634A.
(a) Describe how Committees on appropriations of Senate and House have been or will be notified concerning the Project
(b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than \$1 million over that figure?)
(a) Project is in the FY 80 Congressional Presentation
(b) YES
2. FAA Sec. 611(a)(1). Prior to obligation in excess of \$100,000, will there be (a) engineering, financial, and other plans necessary to carry out the assistance and (b) reasonably firm estimate of the cost to the U.S. of the assistance?
YES
3. FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance?
N/A
4. FAA Sec. 611(b); FY 79 App. Sec. 101. If for water or water-related land resource construction, has project met the standards and criteria as per the Principles and Standards for Planning Water and Related Land Resources dated October 25, 1973?
N/A

5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability effectively to maintain and utilize the project? N/A
6. FAA Sec. 209. Is project susceptible of execution as part of regional or multi-lateral project? If so why is project not so executed? Information and conclusion whether assistance will encourage regional development programs. N/A
7. FAA Sec. 601(a). Information and conclusion whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions. Project should improve technical efficiency of agriculture and strengthen university involvement in community service activities including cooperatives.
8. FAA Sec. 601(b). Information and conclusion on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise.) As an Education activity the project will not particularly effect U.S. private trade and investments. Some training will be in U.S. educational institutions arranged by U.S. Contractor and the technical assistance will come from a U.S. university.

9. FAA Sec. 612(b). Sec. 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized to meet the cost of contractual and other services. The GOI is providing equivalent of \$7.0 million toward the project, and will essentially cover the local cost.
10. FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release? NO
11. FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise? YES
12. FY 79 App. Act Sec. 608. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity? N/A

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

- a. FAA Sec. 102(b); 111; 113; 281a. Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of The primary purpose of this project is to improve agriculture which directly affects the rural poor. In addition, another important element of the project is the development of community services, which again affects the rural poor directly.

development on a sustained basis, using the appropriate U.S. institutions; (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage demonstratic private and local governmental institutions; (c) support the self-help efforts of developing countries; (d) promote the participation of women in the national economics of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries?

The project promotes the participation of women in both academic and community affairs.

b. FAA Sec. 103, 103A, 104, 105, 106, 107. Is assistance being made available: (discuss only applicable paragraph which corresponds to source of funds used. If more than one fund source is used for project, discuss relevant paragraph for each fund source.)

FAA Section 103.

(3)(105) for education, public administration, or human resources development; if so, extent to which activity strengthens nonformal education, makes formal education more relevant, especially for rural families and urban poor, or strengthens management capacity of institutions enabling the poor to participate in development.

Project is directly related to strenthening Indonesian agricultural and educational institutions to develop their technical, instructional and mangerial capacity.

(c) FAA Sec. 110(a). Will the recipient country provide at least 25 per cent of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or has the latter cost-sharing requirement been waived for a "relatively least-developed" country?)

YES. The Indonesian Government will provide \$7 million of the \$20 million project i.e.: 35 per cent. (54% of total AID contribution).

d. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to Congress been made, and efforts for other financing, or is the recipient country "relatively least developed?"

N/A

e. FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civil education and training in skills required for effective participation in governmental and political processes essential to self-government.

See Social Soundness Analysis of Paper.

f. FAA Sec. 122(b). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth?

YES

2. Development Assistance Project Criteria (Loans only)

a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan, including reasonableness of repayment prospects.

Indonesia has adequate reserves to cover borrowing and is current on payments. Repayment prospects are good.

b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete in the U.S. with U.S. enterprise, is there an agreement by the recipient country to prevent export to the U.S. of more than 20 per cent of the enterprise's annual production during the life of the loan?

N/A

3. Project Criteria Solely for Economic Support Fund N/A

a. FAA Sec. 531(a). Will this assistance support promote economic or political stability? To the extent possible, does it reflect the policy directions of Section 102? N/A

b. FAA Sec. 533. Will assistance under this chapter be used for military, or para-military activities? N/A

PROJECT AUTHORIZATION

Name of Country: INDONESIA

Name of Project: Western Universities
Agricultural Education

Number of Project: 497-0297

1. Pursuant to Section _____ of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Western Universities Agricultural Education Project for Indonesia involving planned obligations of not to exceed \$9.0 million in loan funds and \$4.0 million in grant funds over a five year period from date of authorization, subject to the availability of funds in accordance with the AID OYB/allotment process, to help in financing foreign exchange (and local currency, if applicable) costs for the project.

2. The project consists of strengthening the capabilities of the member institutions of the Association of Western Universities to contribute to agricultural and rural development by assisting in;

- a. improving staff, teaching and producing better graduates;
- b. institutionalizing of a system of university rural public service; and
- c. organizing and integrating faculty research.

3. The Project Agreement(s) which may be negotiated and executed by the officer(s) to whom such authority is delegated in accordance with AID regulations and Delegations of Authority shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as AID may deem appropriate.

4. a. Interest Rate and Terms of Repayment

The Cooperating Country shall repay the Loan to AID in US dollars within forty (40) years from the date of first disbursement of the Loan, including a grace period of not to exceed ten (10) years. The Cooperating Country shall pay to AID in U.S. Dollars interest from the Date of first disbursement of the Loan at the rate of (a) two percent (2%) per annum during the first ten (10) years, and (b) three percent (3%) per annum thereafter, on the outstanding disbursed balance of the Loan and on any due and unpaid interest accrued thereon.

b. Source and Origin of Goods and Services

Goods and services, except for ocean shipping, financed by AID under the project shall have their source and origin in the Cooperating Country or in the United States for grant funds and in countries included in AID Geographic Code 941 for the Loan except as AID may otherwise agree in writing.

Ocean shipping financed by AID under the project shall, except as AID may otherwise agree in writing, be financed only on flag vessels of the United States and Indonesia.

c. Other

1. Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement, the Cooperating Country shall furnish in form and substance satisfactory to AID, assurance that the Directorate General of Higher Education concurs with the implementation plan prepared by the Project Design team and detailed in the Project Paper.

2. Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement to finance training the Cooperating Country shall furnish in form and substance satisfactory to AID, a training plan detailing among other things the course description, cost of training, selection criteria, selection procedures and the establishment of a Selection Committee.


REPUBLIC OF INDONESIA
NATIONAL DEVELOPMENT PLANNING AGENCY
JAKARTA, INDONESIA

No. 2562/D.I/10/1980

1 October 1980

Mr. Thomas C. Niblock,
Director
USAID Mission to Indonesia,
c/o American Embassy,
Jakarta.

Dear Mr. Niblock,

Re: Western Universities Agriculture Education

This is a request to the Government of the United States of America for financial assistance of up to US \$ 13,000,000 (thirteen-million US dollars) on the basis of US \$ 9,000,000 (nine million US dollars) in loan funds and US \$ 4,000,000 (four million US dollars) in grant.

The main purpose of the financial assistance is to strengthen the capability of ten Western Region institutions of higher education to play increasingly effective roles in Agricultural and Rural Development by:

1. improved staff, teaching and better trained graduates;
2. institutionalized systems of university/rural public service;
3. organized and integrated faculty research.

Thanking you for your cooperation.



Sincerely yours,


Saleh Afiff
Deputy Chairman

- cc. : 1. Secretary General,
Dept. of Education and Culture
2. Director General of
International Monetary Affairs,
Department of Finance.

DETAILED BUDGET NOTES

B U D G E T N O T E S

I. Training Costs

(Loan) U.S. Academic \$ 19,200 per year
 (Loan) U.S. Non Academic 3,000 per month
 (Loan) 3rd Country Academic 8,000 per year
 (GOI) In-Country Academic 5,500 per year
 (GOI) Participant Salary 2,400 per year

Note: The \$19,200 per year is the USAID prescribed estimate. For this program, it includes international travel, participant backsopping cost and inflation.

Y E A R																	
P/Y	Degrees	Type	1			2			3			4			5		
			P/Y	Loan \$ 000	GOI \$ 000	P/Y	Loan \$ 000	GOI \$ 000	P/Y	Loan \$ 000	GOI \$ 000	P/Y	Loan \$ 000	GOI \$ 000	P/Y	Loan \$ 000	GOI \$ 000
180	90	U.S. MS	20	384.0	48.0	45	864.0	108.0	45	864.0	108.0	45	864.0	108.0	25	480.0	60.0
104	26	U.S. Ph.D.	10	192.0	24.0	26	499.2	62.4	26	499.2	62.4	26	499.2	62.4	16	307.2	38.4
16	8	3rd MS	-			4	32.0	9.6	4	32.0	9.6	4	32.0	9.6	4	32.0	9.6
16	4	3rd Ph.D				4	32.0	9.6	4	32.0	9.6	4	32.0	9.6	4	32.0	9.6
100	50	IC MS	25		197.5	25		197.5	15		118.5	25		197.5	10		79
60	20	IC Ph.D	5		39.5	10		79.0	20		158.0	15		118.5	10		79
10	20	Sandwich				3	57.6	7.2	3	57.6	7.2	2	38.4	4.8	2	38.4	4.8
160 M	50	U.S. Non-Ac.	20 M	60.0	4.0	40 M	120.0	8.0	40 M	120.0	8.0	40 M	120.0	8.0	20 M	60.0	4.0
Loan \$			636,000			1,604,800			1,604,800			1,585,600			949,600		
G O I \$			313,000			481,300			481,300			518,400			284,400		
T o t a l \$			949,000			2,086,100			2,086,100			2,104,000			1,234,000		

Loan \$ 6,380,800
 GOI 2,078,400

 Total \$ 8,459,200

II. Technical Assistance

A. Long-term - Sumatra (Cost per Professional per Year - Family of 4)

Off campus base	\$ 40,000
Fringe benefits (16%)	6,400
Workman's camp (7%)	2,800
Post differential (25%)	10,000
Intensive Indonesian	1,350
Educational allowance (1½ child)	12,750
½ Shipping and storage	6,000
Travel (one way - 4 persons)	5,200
*(Grant) Sub Total	<u>\$ 84,500</u>
(GOI) Housing/Utilities	<u>18,000</u>
Total	<u>\$ 102,500</u>

<u>Year</u>	<u>P/Y</u>	<u>Total Cost</u>	<u>Grant Cost</u>	<u>GOI Cost</u>
1	2.5	256,250	211,250	45,000
2	3	307,500	253,500	54,000
3	4	410,000	338,000	72,000
4	5	512,500	422,500	90,000
5	5	512,500	422,500	90,000
Total	19.5	1,998,750	1,647,750	351,000

*Note: 18% (\$15,120) overhead charged in separate line item.
 RR charged in other international transportation.
 Passports/medical exam included in travel.

B. Professional Associate (Cost per Year - wife, no family)

Salary	\$ 12,000
Fringe benefits (16%)	1,920
Workman's comp. (7%)	840
Post differential (25%)	3,000
Passport, shots	190
Indonesian language	1,300
Airfreight	1,150
Travel to post (2)	2,600
	<hr/>
*(Grant) Sub Total	\$ 23,000
(GOI) Housing /Utilities	6,300
	<hr/>
Total	\$ 29,000

<u>Year</u>	<u>P/Y</u>	<u>Total Cost</u>	<u>Grant Cost</u>	<u>GOI Cost</u>
1	-	-	-	-
2	3	\$ 87,000	\$ 69,000	\$ 18,000
3	4	116,000	92,000	24,000
4	4	116,000	92,000	24,000
5	3	87,000	69,000	18,000
		<hr/>	<hr/>	<hr/>
Total	14	\$ 406,000	\$ 322,000	\$ 84,000

*R&R included in other international travel.

C. Volunteer Cost

Contract cost per year	\$ 12,000
Transportation (1 way)	1,300
* (Grant) Sub Total	\$ 13,300
(GOI) Housing/Utilities	6,000
Total	\$ 19,300

<u>Year</u>	<u>Person/Years</u>	<u>Total Cost</u>	<u>Grant Cost</u>	<u>GOI Cost</u>
1	3	\$ 57,900	\$ 39,900	\$ 18,000
2	5	96,500	66,500	30,000
3	5	96,500	66,500	30,000
4	3	57,900	39,900	18,000
5	2	38,600	26,600	12,000
Total	18	\$ 347,400	\$ 239,400	\$ 108,000

*R and R included in other international travel.
Passports and medical exam included in contract cost.

D. Short-term Cost per Month (assume 2 months stay)

Salary (40,000 yr)	\$ 3,334
Fringe benefits (16%)	533
Workman's comp. insurance (7%)	233
Post differential (after 43 days)	250
Travel to and from	1,300
* (Grant) Sub Total	\$ 5,650
(Loan) Per diem in Indonesia	1,500
Total	\$ 7,150

<u>Year</u>	<u>Months</u>	<u>Total Cost</u>	<u>Grant Cost</u>	<u>Loan Cost</u>
1	8	\$ 57,200	\$ 45,200	\$ 12,000
2	15	107,250	84,750	22,500
3	15	107,250	84,750	22,500
4	15	107,250	84,750	22,500
5	8	57,200	45,200	12,000
Total	61	\$ 436,150	\$ 344,650	\$ 91,500

*Passport and medical exam included in travel.

E. Other International Travel (Grant)

1. R and R @ \$930.00

- (a) 2 x long-term person/years = 39
 (b) 1 x professional associate person/year = 14
 (c) 5 x volunteer person/year = 9

2. Emergency/Medical

- 4 trips total @ \$2,600 = \$ 10,400
 24 trips total @ \$150 = 3,600

3. Chief of Party campus consultation and executive visits

- 7 @ \$2,600 travel + \$500 per diem

4. Professional Travel

- 20 @ \$800 travel + \$600 per diem

Item	Y E A R										Total
	1		2		3		4		5		
	AIR	PD	AIR	PD	AIR	PD	AIR	PD	AIR	PD	
1(a)	4,650	-	5,580	-	7,440	-	9,300	-	9,300	-	36,270
1(b)	-	-	2,790	-	3,720	-	3,720	-	2,790	-	13,020
1(c)	1,395	-	2,325	-	2,325	-	1,395	-	930	-	8,370
2	600	-	3,350	-	3,350	-	3,350	-	3,350	-	14,000
3	2,600	500	5,200	1,000	2,600	500	5,200	1,000	2,600	500	21,700
4	1,600	1,200	4,000	3,000	4,000	3,000	4,000	3,000	2,400	1,800	28,000
(Grant) Total	10,845	1,700	23,245	4,000	23,435	3,500	26,965	4,000	21,370	2,300	121,360

III. University of Kentucky Backstopping*per Year

Salaries	
Campus coordinator	\$ 36,000
Secretary	12,000
Bookkeeper	12,000
½ time assistant	6,000
Fringe Benefits	10,560
Travel	5,000
Per diem	3,400
Office supplies	15,000
Minor commodity purchase	5,000
	<hr/>
	\$ 104,960
(Grant) ¼ of above	26,240 - rounded \$ 26,300
(Loan) ¾ of above	78,720 - " \$ 78,800

*Assume ¼ of campus backstopping relates to technical services and is charged to Grant; ¾ relates to participant training and other Loan financed activities and is included in Loan financed participant activities Section I.

IV. Project OperationsA. Project Office - Salaries

(Loan)Project Director	@ \$ 4,000 per year
(Loan)Associate Director	@ \$ 4,000 " "
1-1st year; 2-2nd year; 3-3rd thereafter	
(Loan)Office Manager	@ \$ 2,800 " "
(Loan)Accountant	@ \$ 2,800 " "
(Loan)Bi-Lingual Secretary	@ \$ 1,000 " "
2-1st year; 3-thereafter	
(GOI) Drivers (4)	@ \$ 700 " "
(GOI) Janitor	@ \$ 300 " "
(½ GOI, ½ Loan) Office vehicle, supplies and operation	@ \$20,000 " "
(½ GOI, ½ Loan) Office equipment, \$5,000 1st year and \$7,500 thereafter	
(GOI) Housing utilities/maintenance for Director and Associate Director	\$12,300 " "
(GOI) Office 400 M ²	\$20,000 " "
(GOI) Travel and per diem, \$3,000 1st year; \$9,000 2nd year; \$12,000 year thereafter	

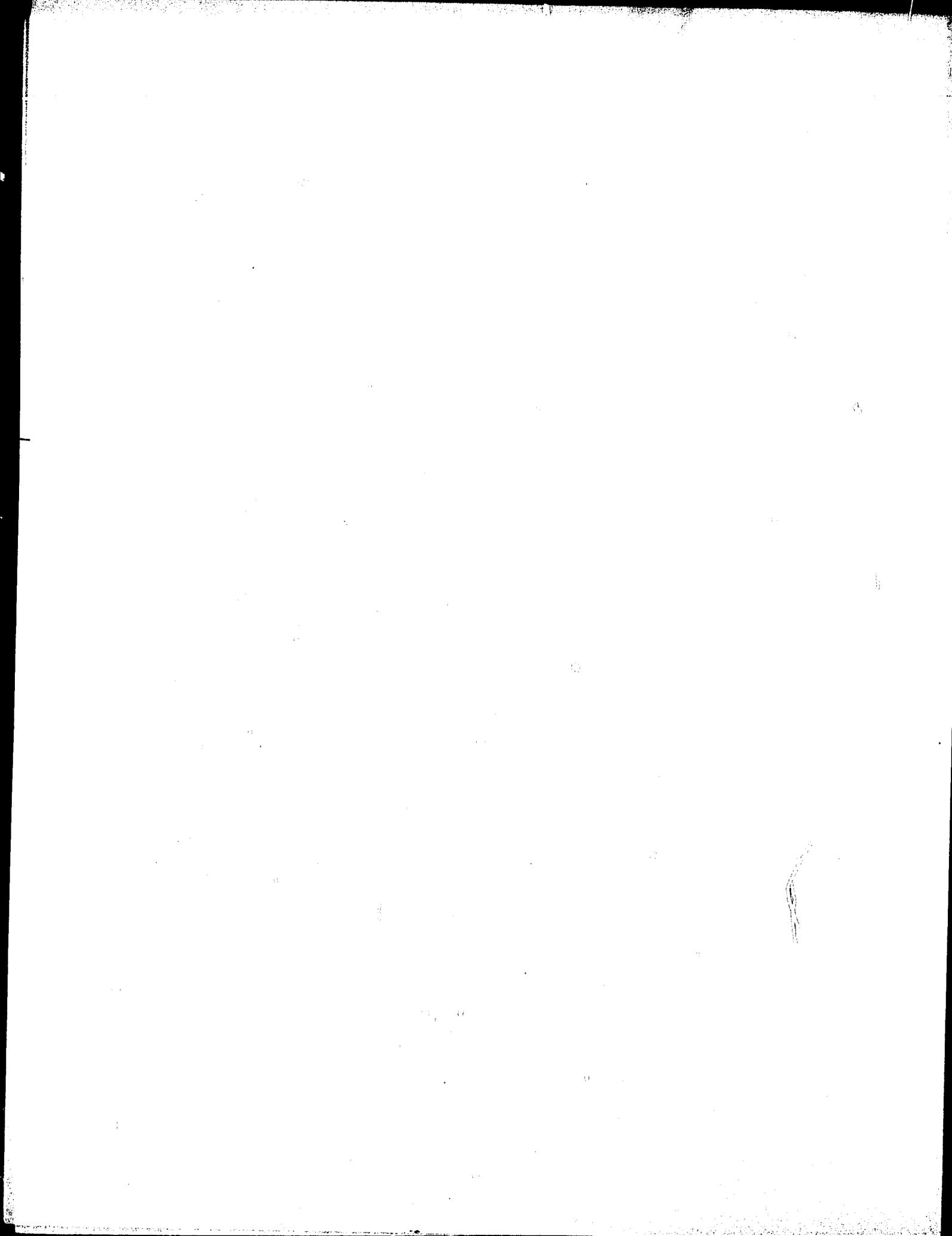
<u>Year</u>	<u>Total Cost</u>	<u>Loan Cost</u>	<u>GOI Cost</u>
1	132,500	52,500	80,000
2	128,000	42,000	86,000
3	161,000	50,000	111,000
4	175,000	55,000	120,000
5	188,000	58,000	130,000
	<u>784,500</u>	<u>257,500</u>	<u>527,000</u>

B. Universities Project Offices, each - Salaries

GOI Coordinator	@ \$ 2,000
GOI Bi-lingual Secretary	@ \$ 1,000
GOI Driver	@ \$ 700
(½ GOI plus ½ Loan) Office Equipment	\$5,000 1st year, \$1,000 thereafter
GOI vehicles 1-1st year	\$12,000
(GOI and Loan) Supplies and operating expenses	\$3,000 1st year, \$10,000 thereafter
GOI Travel and per diem,	\$3,000 1st year; \$4,600 there after
Loan Travel and per diem,	\$1,000 1st and 2nd year; \$2,000 thereafter

10 INSTITUTIONS

<u>Year</u>	<u>Total Cost</u>	<u>Loan</u>	<u>GOI</u>
1	280,000	50,000	230,000
2	220,000	70,000	150,000
3	245,000	85,000	160,000
4	270,000	90,000	180,000
5	285,000	95,000	190,000
	<u>1,300,000</u>	<u>390,000</u>	<u>910,000</u>



E. Intensive English (10 week course), per Student

(Loan)	Tuition	\$ 50
(Loan)	Books/Materials/Misc.	60
(GOI)	Living Allowance	440
(GOI)	Transportation	100
	Total	<u>\$ 650</u>

<u>Year</u>	<u>Number of Student</u>	<u>Total Cost</u>	<u>Loan Cost</u>	<u>GOI Cost</u>
1	100	\$ 65,000	\$ 11,000	\$ 54,000
2	75	48,750	8,250	40,500
3	50	32,500	5,500	27,000
4	25	16,250	2,750	13,500
5	-	-	-	-
Total	<u>250</u>	<u>\$ 162,500</u>	<u>\$ 27,500</u>	<u>\$ 135,000</u>

F. Special Assignment Teachers (one month)

"Flying Professors" to teach specific regular courses to substitute regular teacher chosen for participant training.

(Loan)	Stipend	\$ 500
(Loan)	Living Allowance	175
(Loan)	Air Fare	250
	Total	<u>\$ 925</u>

<u>Year</u>	<u>Number</u>	<u>Cost</u>
1	20	\$ 18,500
2	30	27,750
3	20	18,500
4	10	9,250
5	-	-
Total	<u>80</u>	<u>\$ 74,000</u>

G. Other In-Country Travel ($\frac{1}{2}$ Loan, $\frac{1}{2}$ GOI)
(average trip 6 days at \$250 airfare plus \$240 per diem)

Contract team members and project directors @ 15 trips each per year. Campus project coordinators @ 3 trips/year.

Short consultants months @ 1 trip per man/month. (per diem calculated in TA costs.) Associate contract professionals @ 5 trips per year. Contract volunteers at 2 trips per year.

	T R I P S				
	Year 1	Year 2	Year 3	Year 4	Year 5
Professional (US)	35	45	60	75	75
Directors	30	45	60	60	60
Campus Coordinators	27	27	27	27	27
Short Term (US)	8	12	22	22	22
Associate Professional	-	15	20	20	15
Volunteers (US)	<u>2</u>	<u>6</u>	<u>6</u>	<u>2</u>	<u>-</u>
Total Trips (airfares)	102	150	195	206	199
Total Trips (per Diem)	94	138	173	184	177

Y F A R	A I R F A R E			P E R D I E M		
	Total	Loan	GOI	Total	Loan	GOI
1	25,500	12,750	12,750	22,560	11,280	11,280
2	37,500	18,750	18,750	33,120	16,560	16,560
3	48,750	24,375	24,375	41,520	20,760	20,760
4	51,500	25,750	25,750	44,160	22,080	22,080
5	49,750	24,875	24,875	42,480	21,240	21,240
Sub Total	<u>213,000</u>	<u>106,500</u>	<u>106,500</u>	<u>183,840</u>	<u>91,920</u>	<u>91,920</u>

Loan	\$ 198,420
GOI	198,420
<u>Total</u>	<u>\$ 396,840</u>

H. Production of Educational Materials

	Y E A R				
	1	2	3	4	5
(Loan) Preparation	\$2,000	\$ 5,000	\$ 7,000	\$10,000	\$10,000
(GOI) Duplication/Distribution	<u>2,000</u>	<u>5,000</u>	<u>10,000</u>	<u>20,000</u>	<u>20,000</u>
Total	\$4,000	\$10,000	\$17,000	\$30,000	\$30,000
Preparation	\$34,000				
Duplication/Distribution	<u>57,000</u>				
Total	\$91,000				

V. Commodities

	<u>Total</u>	<u>Loan*</u>	<u>GOI</u>
Library books	\$ 270,000	\$240,000	\$ 30,000
Lab. Equipment & Supply	360,000	100,000	260,000
Audio visual	105,000	55,000	50,000
Farm equipment	190,000	90,000	100,000
**Vehicles (12)	151,000	-	151,000
Reproduction Equipment	180,000	90,000	90,000
Miscellaneous	59,000	40,000	19,000
	<u>\$1,315,000</u>	<u>\$615,000</u>	<u>\$700,000</u>

<u>Year</u>	<u>Loan</u>	<u>GOI</u>
1	\$ 85,000	\$ 200,000
2	120,000	250,000
3	215,000	150,000
4	150,000	50,000
5	45,000	50,000
Total	<u>\$ 615,000</u>	<u>\$ 700,000</u>

*Includes overhead charge for purchase and transportation.

**Includes A/C and 10% for spareparts.

CU 7 model	Rp.6,800,000
Spareparts	680,000
A/C	350,000
Total	<u>Rp.7,830,000 or \$12,528</u>

COST DETAIL - BY YEAR

C	1st Year				2nd Year				3rd Year				4th Year				5th Year				
	GOI	Total	Grant	Loan	GOI	Total	Grant	Loan	GOI	Total	Grant	Loan	GOI	Total	Grant	Loan	GOI	Total	Grant	Loan	GOI
4	7,078,409	949,000	-	636,000	313,300	7,064,100	-	1,804,800	481,300	7,064,100	-	1,804,800	481,300	7,104,000	-	1,528,600	518,400	1,234,000	-	669,000	384,400
	351,000	256,250	211,250	-	45,999	307,500	253,700	-	54,000	410,000	338,000	-	72,000	512,500	422,500	-	90,000	512,500	422,500	-	90,000
	84,099	-	-	-	97,000	69,000	-	-	18,000	116,000	92,000	-	24,000	116,000	92,000	-	24,000	87,000	69,000	-	50,000
	168,000	57,900	39,900	-	18,000	96,500	66,500	-	30,000	96,500	66,500	-	30,000	57,900	39,900	-	18,000	38,400	26,000	-	15,000
10	-	57,200	45,200	12,000	-	107,250	84,750	22,500	-	107,250	84,750	22,500	-	107,250	84,750	22,500	-	57,200	45,200	12,000	-
	-	10,445	10,845	-	-	23,745	23,245	-	-	23,435	23,435	-	-	26,968	26,968	-	-	21,370	21,370	-	-
	-	1,790	1,790	-	-	4,000	4,000	-	-	3,500	3,500	-	-	4,000	4,000	-	-	2,300	2,300	-	-
20	(545,000)	(383,895)	(308,898)	(12,000)	(63,000)	(525,495)	(500,998)	(22,500)	(102,000)	(756,483)	(608,185)	(22,500)	(128,000)	(424,611)	(470,115)	(72,500)	(132,000)	(718,970)	(586,978)	(13,000)	(128,000)
34	109,553	-	-	-	-	51,291	41,082	1,543	8,364	179,184	103,831	3,341	21,511	219,943	178,738	6,001	35,207	284,446	217,528	4,447	46,471
	-	55,401	55,401	-	-	97,574	97,574	-	-	128,163	128,163	-	-	152,793	152,792	-	-	144,810	144,810	-	-
34	652,553	439,494	344,494	12,000	63,000	774,340	639,661	24,345	110,364	1,014,031	840,179	26,341	147,511	1,197,350	1,001,642	28,501	167,207	1,130,228	909,308	16,467	164,471
	-	26,265	26,265	-	-	26,265	26,265	-	-	26,265	26,265	-	-	26,265	26,265	-	-	26,265	26,265	-	-
	-	-	-	-	-	2,154	2,154	-	-	4,484	4,484	-	-	7,008	7,008	-	-	9,734	9,734	-	-
	-	6,564	6,564	-	-	7,105	7,105	-	-	7,667	7,667	-	-	18,318	18,318	-	-	9,000	9,000	-	-
	-	32,831	32,831	-	-	35,524	35,524	-	-	38,436	38,436	-	-	41,588	41,588	-	-	44,999	44,999	-	-

C	1st Year				2nd Year				3rd Year				4th Year				5th Year				
	GOI	Total	Grant	Loan	GOI	Total	Grant	Loan	GOI	Total	Grant	Loan	GOI	Total	Grant	Loan	GOI	Total	Grant	Loan	GOI
	527,000	132,500	-	52,500	60,000	128,000	-	42,000	86,000	161,000	-	50,000	111,000	175,000	-	53,000	170,000	188,000	-	58,000	130,000
	910,000	280,000	-	50,000	230,000	230,000	-	70,000	150,000	245,000	-	85,000	160,000	270,000	-	90,000	180,000	245,000	-	97,000	190,000
	218,800	44,850	-	18,000	29,850	89,700	-	30,600	59,700	74,750	-	25,000	49,750	74,750	-	25,000	49,750	44,850	-	15,000	29,850
	648,000	49,500	-	9,000	40,500	165,000	-	30,000	135,000	165,000	-	30,000	135,000	204,250	-	37,500	164,750	204,250	-	37,500	164,750
	135,000	65,000	-	11,000	54,000	48,750	-	8,250	40,500	32,500	-	5,500	27,000	18,250	-	2,750	13,500	-	-	-	-
	-	18,500	-	18,500	-	27,750	-	27,750	-	18,500	-	18,500	-	9,250	-	9,250	-	-	-	-	-
	198,420	49,500	-	24,030	24,030	70,820	-	35,310	35,310	90,270	-	45,135	45,135	95,640	-	47,830	47,830	92,230	-	46,115	46,115
	57,000	4,000	-	2,000	2,000	10,000	-	5,000	5,000	17,000	-	7,000	10,000	30,000	-	10,000	20,000	30,000	-	10,000	20,000
	(2,694,410)	(642,410)	-	(182,050)	(460,380)	(754,820)	-	(248,310)	(511,510)	(804,020)	-	(266,135)	(537,845)	(877,160)	-	(277,330)	(599,830)	(846,330)	-	(261,615)	(584,715)
	510,435	-	-	-	-	62,306	-	20,361	41,944	137,264	-	45,434	91,830	233,959	-	73,976	154,444	315,645	-	96,953	214,692
	3,204,675	642,410	-	182,050	660,380	812,125	-	268,671	553,454	941,286	-	311,571	629,715	1,111,119	-	351,300	759,819	1,159,975	-	358,568	801,407
	700,090	168,300	-	68,000	200,000	344,000	-	96,000	250,000	322,000	-	172,000	150,000	170,090	-	120,000	50,300	46,000	-	36,800	50,000
	77,973	-	-	-	-	28,577	-	7,872	20,500	54,972	-	29,368	25,607	48,343	-	32,007	13,336	31,871	-	13,341	18,330
	-	17,900	-	17,900	-	25,968	-	25,968	-	50,341	-	50,341	-	38,002	-	38,002	-	12,335	-	12,335	-
	777,973	285,000	-	85,000	200,000	400,340	-	129,840	270,500	427,313	-	251,706	175,607	253,343	-	190,009	65,336	130,204	-	61,676	68,338

(25: GOI-113,674)

PROJECTED COST SUMMARY - BY YEAR
(US\$ '000)

	Total Project				1st Year				2nd Year				3rd Year				4th Year				5th Year			
	Total	Grant	Loan	GOI	Total	Grant	Loan	GOI	Total	Grant	Loan	GOI	Total	Grant	Loan	GOI	Total	Grant	Loan	GOI	Total	Grant	Loan	GOI
I. Participant Training	2,459	-	6,381	2,078	949	-	636	313	2,086	-	1,605	481	2,086	-	1,605	481	2,204	-	1,586	518	1,234	-	950	284
II. Technical Assistance	4,555	3,795	198	652	440	365*	12	63	774	640	24	110	1,014	840	26	146	1,197	1,002	28	167	1,130	949	16	165
III. Campus Backstopping (TA)	193	193	-	-	33	33	-	-	76	36	-	-	38	38	-	-	41	41*	-	-	45	45	-	-
IV. Project Operations	4,075	-	1,473	3,202	642	-	182	460	822	-	269	553	941	-	312	629	1,111	-	351	780	1,159	-	358	800
V. Commodities	1,496	-	718	778	285	-	85	200	400	-	130	270	428	-	252	176*	253	-	190	63	130	-	62	68
3.3% Total Contingency	621	12	320	290	111	2	85	24	232	4	97	131	162	4	84	74	94	2	45	47	23	-	9	14
T O T A L	20,000	4,000	9,000	7,000	2,460	400	1,000	1,060	4,350	680	2,125	1,545	4,669	86	2,279	1,508	4,800	1,045	2,200	1,255	3,721	994	1,396	1,331

Contribution Percentages
(US\$ '000)

	Program	AID	GOI	Total
Grant	4,652	86	14	100
Loan	15,348	59	41	100
Total	20,000*	65	35	100

**A BRIEF HISTORY AND DESCRIPTION
OF INDONESIAN HIGHER EDUCATION**

From the beginning of Indonesia's recorded history until the Dutch came at the start of the 17th century, the archipelago was governed by a large number of feudal rajahs and sultans. Often they were at war with each other, like the warlords and barons of China, India, and Europe in corresponding centuries. At times great rajahs or sultans succeeded in building empires whose rises and declines might be likened to those of the Holy Roman Empire.

Before the Dutch, the educational system was mainly conducted by religious leaders. The only education available to the Indonesians was instruction by Buddhist, Hindu, and Islamic religious leaders or by Christian missionaries. At first its content was largely confined to the Hindu and Buddhist classics; later it focused almost exclusively on Islamic scriptures. The implicit intent of this educational system was to induce piety and submissiveness among the masses, and to cultivate spiritual and political wisdom among the aristocratic few.

The Dutch gained control over the archipelago in 1597 and ruled this colonial empire, known as the Netherlands East Indies, for nearly 350 years. They were to gain great riches from natural resources: spices, rice, sugar, tea, coffee, copra, tin, rubber and petroleum. The Dutch did not by any means destroy the old aristocracy or its religiously-oriented methods of education.

Higher education in Indonesia was begun during the latter part of the Dutch colonial period, with the opening of the College of Engineering in Bandung, West Java, in 1920. Shortly thereafter, a college of medicine and a college of law were established in Jakarta. The three schools were subsequently incorporated and formed the key colleges of the University of Indonesia during the 1940's through the early 50's. In 1950 there were fewer than 1000 people of a population of 70,000,000 who had completed university education.

The Dutch hegemony was terminated in 1942 by invading Japanese troops who subsequently held the islands until the close of World War II. At the end of the war, 1945, the Indonesians declared their independence.

Until the early 1950's, only two universities existed in Indonesia. Besides the University of Indonesia, with main administration located in Jakarta, the University of Gadjah Mada was founded in Yogyakarta, Central Java, in the early days of the nation's struggle for independence.

Today, 484 post secondary academies, higher learning institutes, and universities are functioning in Indonesia, 102 of which are public institutions. However, only 40 of the latter (27 universities and 13 institutes) are operated directly by the Department of Education and Culture. These have a

total enrollment of around 200,000 students. Each institution is administered by a Rector. The Director-General for Higher Education of the Department of Education and Culture is the chief administrator of higher education affairs. The Directorate General is assisted by 11 Consortia, based on academic disciplines, and a staff of experts and ad hoc committees dealing with budget allocation, staffing, facilities and curriculum.

During a period of 25 years, roughly from 1950 to 1975, the higher education system could be characterized as experiencing random growth, at least in the implementation of policies. During that period, relatively few specific policies were adopted regarding patterns, operational concept, and organizational structure of tertiary education. This, along with other factors, resulted in low production efficiency in terms of number of graduates, scientific findings, and public services per unit of input. The system primarily evolved along the Dutch pattern, wherein students were provided little guidance in pursuing their academic activities.

American influence on the higher education system began to have an impact in the middle of the 1950's, through substantial inputs of equipment, technical assistance, and scholarships granted to young Indonesian scholars for non-degree and degree training in various disciplines in the U.S. Upon their return, these people constituted teaching cadres at their respective universities both in Java and in many of the newly established universities in the outer islands. Many of them were given administrative duties in addition to their teaching assignments.

The milestone of the beginning of the second period was marked by the Decree No. 0140/U/1975 of the Minister of Education and Culture, dated 12 July 1975. This decree established concepts which Indonesian higher education should follow in preserving and strengthening its basic structure.

The Development of higher education is geared to, the fulfillment of its three missions: teaching, research and public service. Higher education is charged with: 1) developing experts required for staffing the technostructure network of the society; 2) producing scientific findings; and 3) promoting the use of expertise and scientific findings in national development.

Based on the urgency of manpower requirements and the existing capability of the programs, areas of specialization are assigned priority in the following order: 1) teaching, 2) technology, 3) basic sciences, 4) management, 5) agriculture, 6) health, 7) social sciences and 8) humanities. Every state and private higher education institute has been requested to develop a program consistent with these priorities.

In the third 5-year plan (PELITA VII: 1979-1980 - 1983/1984), emphasis is assigned to the improvement of higher education. This is to be accomplished through greater educational efficiency particularly in strengthening undergraduate and building programs,^{1/} and through structural improvement.^{2/} Under PELITA III, 800 MS and 550 PhD are to be trained.^{3/} Emphasis is also placed on improving teaching/learning methods, faculty members' capability to conduct research, and on upgrading educational facilities including libraries, laboratories and other supporting facilities.

SOCIAL SOUNDNESS ANALYSIS

1. Socio-Cultural Environment

This project will benefit the large numbers of people in Western Indonesia who are engaged directly or indirectly in Agriculture. Specifically it will improve the teaching, research and public service programs of ten universities in the agriculture, rural development and basic science fields enabling them to produce more and better rural leaders. It is entirely consistent with current government social/educational goals. It is designed to strengthen and implement many of the higher education policies in the Western region and responds to requests for assistance made to the USAID by the Directorate General of Higher Education (DGHE).

Universities are expected to have a very close relationship with local governments, provincial planning offices and other development agencies to produce progress in their provinces. It is assumed in Indonesia that the development of the province is closely correlated with, if not dependent upon, the level of development of the university, particularly in relation to programs focused on rural development, and agrosiences. There are twenty-seven universities and thirteen institutes in the public domain. Ten of these universities and two teacher training institutes from the Association of Western Universities (BKS-Barat). The Rectors of these institutions, together with DGHE representatives form the Project Policy Steering Committee. Twenty-seven per cent (12,549) of the BKS-B institutions' total 1980 student population of 45,740 were enrolled in project-related faculties. Thirty-two per cent of the 3573 staff members were assigned to project-related fields. Thus within the public higher education system, this project will impact directly on twenty-five per cent of the institutions and on 32 per cent of the faculty and 25 per cent of the student body of these institutions who focus on careers in the agricultural sciences and rural development fields.

2. Socio-Cultural Factors Which May Affect the Project |

(a) * Diversity of Individual University Expectations. Because of the assigned role of the university in provincial development, each province feels an urgent need to have a public university. Traditionally and culturally the provinces are so unique and disparate that it is difficult for a university to respond to more than the development needs of its own province. Strong cultural ties have made it necessary for the universities to recruit the bulk of their staffs from among their own graduates as the academic staff have not only to understand the culture in which they are working, but must also be accepted by the local people in order to affect change. This in-breeding where weak institutions must rely heavily on their own products, however, narrows the depth and scope of intrinsic experiences and resources they may call upon for improvement of professional skills and services.

indicate they could easily place several times the number of agricultural graduates that are being produced now. The Konsortium for Agricultural Sciences (KIP) is the key coordinating organization for agriculture within the total university system. It provides technical services and support to its member faculties. The KIP also serves on the Policy Steering Committee of this project along with the Association of Western Universities (BKS-Barat). The Central Project Office will be directly linked to the universities through the Rectors' offices. A Project Field Office will be established which will be the Rector's arm for implementing campus activities. The university Senate will function as an informal link to the faculties which will have major implementing responsibilities for the project. University faculties not only train the wide variety of leaders necessary for regional, provincial and local development, they also actively promote direct student and faculty involvement through their community development programs (KKN) in which students must work for three months each year. Villagers thus have direct access to technological developments and future leaders become more sensitized to the conditions of rural life. This later is a critical factor as only about 40 per cent of Sumatran agricultural students come from farm backgrounds.

3. Beneficiaries

(a) Ultimate Beneficiaries

The rural population will benefit from improved research and public services programs, both those implemented directly by universities and those resulting from activities of better qualified university graduates who will form the backbone of program planning and implementation of rural development activities by other agencies. Local, provincial, and national institutions which must recruit skilled manpower to plan and implement their programs will benefit, and thus will benefit the entire population which utilizes these services. Private enterprises will benefit from access to a more highly skilled technical labor force and entrepreneurial capabilities, thus benefitting ultimately both the consumers of new products and the labor force which will find growing employment opportunities.

(b) Direct beneficiaries will be 1,012 university staff members as follows:

1) 198 who will study for 148 MS and 50 Ph.D. degrees in their areas of competence, 2) 54 who will serve on "Network" task forces, 3) 440 who will take refresher courses 4) 70 will participate in short non-academic study, and 5) 250 who will study Intensive English for three months. The social awareness of students and staff will be directly affected.

(c) Indirect beneficiaries will include 1) 645 additional university staff who will be recipients of technical assistance from U.S. and Indonesian advisors; 2) 6,000 farmers, 3) 60 professional community development and extension workers and 4) 12,550 university/IKIP project-related students.

4. Economic Level of Beneficiaries

As all professors are public servants they are paid on the regular civil service salary schedule plus a few automatic family and professional allowances. A full lecturer (grade 4 on a 6 grade scale) with five full years at his rank and grade may earn \$82.88 per month salary plus \$137.12 allowances or a total of \$220 (\$2,640/year). Additional benefits for a few at this level may raise their take home "cash" and "kind" receipts to as high as \$516.90 per month (\$6,202/year). A recent World Bank study on Agricultural Manpower in Indonesia finds that although hard data on remuneration in the private sector for comparable levels of study and experience is difficult to obtain it appears that the private sector remuneration is 30-50 per cent higher than that of the university professor with all his automatic and supplemental allowances.

The indirect, but perhaps most important, ultimate beneficiary - the rural dweller - however, comprises 80 per cent of Sumatra's rural population. It was estimated by the World Bank in 1976 that 86 per cent of these people were living below the poverty threshold of \$190 per capita and that 13 per cent were classified as destitute. According to a GOI study, in the period 1973-75, Sumatra had 21 per cent of Indonesia's rural subdistricts (kecamatan) but had, as a share of the total in each category for Indonesia:

- 19.0 per cent of the very poor
- 15.3 per cent of the poor
- 27.0 per cent of the near poor
- 30.9 per cent of the not poor

Kalimantan had 9.8 per cent of Indonesia's rural subdistricts (kecamatan) but had, as a share of the total in each category for Indonesia:

- 4.0 per cent of the very poor
- 6.8 per cent of the poor
- 12.6 per cent of the near poor
- 17.1 per cent of the not poor

In terms of employment, income generation, consumption, and other generally accepted measures of economic activity, the agricultural sector occupies, a position of major importance in Sumatra. Although there are areas in Sumatra such as Aceh and Palembang where the GOI is experimenting with sophisticated mechanization in clearing swampland and planting high yield varieties of rice, general agriculture production continues to follow largely traditional practices and productivity is low. Both directly and indirectly this project will contribute to improve incomes and levels of living throughout the Western Region.

5. Benefits

A listing of project outputs (described more fully elsewhere) illustrates benefits to be derived by universities and communities served by them:

- 1) better trained professional staff;
- 2) strengthened curriculum and teaching methods;
- 3) upgraded laboratories, libraries, textbooks and printing facilities;

- 4) increased university public service programs; 5) increased research publications; 6) strengthened Association of Western Universities; and
- 7) improved university administration and organization.

6. Spread Effect

By contributing to the intellectual and economic growth of a region, universities contribute in subtle ways by helping to create a climate conducive to retaining many of the brighter and more able young people who might otherwise migrate to Java for their education and subsequently remain to enter an already crowded labor market there.

Through this project the universities are to conduct, and help other agencies to generate, research which will provide improved technologies for the small farmer. Research workers, agricultural and rural teachers and extension workers will be trained so that the experimental facilities, schools and extension divisions are more effectively staffed and utilized. Leadership training will focus on the plight of the poor so that progress achieved may result in greater equity.

Project organization and activities developed largely by agricultural, rural development and educational faculties will serve as models that the Association (BKS-B) may use to assist other faculties to improve their community out-reach programs and concerns for the economic and social well-being of rural people. In the same manner specific products of research, curriculum development and public service may be utilized by other public and private universities.

7. Follow-on

This project is the third in a series of similar AID projects designed to improve the teaching, research and public service of universities in a particular geographic area: Agriculture Education for Development (Project (497-0260) was the pilot project which focused on universities in Central and Western Java and greatly strengthened the Agricultural Knosortium (KIP); Eastern Islands Agriculture Education (Project #497-0293) deals with six universities and two IKIPs on the Islands of Kalimantan, Sulawesi, Maluku and Irian Jaya through the Association of Eastern Island Universities (BKS-Timur); eight universities and two IKIPs in Sumatra and West Kalimantan are serviced by this current project through the BKS-Barat. The Department of Education and the Indonesian Planning Board (BAPPENAS) have already expressed their approval of results obtained by the on-going projects and are expected to request AID assistance in formulating and implementing a similar multi-phase program for the NUSA TENGGARA (South Eastern) universities and some universities in Bali and Java. If this request should lead to a project, AID would be the only donor agency to work directly with all public university faculties concerned with agricultural sciences and rural development.

8. Women in Development

An understanding of the role women play in the different cultures of Indonesia is crucial to the success of Indonesian development planning since

Indonesian development depends heavily on programs in family planning, literacy, and nutrition. Without the full involvement and support of rural women - who as wives and mothers have major control over the family group and the way it eats, works, and thinks - these programs will have limited effect. Development planning, however, especially at the higher levels of government, is a male business.

Universities, since they are intimately involved in the research and planning processes for development projects in their provinces, must accept responsibility for designing and implementing projects that fully recognize and seek to understand the role of women. Since universities reflect the usual sex balance of government departments, this is a difficult challenge for them to undertake.

According to data collected by the University of Kentucky project preparation team, women make up from 8 to 43 per cent of total student enrollment. The data do not show sex balance for the academic staff, but women are generally at the lower ranks. In the region there are few female deans of faculties and only one female vice-rector. The percentage of women at the teacher-training colleges is significantly higher than at the universities because teaching is regarded as a female field; however, educational administration at all levels is predominantly a male profession.

Men and women university faculty in many ways have equal opportunities in terms of salary and rank. Opportunities for advanced study by women either within Indonesia or abroad are hampered by family responsibilities. The extended family does help somewhat in meeting child care and home responsibilities while the mother is away.

Women faculty members have expressed grave concerns about pressures inflicted by the multiple roles they must play - professional, family, organizational.

In accordance with the impressive societal role of women in the Western Region, the joint GOI, AID, University of Kentucky design team recommends that the BKS-Barat consider the following as an integral part of this project:

1. Special emphasis be placed on extending graduate education opportunities for women faculty in agriculture, nutrition, food processing, home economics.
2. Women also be encouraged to study in the fields of political sciences, economics, marketing and administration to be better prepared for community, regional and national leadership roles.
3. A greater than proportionate number of women, i.e. 25-33 per cent be granted advanced study opportunities within country and abroad.
4. Universities expand their cooperative activities with BAPPEDA, Agricultural Extension and the Department of Education in an effort to more fully involve women in non-formal and informal educational activities.

5. Professional women be encouraged to join professional organizations and participate actively in regional and international professional meetings.

6. Research be initiated to understand more clearly the role of women in development within the Western Region. Findings from such topics as the following would provide valuable information to planners:

- a. Cultural resources to which women have access that give them influence.
- b. "Felt needs" of rural women - do they want improvement in cottage industries, in trade, in factory work, in agricultural methods?
- c. Evaluation of the Indonesian family planning program with respect to cultural practices and economic well-being.
- d. Socio-economic status of women in Sumatra and West Kalimantan.
- e. Data, by sex, on land ownership for different kinds of land.
- f. Specialized rural activities of women in the Western Region.
- g. Number and kind of women - specific, credit institutions and the actual availability of credit to women.
- h. Number of women - specific cooperatives and women's leadership role in cooperatives.
- i. Effects on village women of men's rural-urban migration.
- j. Evaluation of networks of communication among women.
- k. Evaluation of current nutrition education programs including costs, effectiveness, and coverage as a basis for continually refining and upgrading the programs.
- l. Extent to which conditions under which women live and work have a bearing on the availability of food and nutritional levels of their families and communities.

In the development and execution of the above lines of research, women must be involved as visiting consultants and in-country, appropriately trained, counterparts. Men can work effectively as part of the team, but if only men define the problems, design the research, select the methodology and conduct the evaluation, the women's viewpoint could be lost. Evidence that this could happen exists in the fact that most agricultural planning has been done by males, and women's potential for local food production (and hence in improving nutritional status) has not been fully recognized.

Selected Data on 9 Universities

SELECTED DATA FOR SRIWIJAYA UNIVERSITY, 1980

Table IV.1 Education, Field of Study, and Rank of University and Agricultural Administrators

Administrator	Highest Degree	Degree Granting Institution	Field of Study
Rector	Drs	Gajah Mada	Social Politics
Dep. Rector I ¹⁾	Ir	Gajah Mada	Agriculture
Dep. Rector II ¹⁾	Drs	UNSRI	Economics
Dep. Rector III ¹⁾	Dr	UNSRI	Medecine
Dean, Agriculture	Ir	I P B	Agronomy

1) I = Academic Affairs II = Finance and Management III = Student Affairs

Table IV.2 Faculties, Academic Staff, and Students, 1979/80

Faculty	Academic Staff	Students
Agriculture	48	400
Economics	54	1372
Education	39	612
Engineering	42	1551
Law	37	1238
Medical	156	474
Teaching	<u>72</u>	<u>1280</u>
Total	448	6927
Special Programs:		
Academy of Business Adm.	N.R.	204
Technical Education	N.R.	327
Diploma Program I	<u>N.R.</u>	<u>225</u>
Total	N.R.	756

Table IV.3 Education of Professional Staff, Agriculture Faculty, 1980

Faculty	Ph.D.	Masters ^{1/}	Sarjana ^{2/}	Sarjana Muda
Agriculture	1	2	54	5

Note: of the 59 professional staff with Sarjana or Sarjana Muda degrees, 45 completed all of their academic training at Sriwijaya University.

^{1/} includes: M.S., M.Sc., M.A.B.

^{2/} includes: Ir., Doctorandus.

Table IV.4 Professional Staff Currently Undertaking Advanced Studies In Agriculture and Rural Development

Field	Program	University	Sponsor
Social & Economic Dept	2 M.S.	I.P.B.	
	1 Ph.D	Gajah Mada	
	1 Ph.D	Oxford	
Agronomy Dept.	1 Ph.D	Bandung	
	1 Ph.D	Gajah Mada	
Plant Protection	1 M.S.	I.P.B.	

Note: This list may be incomplete. One of those studying for an agricultural economics. M.S. at IPB is currently in the agricultural technology department.

Table IV.5 Ranks of Professional Staff

Rank	Agriculture Faculty
Guru Besar (IVd - IVe)	0
Lektor Kepala (IVb - IVc)	2
Lektor (IVa)	5
Lektor Muda (IIIId)	5
Lektor Madya (IIIc)	16
Ass't Akhli (IIIb)	5
Ass't Akhli Muda (IIIa)	24
Other (IIa - IIId)	4 (IIC) 1 (IIB)

Table IV.6 Training Requested Under This Project

Field of Study	Year	Non-Degree	Masters		Ph.D. or Equivalent	
			In-Country	Foreign	In-Country	Foreign
Agriculture	81	10	5	3	1	1
	82	10	5	3	1	1
	83	10	5	3	1	1

Table IV.7 Student Entries and Completions, Faculty of Agriculture, 1970-80

Year	Entrants	Completions	Year	Entrants	Completions
1970	116		1970	13	
1971	79		1971	18	
1972	91		1972	8	4
1973	86		1973	33	6
1974	79	38	1974	34	9
1975	70	30	1975	38	5
1976	53	31	1976	30	6
1977	60	31	1977	31	18
1978	128	31	1978	31	24
1979	75	29	1979	31	18
			1980	29	18
Average completion rate: 41%			Average completion rate: 44%		

Table IV.8 Graduate Efficiency Ratio, 1979

Faculty	Students	Sarjana	Ratio
Agriculture	400	18	4.5%

Table IV.9 University Budget, 1979/80, by Source

Source	Amount	Percent
Central Government	1,192,057,000	69%
Routine*	(781,106,000)	(45%)
Development**	(410,951,000)	(24%)
Provincial Government	250,000,000	15%
Tuition and Fees	280,600,000	16%
Total	1,722,657,000	100%

*Salaries, maintenance, and operations

**Capital Investment.

Table IV.10 Selected Student Characteristics, 1979/80

Characteristics	Faculty of Agriculture
Number of Students	400
Local Province	85%
Other Province	15%
Farm/Rural Background	17%
Urban Background	83%
Employment of Graduates	
Government	72%
Other	28%

Table IV.11 Selected Data on University Farm, 1980

		Faculty of Agriculture
Farm at University Site:		
Size (ha)		2 hectares
Tillable (ha)		0
Pasture/Forage		0
Irrigated Area		0
Irrigatable Area		0
Equipment:		4 7.5 HP hand tractors
		1 75 HP tractor
		1 25 HP tractor
		3 Lawn movers
Structures:	drying floor, 1200 M2	
	1 storage bldg	
	1 workshop and 1 house	
Other Farms:		
Distance from campus	55 Kms. Scu of Palembang	
Area	550 hectares	
Use	Just being developed.	

Table IV.12 Reported Research Activities

		Faculty of Agriculture
Publications, 1975 - 1978		38 publications
Staff conducting research		30
Students conducting research		20
Research budget (government)		Rps. 900,000 in 1979
Research support (extramural)		Rps. 25 million for 1979/80

Table IV.13 Reported Extension Activities, 1979/80

Faculty of Agriculture:

1. Improvement of farming systems.
2. Improvement of rural incomes and welfare.

Budget:

Approximately Rps.300,000 1979/80

Table IV.14 Audio-Visual and Reproduction Equipment

Equipment	Faculty of Agriculture
Audio-visual:	
Slide projectors	1
Overhead projector	1
Sound system	1
Reproduction equipment	
Mimeograph	1
Paper binder	1
Photocopy	1
Paper cutting machine	1

Table IV.15 Priority Constraints and Needs

Physical Plant:

1. Laboratory equipment
2. Library
3. Laboratory
4. Auditorium

University Farm:

1. Irrigation system
2. Agroclimatic station
3. Electricity generator

Research:

1. Laboratory equipment
2. Journals
3. Funds

Public Service:

1. Research
 2. Trained manpower
 3. Communication Facilities
 4. Agricultural inputs
-

Table IV.16 Availability and Need for Native Speakers of English

Number Present 1979-80	Source	Annual Need	Available Perquisitors
0	-	2	Housing Transportation

PROJECT DESIGN TEAM

The project design team for this project included the following persons and institutional affiliations:

Dr. Yuhara Sukra -- Chairman of Doctoral Program,
Directorate General for Higher Education, Department of Education
and Culture.

Dr. Abdullah Ali -- Deputy Rector for Academic Affairs,
Syiah Kuala University.

Dr. Moses Tulihere -- Professor of Animal Science, IPB/Bogor
and KIP staff member.

Dr. Clayton Seeley -- USAID/Jakarta Office of Education and
Human Resources

Dr. Robert Schmeding -- USAID/Jakarta Office of Education and
Human Resources.

Mr. Arthur Thivierge -- USAID/Jakarta Program Office,

Dr. Kurt R. Anshel -- University of Kentucky Professor of
Agricultural Economics, and Departmental Graduate Studies Director.

Dr. Russell H. Brannon -- University of Kentucky Professor of
Agricultural Economics.

Dr. Herbert F. Massey -- University of Kentucky Professor of Agronomy
and Director of the Office of International Programs in Agriculture.

Professor Soekisno Hadikoemoro represented the Director General of Higher Education in the organization and conduct of the project paper preparation. In this capacity, he participated in a number of formal and informal meetings and discussions of the project design team.

Dr. Kusmat Tanudimadja, Executive Secretary of KIP (Konsortium Ilmu-Ilmu Pertanian) also provided counsel to the team throughout its assignment.

Last, and most importantly, the Rectors, Deans, and faculty members of the nine Sumatran institutions of higher education all gave freely of their time, and contributed significantly through supplying statistical data, a needs and capability assessment, and many ideas for effective project organization and implementation. Similarly, the Governors of several of the provinces met with the design team, strongly supported the need for the project, and in some cases pledged additional provincial funds and facilities in support of the project.

C. Training Courses
per course (1 month) - 20 participants

(Loan) Materials and Expenses	\$ 4,000
(Loan) Indonesian Teacher and Local Assistants	1,000
(GOI) Per Diem Teacher	1,200
(GOI) Participant living costs (\$175)	3,500
(GOI) Participant travel (\$250)	5,000
(GOI) Teacher travel	250
	<hr/>
T o t a l	\$ 14,950

Scheduled

<u>Year</u>	<u>Number</u>	<u>Total Cost</u>	<u>Loan</u>	<u>GOI</u>
1	3	\$ 44,850	\$ 15,000	\$ 29,850
2	6	89,700	30,000	59,700
3	5	74,750	25,000	49,750
4	5	74,750	25,000	49,750
5	3	44,850	15,000	29,850
	<hr/>			
	22	\$ 328,900	\$ 110,000	\$ 218,900

D. Network Meetings

Average two-week Meeting, 8 participants, 1 leader

(Loan) Materials	\$ 1,000
(Loan) Leader stipend	500
(GOI) Travel \$250	2,250
(GOI) Per diem \$500	4,500
	<hr/>
	\$ 8,250

<u>Year</u>	<u>Number</u>	<u>Total Cost</u>	<u>Loan</u>	<u>GOI</u>
1	6	\$ 49,500	\$ 9,000	\$ 40,500
2	20	165,000	30,000	135,000
3	20	165,000	30,000	135,000
4	25	206,250	37,500	168,750
5	25	206,250	37,500	168,750
	<hr/>			
	96	\$ 792,000	\$ 144,000	\$ 648,000