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DEPARTMENT OF STATE  
AGENCY FOR INTERNATIONAL DEVELOPMENT  
Washington, D.C. 20523

144p

PROJECT PAPER

Proposal and Recommendations  
For the Review of the  
Development Loan Committee

INDONESIA - Agriculture Education for Development

AID-DLC/P-2146

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DEPARTMENT OF STATE  
AGENCY FOR INTERNATIONAL DEVELOPMENT  
WASHINGTON, D.C. 20523

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AID-DLC/P-2146  
February 5, 1976

MEMORANDUM FOR THE DEVELOPMENT LOAN COMMITTEE

SUBJECT: Indonesia - Agriculture Education for Development

Attached for your review are the recommendations for authorization of a loan in an amount not to exceed \$5,500,000 to the Government of Indonesia to establish a nuclear group of agricultural universities with the capacity to provide highly-qualified agricultural manpower, research, and public service activities appropriate to Indonesia's needs.

The loan proposal is scheduled for consideration by the Development Loan Staff Committee on Thursday, February 12, 1976, at 2:30 p.m. in Room 3885 NS. If you are a voting member a poll sheet has been enclosed for your response.

Development Loan Committee  
Office of Development Program Review

Attachments:  
Summary and Recommendations  
Project Analysis  
Annexes A-M

**AGRICULTURAL EDUCATION FOR DEVELOPMENT PROJECT - INDONESIA**

**Abbreviations/Acronyms Used:**

1. **GOI: Government of Indonesia**
2. **DOA: Department (Ministry) of Agriculture**
3. **DOE: Department (Ministry) of Education**
4. **Repelita I: The First Five-Year Plan, 1969 - 1974**
5. **Repelita II: The Second Five-Year Plan, 1974 - 1979**
6. **KIP: Consortium of Agricultural Sciences**
7. **IPB: Agricultural Institute Bogor**
8. **UGM: University of Gadjah Mada, Yogyakarta**
9. **MUCIA: Midwest Universities Consortium for International Activities**

## AGRICULTURAL EDUCATION FOR DEVELOPMENT PROJECT - INDONESIA

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AGRICULTURAL EDUCATION FOR DEVELOPMENT PROJECT

- Indonesia -

PART I. PROJECT SUMMARY AND RECOMMENDATIONS

A. Face Sheet

B. Recommendations

It is recommended that a loan be authorized for \$5,500,000 with the following proposed terms:

1. Maturity: Forty years including a ten-year grace period.
2. Interest: Two percent per annum during the grace period and three percent per annum thereafter.
3. Currency: Interest and principal repayable in U.S. dollars.

Along with this authorization a waiver is sought from competitive selection for contract services to implement the project. In view of MUCIA's (Midwest Universities Consortium for International Assistance) successful prior involvement in the area of higher agricultural education in Indonesia it is uniquely qualified to implement the project proposed hereunder.

The AID loan will fund the foreign exchange costs and perhaps limited local currency costs of the project. Procurement will be restricted to the U.S. for the technical assistance component and to Code 941 countries for the training and commodity elements.

C. Description of the Project

Because of the great importance both to the continuity of training for participants presently in the United States and to the continuation of program activity, the GOI assigned a Task Force operating under the authority of the Consortium of Agricultural Sciences to give detailed attention and consideration to the principles, issues and programs presented in the Project Paper and it has received their endorsement.

1. This is a project to install and test a nuclear system of agricultural education in direct support of Indonesia's development objectives specified in its second five year plan. This plan, PELITA II, has specified that the national goal for Agriculture is "to develop an integrated effort to increase production, equalize income distribution and create more employment opportunities for the

agricultural sector". For Education it is "to develop and strengthen institutions of higher learning into mature scientific centers promoting national development programs". Thus through an integrated system of the best developed universities helping the better developed universities helping the least developed universities, a multiple leverage and expansion effect can produce the trained manpower for agricultural development, the needed community service programs, the applied agricultural research programs, effective instructional programs, and efficient administration to meet the national goals that are specified above.

Since a significant proportion of the Indonesian population are farmers belonging to the lowest income group, national policy for both agriculture and education is directed at the rural poor. These are farmers in food crop production, small holder industrial crop production, animal husbandry and fisheries. Thus it is top government priority to help this class of citizen. And it is this specific class of citizen that becomes the focal point, and the ultimate beneficiaries of the proposed project.

PELITA II has analyzed the problems of the above groups of rural poor in the following way: Farmers in food crop production can be helped primarily through assistance in increasing output. Projected yield increases for the Second Five Year Plan are rice 21%, corn 60%, sorghum 300%, cassava 28%, soybeans 35% and mungbeans 38% for example. The principal instruments for achieving the goals with respect to food crop production, including horticulture, are extension of technology and research. The number of extension service personnel, extension specialists and supervisors will be increased according to needs, and their knowledge will be improved. Small holder and farm laborers in estate agriculture are to be assisted through increasing total production, productivity, and hence wages per worker, and by expanding employment through development of processing and marketing facilities. Creating the knowledge and then having it extended are two of the principal policies specified to accomplish these ends. For example, in the field of animal husbandry the first listed policy is that of improvement of extension services to farmers involving animal health and disease control, improvements in breeds, improved feeding, improved processing and marketing, and improved finance through cooperatives. These are all fields requiring applied research and additional manpower development. In the development of small fisheries the intended policy is also to intensify extension and research.

Thus in each instance there is a need for additional trained manpower. Manpower to extend research to farmers, manpower to undertake relevant research, manpower to teach in the classroom as well as in the field, manpower to teach how to do research that is relevant,

and manpower to teach the teachers. Ultimately all this must be accomplished by a system of Indonesian institutions in the Indonesian setting on a nation-wide scale.

This proposed nuclear system will be based on the accomplishments of the 5-year AID grant project in Higher Agricultural Education plus a USAID loan supporting participant training of approximately 3,840 man-months, a technical assistance program of approximately 165 man-months, and a commodity program of approximately \$1,100,000.

2. The agency of the Government of Indonesia (GOI) having ultimate responsibility for the nuclear system is the Department of Education and Culture (DOE) but with the role of coordination effected by the Consortium of Agricultural Sciences (KIP). Responsibility for this project will reside with the Director General of Higher Education.

Eight universities \* having agricultural faculties have been selected for intensive development with assistance through consultants, and commodities. The universities are the Institut Pertanian Bogor (IPB) in Bogor, Java; Gajah Mada University (UGM) in Jogjakarta, Java; Padjadjaran in Bandung, Java; Brawidjaja in Malang, Java; Andalas in Padang, Sumatra; Sumatra Utara in Medan, Sumatra; Hasanuddin in Sulawesi; and Udayana in Bali. Assistance in the form of participant training only will be extended to other universities in Indonesia with agriculturally related faculties, depending upon the availability of language and subject matter qualified candidates.

Two of the eight universities, Institut Pertanian Bogor and the University of Gajah Mada, have been selected to move to major status in the agricultural sciences and to carry a full range of programs. They will have the responsibility to create new programs in the field of rural community service, applied agricultural research, academic instruction and administration and to test their effectiveness and relevance and to install them in the pilot system. The other six universities have been selected to cover a wide range of national institutions with primary responsibilities for implementing PELITA II in their regions.

The GOI has indicated its preference that MUCIA continue as the contractor with the responsibility to look for the best placement of the participants in U.S. or other universities in selected third countries, to provide the technical assistance, arrange for the procurement of commodities and to advise and consult with specified Indonesian agencies and institutions as requested.

3. It is reasonable to expect that the inputs supplied in this project will produce the outputs and accomplish the project purposes? Our answer is affirmative based on several factors. One compelling reason is the comprehensive planning system utilized by both IPB and UGM to assure a logical relationship between the level of technical assistance, training, and other inputs to desired outputs and eventual achievement of program aims. Both universities have adapted the "logical framework" methodology to their own planning requirements. (Refer to Annexes 2 and 3.)

Another factor is the history of experience with previous projects in Indonesia. The Institut Pertanian Bogor had a successful 10 year program with the University of Kentucky between 1955 and 1965. IPB and the University of Gadjah Mada with some of the national universities in the provinces are completing a successful 5 year institution-building project in 1976 with AID/MUCIA assistance. A high-level external AID review team concluded that this project was on "target in almost all of its aspects" and that an additional project at this time was both reasonable and necessary to attain the project purpose.

A third factor relates to the personal and professional qualifications of the Indonesians who will have responsibility for the successful execution of the project. The Indonesian leadership has received post-graduate education primarily in the United States and is well acquainted with the relationship between agricultural colleges and universities in the United States and the development of American agriculture. It is their desire to see more Indonesians have this professional experience with greater emphasis on the extension and applied research aspects. Furthermore, the Indonesian leadership at all levels is highly motivated to have their institutions of higher education and particularly the agricultural institutions contribute to the improvement of both the quantitative and qualitative aspects of rural life. This is reflected in PELITA II because the Government of Indonesia realizes that time is short and the agricultural development problems are pressing.

A final reason is the special background and experience which MUCIA brings to the project. As a consortium they have been working with Indonesian colleagues for the past five years and have provided participant training, technical assistance, and have arranged for procurement of commodities in a manner generally considered to be "on target".

4. At the end of the project the nuclear system of agricultural education for development will be established. It will consist of two core institutions, the Institut Pertanian Bogor, and Gadjah Mada University offering a program in agricultural extension and public service, a program of applied research in agricultural problems, and an academic program offering the 140 credit first degree, the masters degree, and the doctors degree.

Associated with these two major universities will be the universities of Padjadjaran, Brawidjaja, Udayana, Hasanuddin, Andalas, and Sumatra Utara. Most of these universities will have installed the 140 credit system for the first degree, will be sending their own staff members to IPB and UGM for advanced degrees, and will be receiving direct professional and support services

from IPB and UGM. Examples of services to be provided to these six agricultural institutions from the two core universities are advisory services on extension, community service, and applied research programs, consulting and advisory services on curriculum revision and laboratory and library development.

Thus each university in the nuclear system will be producing first degree graduates in the new system who will enter the man-power pool and bring their special training to bear on agricultural development. A selected number will be able to take the Masters and Doctoral degrees at either IPB or UGM and enter the man-power pool for persons requiring that level of training. At each of the advanced degree levels, students will be admitted who are continuing students and those who have had experience working in agriculture or teaching in agricultural faculties in the other universities.

In addition selected staff members from other universities will have received advanced training in critical agricultural fields and returned to their universities to take leadership in development programs in their universities and in their communities.

#### D. Summary Findings

The Agricultural Education for Development Project will help Indonesia meet its short and longer-term qualitative and quantitative manpower needs in the field of rural agriculture. This will help remove one of the major bottlenecks to the development of the agriculture sector and will have a favorable impact on the rural populace through the creation of job opportunities and improvements in agricultural income.

The emphasis in Indonesia's Second Five Year Plan on agricultural development and expanding the role of the universities in national development is very much in harmony with priorities established for U.S. assistance by the U.S. Congress under the Foreign Assistance Act. Moreover, the assistance which will be provided under this proposal fits particularly well with the current Indonesian situation which can be described as an economy with an increasing base on the financial side but one which has major shortcomings in the areas of institutional and manpower development.

Considering the accomplishments of the predecessor project in higher agricultural education and the great enthusiasm and excellent capabilities of the participating Indonesian universities, it

is highly probable that the Project will achieve the planned objectives, and that it will also serve as a pilot system for the long-term development of the Indonesian Higher Agricultural Education System.

Alternative strategies for the creation and maintenance of manpower needs for development of the rural agricultural sector have been compared to the Agricultural Education for Development Project as designed and presented in this paper.

USAID finds the Agricultural Education for Development Project technically, economically, and socially sound. Furthermore, the project meets all applicable statutory criteria (see statutory checklist Annex E).

This Project Paper, including the logical framework and the Project Performance Tracking Network, has been developed in a fully collegial style with representatives of the Indonesian Consortium of Agricultural Sciences. They reviewed the project paper and participated in drafting of several of the critical sections.

#### E. Project Issues

One issue relates to the five year time period for the project. Justification for a five year project is provided by several factors. One is that the original development goals specified at least a 10-year project period of which the first five year phase is being completed. Since the independent, non-AID, evaluation team found that Phase I was on target and largely moving toward accomplishing its goals, a predisposition was established for the second five year period for Phase II to complete the ten year, minimum period required to achieve the project purpose.

More explicitly, a five-year project life will be needed to establish a doctorate program of some quality at IPB, initiate a doctorate program at UGM, and fully institutionalize the four-year B.Sci. curriculum at the six non-pembina institutions. All of these program changes can occur only gradually since they are dependent upon staff expansion and upgrading, experimentation and evaluation, and related facility development.

The responsibility of the university for executing the Tridharma philosophy of teaching, research and public service has been approached in this project by carefully limiting its purpose to that which the project can reasonably be expected to accomplish, namely, a nuclear system of higher agricultural education that could produce substantial trained manpower at various levels and with specific emphasis on programs of community service, applied research, undergraduate education, graduate instruction and effective administration of university resources.

Moreover, there is a specific interest and desire on the part of the DOE and the Universities to plan and develop procedures for strong and effective programs in community service and applied research with appropriate linkages to other government agencies and activities.

In Indonesia the development of the total system of higher agricultural education will require heavy investment most of which must come from the Indonesian Government itself rather than foreign donors. The issue of the magnitude of the USAID contribution is resolved by considering that this project is an attainable strategic and catalytic element that is critical to the development of the total system. The USAID contribution is thus viewed as a necessary step to the establishment of the nuclear system, but not a sufficient magnitude to accomplish the system wide goal.

Part II - PROJECT BACKGROUND AND DETAILED DESCRIPTION

A. Background

1. National Policy for Agriculture and Education

The National Goal for agriculture is to:

"develop an integrated effort to increase production, equalize income distribution and create more employment opportunities for the agricultural sector".

The Companion Goal for Education is:

"to develop and strengthen institutions of higher learning into mature scientific centers promoting national development programs."

In supporting the national programs, stress is placed upon the involvement of students in national and regional development. Special projects are being used to involve the student and the university in activities at the village level, thereby increasing university contact with the rural community.

A significant proportion of the Indonesian population are farmers belonging to the lowest income group. Therefore, efforts to increase farmer-income are of the utmost importance in equalizing the income distribution. Farmers belonging to the lowest income group are usually those related to food crop production, small holder industrial crop production, animal husbandry, and fisheries. Therefore, top priority will be given in developing these areas into a more efficient system of production, resulting in an increase in income. This in turn will create new work opportunities in rural areas.

Priorities in Agriculture

Specifically, the priority areas are as follows:

1. Improve the ability of farmers and fishermen to increase production.
2. Continue efforts to increase rice yields to attain self-sufficiency.
3. Increase production of agricultural commodities for the export market.
4. Lower the rate of non-employment in rural areas.
5. Increase production of industrial crops to support development of domestic industries.
6. Increase the utility of natural resources and set measures to conserve these resources for perpetual utility.

### Targets for Agriculture

1. Increase the area under rice production by means of intensified production methods from 4.3 thousand ha in 1974 to 6.1 thousand ha in 1978, or an increase in area of 42% within five years, thereby changing the percentage cultivated under intensified methods from 51% in 1974, to 68% in 1978.
2. Increase the average rice yield under intensified production methods from 2.38 tons/ha in 1974 to 2.55 tons/ha in 1978, changing the general average yield from 1.72 tons/ha in 1974 to 2.00 tons/ha in 1978. This increase in average yield will change the domestic rice yield from 15.03 million tons in 1974 to a target of 18.8 million tons in 1978.
3. Multiply the area under secondary food crops produced by means of intensified methods by 48% for corn, 100 for sorghum, 2000% for cassava, 360% for soybeans, 400% for peanuts, and 667% for cow pea within five years.
4. Increase the production of vegetable and fruit crops together with the development of marketing channels for these perishable products.
5. Increase the production of commercial crops through the application of intensified production methods.
6. Increase the production of poultry by development of intermediate scale poultry farms, improvement of breeding stock in rural areas, and better disease control.
7. Increase in production of beef cattle (cows and buffaloes and dairy cattle) through the development of better breeding stock and better disease control.
8. Intensify fish-rearing in brackish and fresh water ponds including sawahs and increase the area of production.
9. Motorization of the domestic fishing fleet.
10. Improved forest management practices and increased rate of reforestation and rehabilitation, land use planning.
11. Improvement of agricultural credit system.
12. Rehabilitation of irrigation systems and development of new irrigation systems.
13. Improved management of watersheds and tidal areas towards the reclamation of agricultural land.
14. Improved methods of statistical data collections to produce more reliable statistics for planning purposes.

## 2. Manpower Deficiencies in the Agricultural Sector

No reliable manpower studies have been carried out for the agricultural sector. A rough projection of requirements for agricultural professional personnel vs. the anticipated supply by 1978 is included in the World Bank's Education Sector Survey Report for Indonesia. This projection suggests that the requirements for agricultural manpower with Ph.D. and M.S. qualifications will be approximately double the supply, given the present capacity and plans of Indonesia's universities and training institutions.<sup>1/</sup>

"Rule-of-thumb" indicators confirm this broad picture of inadequate professional manpower for the agricultural sector. One estimate places the number of qualified Indonesian agronomists at 4,000, an average of one for every 4,000 Indonesian farm families compared with the 1 per 50 ratio characteristic of the United States. The network of 22 agricultural universities in Indonesia can claim only 60 faculty members (approx.) with Ph.D. qualifications, and all but a few of these are located at the Institut Pertanian Bogor (IPB). Qualitative deficiencies serve to compound the general inadequacy of agricultural professional manpower. All existing data and informed judgments lead to one conclusion: Indonesia must rapidly and dramatically increase its capacity to produce qualified agricultural manpower.

## 3. Present Status of Agricultural Education in Indonesia

The World Bank Education Sector Survey Report for Indonesia describes the current system of agricultural education in Indonesia as follows:

Agricultural Education. Rapid expansion of agricultural faculties during the 1960s has stretched the limited number of qualified staff and restricted budgets and has contributed to poor quality of instruction. Teaching programs have not been well attuned to research, extension and the solution of practical field problems, notably in the provincial universities outside Java. These institutions have been unable to supply the quantity or quality of agricultural graduates at the sarjana level required for regional agricultural development.

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<sup>1/</sup> See Annex 11 of the World Bank Survey Report - Ph.D. requirements are estimated at 230 vs. an availability of 110. At the M.S. level requirements are 1880 vs. a supply of 1020. Moreover, the expanded requirements of the Government's BIMAS and agricultural extension services were not estimated.

Twenty-five of the 40 universities in Indonesia have a total of 49 faculties of agriculture and related sciences including: Agriculture, 21; Animal Husbandry, 15; Veterinary Medicine, 3; Forestry, 4; Fisheries/Biology, 4; and Agricultural Technology, 2. All faculties prepare students for the sarjana muda degree but only seven faculties prepare for the sarjana degree. Four of these seven faculties depend on the Institute Pertanian, Bogor, (IPB) and Gajah Mada University (GMU) for part of the sarjana training.

All faculties together enroll about 10,500 students with an annual intake of about 3,400 and an annual output of about 1,500 intermediate and about 300 full graduates. Graduates have been generally low in quality (reflecting teacher qualifications and facilities) and have been unevenly distributed geographically. Agricultural faculties in Java produced 1,500 graduates at both levels between 1950-70; the corresponding number for the six major provincial (non-Java) faculties was only 200. Faculties of Agriculture and Animal Husbandry account for about 65% of the enrollment. In agriculture, junior 1/ (non-pembina) faculties account for 85% of the intake but only 21% of the output. The drop-out rate average about 50% from first to second year (5%-10% at IPB and 50%-70% at junior faculties) and about 20% in subsequent years. The repetition rate varies from 20% in the first year to 10% later. University officials have estimated that the average completion rate for the full degree is 10% of intake and the average duration of studies is 6 to 8 years. Some faculties with an annual intake of 50 have produced only 20 intermediate graduates over the last ten years due to (a) high rates of dropouts and repeaters, (b) the time required to make up deficiencies in basic sciences because of a weak secondary school system, and (c) lenient admission policies.

At present the majority of professional agriculturists with post-graduate qualifications is employed by universities. These are unevenly distributed among institutions with IPB having about 50 Ph.Ds and 25% foreign trained staff on its faculty. The professional staff of IPB alone exceeds the total professional staff of the 14 agriculture research institutes in Indonesia. Staff salaries are low (ranging from Rps 10 to 30 thousand pm). Most staff, even full-time, have to seek additional jobs to supplement their income. The full-time teacher:student ratio varies from 1:4 at IPB, where research and extension staff also participate in teaching, to 1:15 at other faculties. The ratio full-time:part-time teachers varies from 1:1.5 at IPB to 1:5 at other faculties.

Almost all faculties suffer from inadequate funds and are deficient in physical facilities. Budgetary provisions barely cover salaries; investment on educational materials has low priority. Specialized facilities for research work, equipment laboratories and field stations are almost exclusively owned by the agricultural research institutes with which the universities have little contact.

Courses are unnecessarily subdivided; curricula lack basic science and practical training. The Consortium of Agricultural Sciences 2/ has now prescribed 'minimum curricula' for the full degree which eliminates many of these weaknesses. Since 1972 IPB has operated a four-year full degree program to be followed by a two-year master's degree course in 1976. However, in the absence of qualified teachers and lack of physical facilities, most other faculties would be unable to implement these curricula effectively. For example, twenty-five faculties do not have sufficient instructional farms on which to provide the prescribed field practice; four faculties have none.

Staff and student participation in research and extension has been nominal. Most students graduating from these faculties are without experience in practical field work and thus have been unaware of the needs of the farmers whom they are supposed to serve, have been unable to communicate modern techniques to farmers and to solve practical field problems.

Faculties of Agriculture carry out little research and tend to be isolated from recent agricultural developments. Only a few have research as a separate item in their budget and, where they have, the average research support does not exceed US\$5,000 per year. All agrocomplex faculties together have much less support than IPB alone (US\$500,000). Less than 5% of the research funds of the Ministry of Agriculture are allocated to universities, with 85% done by research institutes and 10% by other institutions. The research which is conducted by agriculture faculties tends to be elementary, unsystematic and often obscure. Individual faculty members may develop contacts with outside agencies to work on specific research projects but the funds, and consequently the direction, remain with the funding agency. Research collaboration between faculties and research institutes is nominal, partly because most agriculture faculties (except those of IPB) are situated away from research institutes (14 situated at Bogor and 7 at Jakarta).

The proposed Agency for Agricultural Research (para. 206) should help Indonesia to achieve a coordinated system of agricultural research featuring more use of agricultural faculties and better cooperation between the universities and research institutes. The faculties of agriculture at IPB and GMU have been designated by the government as leader faculties to help improve other faculties by (a) the affiliation of junior faculties to IPB or GMU, (b) staff exchange, (c) staff upgrading through summer courses, (d) improvement of curriculum and introduction of education reforms (e) development of collaborative research programs, (f) consultant services, and (g) program evaluation. The pace of the program has been slow and its effectiveness has been limited due to shortage of operating funds, equipment and experimental farms.

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1/ Hereafter 'pembina' faculties will be referred to as leader or senior faculties. Non-pembina faculties will be designated as 'junior' faculties.

2/ An advisory body to the Director of Higher Education in the Ministry of Education.

The program of leader faculties is coordinated by the Consortium of Agricultural Sciences which activities include: helping agro-complex faculties in curriculum planning and development, upgrading of teaching staff, organization of package courses (including staff, equipment and teaching aids) summer schools and seminars, assessment of the needs of developing faculties and evaluation of educational standards. The Consortium has carried out an evaluation of agro-complex faculties and has placed them into four categories: (a) to be developed into graduate faculties, (b) to be developed only as undergraduate faculties, (c) to be merged with other faculties of the university, and (d) to be closed down. Government action to implement these recommendations has been weak.

#### 4. History and Development of Proposal.

The project proposed in this paper is a modification of the MUCIA-AID-Indonesian Higher Agricultural Education Project (497-11-660-190) which covered the five years, 1972-76, (Phase I), of a contemplated 10-year institutional development program.

U.S. assistance to Phase I of the project has been provided through an Institutional Development Agreement (IDA) with the Midwest Universities Consortium for International Activities (MUCIA) which has included the Universities of Illinois, Indiana, Michigan State, Minnesota and Wisconsin. (In 1975, Ohio State and Purdue universities were added.) It provided for the full-time services of two educational advisors at Gadjah Mada University, one at Institut Pertanian Bogor plus a resident director who serves also as academic and educational advisor to the other universities, the Consortium of Agricultural Sciences (KIP) and the Directorate General of Higher Education. In addition, a large number of professional agricultural scientists provide assistance in specialized fields on a short-term basis. The project also finances the overseas training of a large number of Indonesian faculty members as well as limited commodity assistance.

This proposal was developed out of a year of project evaluation covering the first four years of Phase I and planning for Phase II. It became clear during the evaluation that the success of Phase I in meeting project targets merited the planning for Phase II. Indeed, the achievement of the project purposes specified in Phase I require the implementation of a Phase II.

#### 5. Summary of Phase I Achievements

The Government of Indonesia (GOI) has given top priority to agricultural development in their second five year plan (Repelita II). The "Tridharma" philosophy, i.e., the three-fold responsibility of teaching, research and public service in the field of agriculture has become a part of Indonesian law. Furthermore, technical assistance in higher agricultural education was the first request made by GOI of the U.S. after the re-establishment of technical assistance programs sponsored by AID in the early '70s. Few projects have begun with such important indication of official approval and commitment.

During Phase I of the Project, attention was focused on the development of two Pembina (feeder) institutions, i.e., Institute Pertanian Bogor and the Agro Complex at the University of Gadjah Mada. It was expected that these two Pembina universities would become centers of excellence and assist the provincial universities to attain acceptable levels of competence. Some of the highlights of accomplishments in the major university program areas are presented as follows:

a. University Administration and Structure Substantial progress has been made in administration and reorganization of structure that should result in marked improvement in quality of institutional performances.

Directors have been appointed at IPB for the major functions and services which cut across the six faculties, i.e., Faculties of Agricultural Mechanization and Food Product Technology, Veterinary Medicine, Forestry, Animal Husbandry, and Fisheries. These directors are responsible for: (1) undergraduate instruction, (2) graduate studies, (3) research and public service, (4) administration, and (5) public libraries.

The Agro-Complex of six faculties of the University of Gadjah Mada (UGM) is now administered by a Dean and coordinators have been appointed for undergraduate instruction, research and public service, library and general services and commodities. This is a very important recent advance at UGM where it appears essential to have less autonomy among the faculties.

Strengthening of the general services, such as repair shops, central store rooms for scientific supplies and materials, and computing center have been accomplished. These units are also essential in the functioning of the universities. Active communication and program coordination with other agencies is another achievement of Phase I.

b. Instruction Programs - Undergraduate

The major function of any university is the undergraduate instructional program, and emphasis has been rightly placed on improvement of instruction. One of the principal objectives for undergraduate instruction was to institutionalize a four-year, 140-credit Bachelor's of Science degree program. This program was intended to replace the prevailing, three-year baccalaureate course, which did not impart all the basic skills needed by professional agricultural manpower, and the five-year advanced program, which was not the qualitative equivalent of an M.Sc. program, but because of a thesis requirement, resulted in numerous students spending 6-8 years in pursuit of the 5-year degree. Evaluation of the system and

curricula for a four-year degree program was begun in December, 1974. Change to the four-year B.S.C. curriculum may take longer at UGM, assuming that the evaluation is favorable, because at UGM curriculum changes must be approved by the entire university rather than the Agricultural College as at IPB. Acceptance of the four-year undergraduate curriculum in the non-pembina universities will be accomplished easier because of their relative low level of development and their flexibility. Institution building is necessarily a slow process. The new four-year course will require some adjustment in regard to teaching new classes, scheduling of courses, examinations and advisory appointments. This adjustment period should be relatively short because most faculty members are young and have earned advanced degrees in universities in the Western World.

Some success has been attained with the development of package courses for upgrading of the non-pembina universities. This activity will probably be expanded in Phase II.

c. Instruction Programs - Graduate

From many sources of financial support, it has been possible to assemble 56 Ph.D.'s on the staff of IPB in the several faculties. Only a few members of the faculty of the Agro-Complex at UGM have earned the doctorate degree. IPB had the advantage of assistance for nearly a decade, of a contract with the University of Kentucky, and are therefore much farther advanced than UGM.

As mentioned in a previous section, staff development plan for the project is to train staff up to acceptable levels of expertise so that strong undergraduate and graduate programs will be available at both Pembina universities in the faculties of:

Agriculture	Fisheries
Veterinary Med.	Forestry
Animal Husbandry	Agriculture Mechanization & Food Product Technology.

The "Pipeline" contains approximately 80 M.S. and Ph.D candidates who will contribute to the capabilities of both universities to offer undergraduate/graduate level training for leadership in agriculture education, research and extension.

Indications are that at IPB a Graduate School will be in operation offering M.S. work during the target year of 1976 and doctorate in 1978. Progress has been made in the development of a research farm.

A tract of land now appears to be available at UGM for a teaching, demonstration and research farm.

d. Research and Public Service

Research and Public Service activities have been expanding steadily in all of the agricultural science facilities. IPB has exceeded its targets in Rupiah allocations for research and approximately 40 projects were in operation. Ten of these received MUCIA Commodity support. The Rector of IPB (Satari) has been appointed head of the Central Research Institutes, Ministry of Agriculture. At UGM over 90 research projects are in progress with financial support from the Ministries of Education, Agriculture and Public Works and the Southeast Asian Center for Graduate Study and Research in Agriculture (SEARCA).

Both Pambinas require undergraduate students to do village development work for a semester, at which time they live in the villages and work for solutions of these problems that will improve the quality of rural life. Such problems as nutrition, controlling malaria, increasing food production, securing potable water are addressed. All undergraduates are required to do this practical work supervised by their professors. Under these circumstances, it is possible to use multi-disciplinary approaches to rural problems.

Both Pembina Institutions are involved in training Indonesian transmigrants who will settle new farm land on the outer islands and in planning for the training of extension workers.

Perhaps the most significant achievement of Phase I was the up-grading of undergraduate instruction and the development of the four-year undergraduate course at I.P.B. An important goal for Phase II is the transfer of this pattern of undergraduate instruction to six carefully selected provincial universities, i.e., Padgajaran and Brawidjaja (Java), Udayana (Bali) Hasanuddin (Sulawesi); Andalas and Sumatra Utara in Sumatra.

The national emphasis on the undergraduate level is to give all National universities the capability to train graduates to the B.Sc. level in large numbers who will then provide trained personnel in adequate numbers for employment in agricultural research agribusiness, teaching in the agricultural high schools and to engage in farm management.

6. Prior USAID Assistance in Related Areas.

In the period 1955-1965 USAID provided technical assistance to the Institut Pertanian Bogor under a contract with the University of Kentucky. Kentucky team staff member held long-term teaching and research assignments in IPB classrooms and laboratories, selected Indonesian students and staff for overseas participant training, and ordered books and equipment. The program was terminated in 1965 and a significant outcome was a corps of young staff members trained overseas

with attitude, values and training that provided the basis for the MUCIA effort five years later.

In the area of agriculture, USAID has had experience with the implementation of Agricultural Research (#198) and Assistance to Agriculture (#189). These have frequently called for coordination with university research programs. The concurrent project proposal, "Agricultural Research Assessment and Planning", would be closely coordinated with both the Consortium and the Agricultural faculties in all regions as a public service opportunity to farmers and rural people.

#### 7. Other Donor Assistance.

In the main the contributions of other donors have been relatively small and selective.

The Agricultural Development Council sponsors fellowships in the rural social sciences and has served under contract with the Ford Foundation to offer additional fellowships.

The Ford Foundation has offered fellowships in agriculture, animal husbandry and environmental studies and has given other assistance to selected universities.

The Rockefeller Foundation has a program of assistance to Gadjah Mada University in medicine, social sciences and agriculture.

The Australian-Asian Universities Cooperative Scheme (AAUCS) is sponsoring workshops and offering training scholarships at three universities (Hasanuddin, Brawidjaja, Udayana) in animal husbandry and forage crop improvement.

The Canadian IDRC supports a research project on cassava at Brawidjaja University, East Java.

UNESCO has operated a series of lectures and workshops and made recommendations to improve the administration and management of universities.

#### 8. Indonesian Activities.

The two oldest agricultural related universities in Indonesia are on Java: Gadjah Mada University in Jogjakarta and Institut Pertanian Bogor in Bogor. Other universities have been established since independence, and today 23 contain agriculturally related curricula.

In order to strengthen these agricultural faculties, the GOI developed a concept under which the older, more established faculties (formerly called "pembina" faculties) are responsible for assisting the younger faculties at the other Universities (formerly called "non-pembina"). IPB and UGM, having been designated as centers of excellence, coordinated their activities with the "non-pembina" faculties under the direction of the DOE's Consortium of Agricultural Sciences.

The DOE has also utilized a substantial program of staff-upgrading through short-courses, workshops and seminars for staff at Agricultural related faculties. These have included agricultural subject matter as well as the subject of university administration and management. The DOE has used the Consortium of Agricultural Sciences also for making studies, analyses, and recommendations for the development of the system of higher agricultural education.

Through the development budget the GOI has continued to give increased assistance to higher agricultural education. It is expected that this trend will continue into the future.

#### 9. Studies Done.

Three studies are of particular significance. The first is a set of investigations undertaken by the Indonesian faculties in cooperation with MUCIA to evaluate the first four years of Phase I and to draw plans for Phase II. The documentation was presented to the Annual Review in February 1975 and is made up of 32 separate documents. Complete sets are available for review in the USAID office.

The second study is made up of two documents. The first is entitled, "Briefing Handbook, AID Evaluation Team," MUCIA Jakarta Office, November 1974, and the second is the report, "Evaluation: MUCIA-AID-Indonesian Higher Agricultural Education Project," Roland R. Renne and Kenneth L. Turk, 14 December 1974.

The third study is "Indonesia Education Sector Survey Report", Report No. 443a IND, dated February 5, 1975. It is an internal document of the World Bank at the present time and presents a comprehensive and highly useful report of the situation with respect to agricultural education.

10. Views of MUCIA Team.

The MUCIA team endorses the report of Renne and Turk (December 1974) which concluded that "..... the Higher Agricultural Education Project is on target in almost all of its aspects". The evaluation team concluded further that an extension of the project through the second five year phase of the original 10-year assistance program, with certain changes in emphasis and design, is both reasonable and necessary if the project is to meet its specified purpose and contribute to the sector goal.

11. Opinion of Other Donors.

Conversations with representatives of both the Ford Foundation and Rockefeller Foundation indicate their judgment that a continuation of the project is "absolutely essential" if the institutions of higher agricultural education are to make their contribution to the sector goal through achieving the project purpose. Neither Foundation has as yet offered their program resources for this project. Australian representatives of the university assistance scheme have also expressed their support for continuation of the project, and they expect to continue their own assistance program.

The Government of Indonesia expects to undertake a further analysis of recommendations of the World Bank Educational Sector Survey Report under the coordination of the Consortium of Agricultural Sciences to insure an integrated nation-wide development program for higher agricultural education.

## B. Detailed Project Description

### 1. Sector Goal:

To establish an indigenous Indonesian capability for undertaking and maintaining national agricultural development (production, employment, and income distribution.)

This goal statement is consistent with the national goal for agriculture from the Second Five Year Plan (Pelita II) which is "to develop an integrated effort to increase production, equalize income distribution and create more employment opportunities in the agricultural sector." The sector goal recognizes that the problems of the rural poor are those associated with low levels of food production (thus low levels of food consumption and nutrition) and inadequate employment opportunities in the rural sector. Farmers belonging to the lowest income group are usually to be found in food crop production, small holder industrial crop production, animal husbandry and fisheries.

### 2. Project Purpose:

To establish a nuclear group of agricultural universities with the capacity to provide highly-qualified agricultural manpower research, and public service activities appropriate to Indonesia's needs.

The current system of higher agricultural education in Indonesia consists of twenty-four universities. The two leading universities, IPB and UGM, offer instruction in all six broad areas of agricultural study and have by far the largest faculty strength and student enrollment. The other universities offer instruction in only one or two areas, generally agriculture and animal husbandry. The attached chart provides a summary description of the higher agricultural education system as of January 1974, identifying the universities and showing their enrollment, number of faculty, and proposed future status per recommendation of the Consortium of Agricultural Sciences:

INDONESIA  
UNIVERSITY FACULTIES OF AGRICULTURE AND RELATED SCIENCES  
(1973)

UNIVERSITY	FACULTY	YEAR ESTABLISHED	STUDENT ENROLLMENT	TEACHERS		AFFILIATION	EVALUATION BY CONSORTIUM OF AGR. SCIENCES
				FULL TIME	PART TIME		
1. Institute Pertanian Bogor (IPB)	Agriculture	1941	330	165	na	-	-
	Agri. Techn.	1964	252	58	na	-	-
	Animal Husbandry	1963	202	43	na	-	-
	Vet. Med. I	1948	170	78	na	-	-
	Forestry	1963	325	37	na	-	-
	Biol. and Fisheries	1963	159	44	na	-	-
2. Gajah Mada Yogyakarta (UGM)	Agriculture	1946	768	65	na	-	-
	Agri. Techn.	1963	564	29	83	-	-
	Animal Husbandry	1969	419	28	126	-	-
	Vet. Med. II	1946	450	44	39	-	-
	Forestry	1963	544	30	150	-	-
	Biology	1963	354	44	na	-	-
3. Syah Kuala, Banda Aceh	Agriculture	1964	67	21	23	IPB	a-1
	A. H. Vet.	1960	143	4	26	UGU	a-2
4. Sumatera Utara Medan	Agriculture	1956	817	50	50	-	(a-1)
5. Riau, Pekanbaru	Fisheries	1963	57	6	24	IPB	a-2
6. Andalas, Padang	Agriculture	1954	560	61	30	-	(a-1)
	Animal Husbandry	1963	120	39	20	IPB	(a-2)
7. Sriwijaya Palembang	Agriculture	1960	275	29	-	IPB	a-2
8. Jambi, Telanipura	Agriculture	1963	36	18	-	-	a-2
9. Tanjungpura Pontianak	Agriculture	1963	50	3	13	IPB	a-2
10. Lambung Mangkurat, Banjar Masia	Agriculture	1961	98	22	-	IPB	a-2
	Forestry	1964	66	2	193	IPB	b-1
	Fisheries	1964	40	1	-	IPB	b-2
11. Mulawatman Samarinda	Agriculture	1962	39	5	21	IPB + GUM	a-2
	Forestry	1962	88	-	-	-	b-2
12. Sam Ratulangi Manado	Agriculture	1960	314	23	43	-	a-2
	Animal Husbandry	1963	224	8	28	IPB	a-2
	Fisheries	1967	56	2	38	-	b-1
13. Hasanuddin Ujung Padang	Agriculture	1962	543	38	250	IPB	(a-2)
	Animal Husbandry	1963	283	26	36	-	-
14. Pattimura Ambon	Agriculture	1963	30	3	30	IPB	a-2
	Animal Husbandry	1963	15	2	31	IPB	b-1
15. Jendrawasih Manokvari West Irian	Agriculture	1964	38	3	13	IPB	a-2
16. Mataram Lombok	Agriculture	1967	79	3	21	GUM	-
	Animal Husbandry	1968	49	0	18	GUM	-
17. Udayana Denpasar Bali	Agriculture	1967	106	9	30	-	(a-2)
	Vet. + An. Husb.	1962	185	32	31	-	(a-1)
18. Jember East Java	Agriculture	1961	264	4	47	GUM	a-1
19. b/ Brawijaya Malang	Agriculture	1960	371	18	48	-	(a-1)
	Animal Husbandry	1961	99	8	77	IPB	(a-2)
20. Diponegoro Semarang	Animal Husbandry	1964	261	8	-	-	a-2
21. J. Sudirman Purwokerto	Agriculture	1961	247	12	41	GUM/IPB	a-2
	Animal Husbandry	1966	72	7	41	GUM/IPB	a-2
22. Padjajaran Bandung	Agriculture	1959	550	44	na	-	(a-1)
	Animal Husbandry	1963	na	23	na	-	(a-1)
23. Musa Candana Kupang Timore	Animal Husbandry	1964	29	0	13	IPB	b-2
24. Lampung Univ.	Agriculture	1971	57	na	na	na	na
TOTAL			10,669	1,199	2,833	-	-

a/ Evaluation Categories:  
a-1 = to be developed to M.S. level  
a-2 = to be developed to B.S. level  
b-1 = to be integrated with other faculty  
b-2 = to be closed down

Source: (a) Agency for Agr. and Training  
(b) Consortium of Agri. Sciences

b/ 25 Faculty of Veterinary Science transferred to the Airlangga University, Surabaya

Date: January, 1974

Source: Indonesia Education Sector Survey Report, IBRD, February 5, 1975, Annex 9.

The eventual plan is to upgrade the entire system of higher agricultural education. However, in order to make optimal use of limited human and financial resources towards that end, a three phase process is envisaged. Phase I (1971-1976) focussed on the two leading universities. Phase II (1976-1981) is the concern of this loan and is described below. In Phase III (after 1981), the entire higher agricultural education system of 22-24 universities will be strengthened through the efforts of the two Pembina universities and the six selected non-Pembina universities being upgraded during Phase II.

It is expected that at the end of Phase II of the project, the participating universities will be more fully prepared to meet the growing demands placed on them by the critical need for agricultural development. The universities are at two basic levels of development at the present time and are expected to develop accordingly.

On the first level, are the more mature Pembina (leader) universities, IPB and UGM. They are presently playing leadership roles in agricultural education and have a substantial number of professionals on their staff who have master and doctors degrees. During Phase II they will continue staff development through the participant training program and will be capable of the development of public service support activities on a national and regional level, will conduct applied and basic research required to support public service and training (especially graduate training) activities and will be able to provide 3 levels of degree training, i.e., B.S., M.S. and Ph.D. level in addition to non-degree training.

These universities will be able to continue to provide leadership in developing new courses, curricula and instruction materials for the lesser developed faculties in all six broad areas of agricultural study: Agronomy, Animal Husbandry, Vet. Sciences, Forestry, Fisheries, and Technology and Agricultural Engineering.

At the end of Phase II these universities should be mature institutions which would benefit from cooperative research activities and from exchange of scientific information and staff with other mature universities and would utilize training abroad in only the more specialized areas of agricultural science. The detailed five-year development plans for IPB and UGM during Phase II are attached as Annexes B and C, respectively.

On the second level are the six selected non-Pembina universities: Padjadjaran, Brawidjaja, Udayana, Hasanuddin, Andalas, and Sumatra Utara. These universities have faculties in one or two areas of agricultural study which have improved to a point that they are in a position to take on additional roles of support to other universities, working closely with UGM and IPB. During Phase II they will continue to train staff to the Masters level with a few Ph.D. staff being trained in critical areas where graduate degree programs are to be developed late in Phase II.

These universities will have developed public service programs at the provincial level and will be capable of conducting applied research programs in support of public service and teaching programs. They will have fully developed a full 4-year curriculum and will be capable of assisting other universities in the initiating 4-year B.S. level programs. The stronger faculties in each of these universities will have initiated M.S. degree programs.

This group of universities will not only strengthen their existing faculties, principally agriculture and animal science, but will develop other faculties (colleges) as required by the agricultural priority and critical needs of the region.

M.S. and Ph.D. level staff for these universities will continue to be trained at IPB and UGM with only highly specialized training not available in Indonesia being carried out abroad.

In specific terms, the following conditions should be achieved by the end of Phase II:

1. At IPB, M.Sc. and Ph.D. programs fully established and Ph.D. program initiated. These two Pembina (leader) universities awarding at least 100 graduate degrees on annual basis.

2. Basic 4-year B.Sc. curriculum fully established at a minimum of 4 non-Pembina universities, with graduation of 600 students on annual basis.

3. Targeted increase in percentage of faculty with Ph.D. qualifications:

- a. IPB: From 15% in 1976 to 25% in 1981 (approximately 100 Ph.D.'s in total faculty of 400).

- b. UGM: From 1% in 1976 to 20% in 1981 (approximately 50 Ph.D.'s in faculty of 250).

- c. Non-Pembina universities: 0% to 3-5% in 1981.

4. Nuclear group of Pembina and non-Pembina universities serving as base for upgrading of entire higher agricultural education system according to well-coordinated national plan.

5. University faculties effectively supporting and supplementing government programs of agricultural extension, research, and service.

### 3. Planned Outputs

#### a. The basic 4-year B.Sc. curriculum will be installed at the selected six non-Pembina universities

IPB has already completed its pilot experiment with the four-year, 140-credit curriculum leading to a B.Sc. degree. UGM is in the final stages of a similar experiment. The IPB experience was evaluated in late 1974 and found to be successful. Ministry of Education approval of the four-year curriculum as the basic program for undergraduate agricultural education is expected soon. Following this official recognition, the selected non-Pembina institutions will initiate the B.Sc. program with assistance of IPB and UGM. It is anticipated that a year of preparation will be necessary at each institution prior to implementation of the four-year-curriculum. This preparation will involve review of academic rules, structuring new courses, updating course material, renovation of classrooms and instructional aids, improvement of teaching methods, and purchase of experimental farms for student practical work. The non-Pembina universities will concentrate on major study areas where they have existing strength and where the proximate eco-system can assist them to become national centers in a particular area of agricultural development.

#### b. Initiation of post-graduate programs at Pembina universities (IPB and UGM)

IPB plans to initiate an M.Sc. program in 1976, at the same time as the first class graduates from the pilot four-year B.Sc. program. The M.Sc. program will be structured around coursework and laboratory exercises, and finalized by an examination and a thesis based on original research undertaken. IPB then plans to initiate a Ph.D. program by 1978. UGM is still completing its experiment with the B.Sc. program and will launch post-graduate programs 1-2 years later than IPB.

The post-graduate programs developed by IPB and UGM will eventually provide a source of well-qualified faculty for the entire system of higher agricultural education.

c. Returned participants placed on faculties of institutions in nuclear group

Approximately 200 participants will return to join the faculties of the nuclear group of universities. Roughly one-half of these will be placed at IPB and UGM, and the other half apportioned among the six non-Pembina universities.

d. University program of rural/community service established.

There are plans to expand public service programs to provide an adequate base for a more intensive and permanent program. Neither administrative nor program lines of communication of this sector are well defined. Steps will be taken to establish a rationale of action, internal and external linkages and modification of present arrangements.

Extension staff specialists both at the national and provincial levels are needed. These will be trained by the universities in their respective disciplines and supporting fields and will provide both technical and methodological assistance to the extension service.

Projects having a high priority in agriculture, such as rice and secondary crops, fishery production and animal production, land reclamation, forest management and environmental studies, will be developed and integrated with national and regional planning and action agencies.

Non-formal education programming, reaching such groups as transmigrants and army personnel and using means such as publications and news articles written for farmers, radio, satellite television, demonstrations and special training programs, will be developed by staff and students.

In the field of extension and public service, staff members from IPB and UGM are already actively engaged in the field working with farm people. Two excellent examples are tidal rice areas in South Sumatra and South Kalimantan that have been designated as transmigration areas. University staff members are working with farmers and government and local officials in solving problems relating to the use of the land, the management of water, fertilizer, and varieties, etc., to increase the production of crops and raise farm incomes. Another example is the work of faculty members in forestry to devise new cropping systems and a "greening" plan to increase food production and farm income and employment

in an area of central Java that has been deforested and is subject to severe soil erosion. It is also an area whose people have been subject in the past to episodes of acute hunger. The approach being used is that of watershed management and already farmers are being taught how to improve their own welfare by improving the natural environment.

e. University programs of applied agricultural research established

Extensive programs of applied agricultural research will be established, both to develop research skills in graduate students complementary to the instructional program and to focus the knowledge and competence of university faculties on critical development needs and problems in the agriculture sector. The universities must create effective administrative units to promote and coordinate research efforts by faculty and graduate students and to establish appropriate linkages with government agencies responsible for agricultural research.

f. Physical facility development

IPB and UGM will need to expand/upgrade various physical facilities to facilitate the high-quality programs of instruction, research, and service intended. For example, IPB plans to construct the following training centers: a product processing laboratory, seed center, experimental station workshop, and animal production and feed mills. UGM will have similar needs, and the non-Pembina universities must upgrade their facilities to permit effective implementation of the four-year B.Sc. curriculum.

Part of the GOI contribution to the loan-financed project will be the equivalent of \$3.15 million for buildings, experimental stations, and housing.

g. Implementation of a national development plan for higher agricultural education

A task force of Indonesian professional staff will be appointed with specific responsibility for drafting a nationwide development plan. The plan will specify the various public service and applied research programs to be developed at each institution having agricultural faculties. It will also specify the several degree levels and program emphasis to be established at each faculty and the time-frame for development. Implementation of the plan will be based

upon the early experience of this nuclear system which will be assisted by the AID loan. The plan, when adopted by the GOI, will be the blueprint to be followed by GOI and other donors. Special attention will be given to the role and place of the proposed World Bank loan in higher agricultural education.

h. Effective university administration systems developed

Generally, administrative improvements will focus on providing centralized administrative services and effective procedures for student registration; personnel management; records administration; budgeting, disbursements, and accountability, etc. as necessary for vastly improved programs of teaching, research, and service.

4. Planned Inputs to the Nuclear System.

a. Advisory services of approximately 165 man-months of visiting professors.

Visiting professors will serve on committees for doctorate candidates and assist in the organization and establishment of public service programs, advise on course content, counsel on development of curriculum, offer seminars, and assist in the development of demonstration and experimental farms.

Consideration will be given to returning visiting professors so that they might capitalize on previous experience and continue working with Indonesian staff.

Emphasis will be given to the rural social sciences and to agricultural scientists with experience in applied research and extension program development.

b. Participant training including research of approximately 3,840 man-months.

Priority will be given to participants who are pursuing a doctoral degree rather than to those with other objectives.

The project will undertake a special effort to include both applied research and public service applications and demonstrations as they effect rural life in the participants' program. Under conditions to be specified later, it is planned that spouses may accompany participants on PhD programs.

c. Educational and scientific equipment, including books and periodicals for libraries purchased from U.S. or other countries.

d. Construction and development of teaching and research facilities.

e. Maintenance and expansion of counterpart staff to facilitate program activities of visiting professors.

f. Public service funds supplied by the GOI.

g. Research funds supplied by the GOI.

h. Other educational and scientific equipment and supplies including books and periodicals.

5. Critical Assumptions.

a. GOI development goals and priorities for Agriculture and for Higher Agricultural Education remain high and financial support continues to be forthcoming.

b. The Directorate General of Higher Education provides strong leadership in planning, implementing, coordinating, and evaluating the programs that will result in maximum growth and development of both the leading agriculturally related faculties and those in the other universities.

c. That sufficient funding is available from the USAID loan to permit the provision of top quality visiting professors in critical program areas and to develop high-quality, tailor-made programs for Indonesian Participant Fellows studying at American or other country universities.

d. The DOE and the Department of Agriculture (DOA) develop sufficiently flexible inter-agency linkages necessary for effective public service and research programs.

e. Official recognition and approval be given to the four-year curriculum now being tested as a pilot program and that it be promulgated as the instrument for training agricultural manpower at the first degree level.

f. The GOI will provide sufficient English language training such that qualification in English will not be a limiting factor in the selection and training of Indonesian staff participant fellows. A TOEFL score of 450 will be sufficient for nomination to a U.S. University under this program.

**Table I. Distribution of A.I.D. Resources by Input Category**

<b>Category of Input:</b>	<b>Percent:</b>
<b>Participant Training*</b>	<b>55</b>
<b>Overseas Technical Assistance</b>	<b>15</b>
<b>Commodities*</b>	<b>20</b>
<b>Other Support and Overhead</b>	<b>10</b>

**\* Subject to reallocation and shifting**

**PART III. ANALYSIS OF FEASIBILITY**

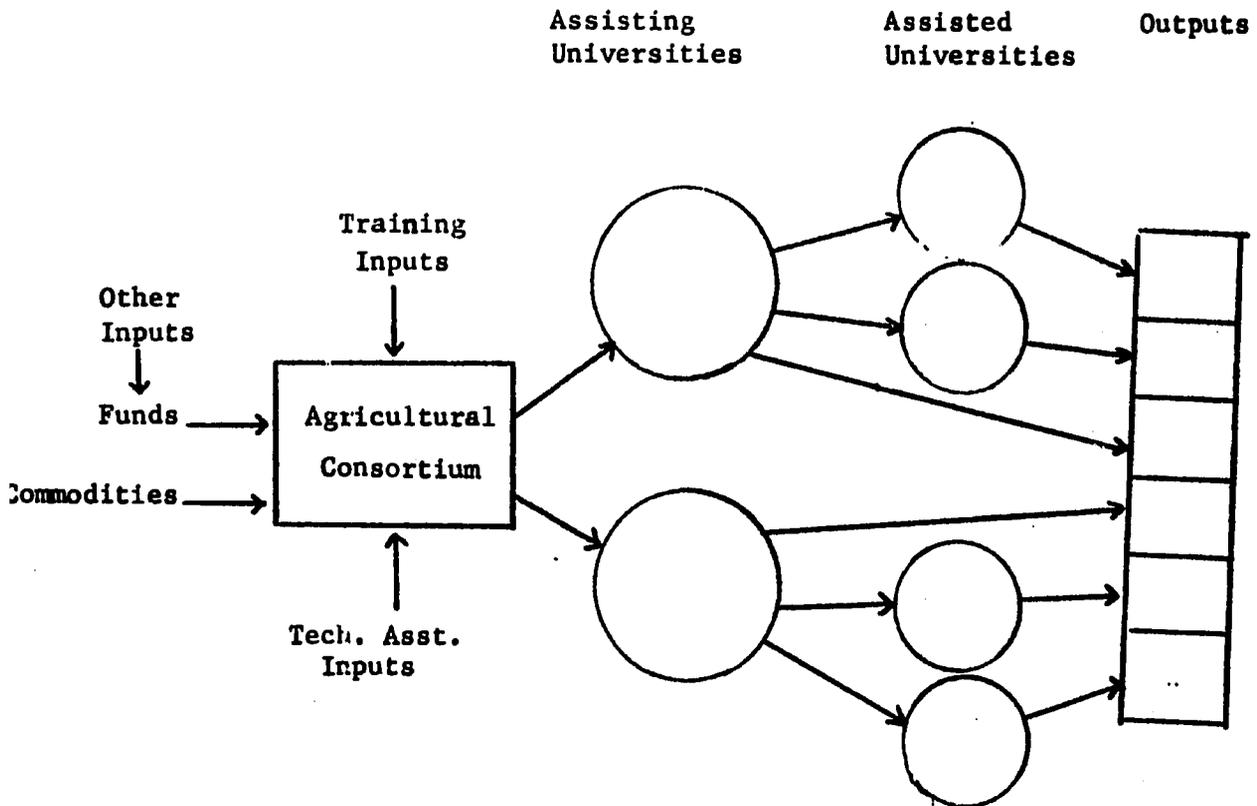
**A. Technical Soundness Analysis**

**1. Strategy for upgrading the higher agricultural education system**

The GOI strategy which would be supported by the AID loan is one of concentrating limited resources on a selected few institutions, assisting them to attain desired standards, using them as a base for upgrading the entire system. This "Pembina" strategy, as it is called in Indonesia, is one that has been devised by the GOI for the specific reason that it gives promise of permitting replication and multiplication/diffusion. It is the further testing and implementation of this set of relationships for a nuclear system that is the purpose of the proposed project.

The "Pembina" strategy is an Indonesian concept and is nationally accepted. Even without donor assistance the DOE has been engaged in a wide variety of activities designed to facilitate this approach and increase the flow of technology from better-developed to less-well-developed faculties and staff. Discussions are even well advanced for the creation of more "Pembina" universities. In the proposed project, a broader system of interaction among various universities is proposed, with the two Pembina universities assisting the six selected non-Pembinas and the remaining non-Pembina universities which otherwise will not participate in this project, while the six selected non-Pembinas will also assist the remaining universities. This interaction is shown schematically in Figure 1.

Figure 1. Relationship within "Pembina" System, Indonesian Faculties of Agricultural Sciences.



The "Pembina" strategy depends upon judicious application of resources for optimal results. As an illustration of the distribution of resources among program areas, see Table II. The actual percentage distribution in any given year will be determined in the Annual Work Plan derived from the Joint Annual Review, and assumes the possibility of carrying over budget funds between years. The resources will be divided among the institutions with 2/3 to IPB and UGM and the balance to the other universities.

Table II. Distribution of Participant Training and Technical Assistance by Program Area.

Institution	Category of Input	Program Areas				
		Public Service	Research	Under-graduate	Graduate	Admin. Services
IPB & UGM	Part. Tr.	25	25	20	20	10
	Tech. Asst.	25	25	20	20	10
OTHER UNIVERSITIES	Part. Tr.	25	25	40	5	5
	Tech. Asst.	25	25	40	5	5

2. Effective application of university resources to agricultural research, extension, and service

a. Present Status of Agricultural Research

Agricultural research is carried out mainly within the Ministry of Agriculture. Until recently fifteen institutes came directly under the five directorates general, while three PNP/PTP research units

were indirectly controlled by the Directorate General for Estate Crops. Additional support for agricultural research comes from the Universities, the Indonesian Institute for Science (LIPI) and private growers. Funds for research are provided principally from the GOI ordinary and development Budget, supplemented by funds for certain tree crops.

Support is also received from approximately 17 foreign donors who provide assistance to some 16 research organizations. There has been little coordination of this support and in certain instances there is duplication of effort. The foreign donors provide assistance to nine of the 15 Ministry of Agriculture Research Institutes, three PNP/PTP supported research centers and to at least three Universities. Data are incomplete, but it is estimated that the total outside support since 1968 exceeds US\$20 million equivalent. Specific programs supported by foreign donors include rice (IDA Credit 246-IND, U.S. AID/Ford

Foundation, Japan, Netherlands); maize and soybean (IDA Credit 246-IND); rubber (IDA Credit 194-IND, UNDP/FAO, Germany); oil palm (IDA Credit 194, Germany); animal bacterial and viral diseases (Australia); tea (IDA Credit 259-IND, Netherlands); sugar (IDA Credit 405-IND); and plant protection and horticulture (Netherlands).

#### b. Present Status of Agricultural Extension

Each of the five Directorates General had their separate agricultural extension service up to the end of GOI fiscal year 1975. This occasionally led to extension workers representing as many as three different directorates contacting the same farmers. From the provincial level downward through the district (kabupaten), the sub-district (kecamatan) and the village (desa) level, the extension workers are primarily funded by local government but received overall direction from the national directorates general extension staff.

The largest directorate of extension was in the Directorate General of Agriculture. They were primarily concerned with operating small demonstration farms of about 3 ha involving 10 to 20 farmers, demonstrating techniques recommended on the basis of small field trials carried out by the Directorate of Techniques, which was responsible for testing out research findings in multilocation trials with cooperative farms of 0.1 to 0.5 ha size. The Directorate of Production then had the responsibility of propagating the improved techniques, as determined by the Directorate of Techniques and of Extension, on a larger scale with farmers in areas of 300 ha.

The Directorate of Extension was also involved with farmer training and provision of short courses at more than 200 rural extension centers throughout the country. Until very recently, no university-trained extensionists were located at the district or sub-district level or at the rural extension centers. The education level of the 13,000 extension workers is low with some 55% having elementary school (6 years) education or less in 1970. Salaries, which are geared to education levels, are also low.

c. The Role of Higher Agricultural Education Institutions in Agricultural Research and Extension.

i. The prime task is to provide skilled manpower for various specialized tasks in research and extension. The need for trained manpower in these areas is illustrated by two passages in a recent World Bank study, i.e., (a)

(a) Of approximately 400 graduate staff at the agricultural research institutes, only 100 held advanced degrees and of this number, there were only 13 Ph.D's.; and

(b) Of the 13,000 extension workers, 55% have only 6 years of elementary education or less and the salaries which are geared to educational levels are also low.

A reasonable goal would be to bring all extension workers up to the B.Sc. level. Present higher agricultural education outputs are quite inadequate: only 150 graduates from IBI<sup>2</sup> per annum and 100 from UGM.

Research workers need far more specialized training and all should have earned the M.Sc. or the Ph.D., preferably the latter. The Pembinas should be graduating Ms.C. and Ph.D. people in priority areas by the end of the project, but have much developmental work to do before the end of the project (1980).

ii. Better prepared teachers for agricultural High schools and the faculties of agriculture in the universities and the Ministry are needed. All of this upgrading will support and improve research and extension.

iii. The universities will contribute to new knowledge through their own research programs and will aid production thereby.

iv. The universities will engage in research for policy determination to give guidance in policy development to give wise guidance to the development of the agricultural sector and to key personnel in GOI.

v. Finally, university personnel are frequently invited to head key positions in the Ministry of Agriculture -- another clear indication of the great shortage of trained manpower in the field of agriculture.

3. Pre-conditions for upgrading faculty performance at Pembina and selected non-Pembina universities

Several factors bear upon the ability of the target universities to upgrade their faculty: the availability of competent personnel to be trained for faculty positions, the probability that trained participants will actually be placed in the positions for which they are trained, and the ability of the target universities to retain and motivate highly qualified faculty.

Regarding the availability of personnel with high potential for effective performance as faculty members, the strengthening of the B.Sc. program at both IPB and UGM provides assurance that large numbers of well-trained B.Sc. graduates will be available. Moreover, many of them will eagerly seek opportunities in university teaching because Indonesians accord the university professor high prestige.

Regarding eventual placement, the loan agreement will contain a covenant that the Borrower will ensure that each student trained in the United States will be guaranteed a position commensurate with his training in a university faculty upon his return.

Regarding inducements to retention of staff and their effective performance, it has already been stated that staff salaries are low. Most faculty members, even those on full-time status, seek additional jobs to supplement their income. It is not expected that this problem can be overcome easily because of the articulation of various salary levels in the public sector. However, because of the prestige associated with university professors, a high turnover of university faculty members is not anticipated. A large number of IPB participants were trained under the earlier AID-financed University of Kentucky contract, and over 90% of these persons are currently on the IPB faculty.

4. Environmental Effect

There are no particular environmental implications of the project in regard to its initial and direct impact. However, environmental studies will be one of the subjects developed within some institutions. Both participant and technical assistance will be focused on curriculum development, applied research, and programs in community service of direct consequence to agriculture.

**B. Financial Analysis and Plan.**

1. Budget Analysis of Implementing Agency. A breakdown of recurrent, non-developmental costs necessary to operate and maintain the agricultural facilities which will be assisted under this project is not available. However, the facilities are well established on-going institutions which received adequate budgetary support from the Department of Education during the five year period of the grant Higher Agricultural Education Project. The recurring operational costs for the institutions in the pilot project should not present the GOI with much of a problem and are thereby reasonably well assured. The replication of the pilot system to other institutions of higher learning throughout Indonesia, however, will depend on other donor participation, particularly the World Bank, in expanding the program as well as on future GOI budgetary availabilities.

2. Financial Plan/Budget: Table II presents a summary of the estimated costs associated with the Agricultural Education for Development Project. The total cost of the estimated five year project is \$10,292 thousand of which approximately \$5,500 thousand represents foreign exchange costs. This amount will be provided under the AID loan. Foreign exchange costs associated with the technical advisors, including their salaries, international air fares and education allowances shall be financed under the Loan. The Indonesian Government will arrange for housing, domestic travel and per diem, office space and secretarial and clerical personnel. These and other local costs should be provided in part or in full from GOI budgetary sources. In the event this does not prove practicable, these local costs may be charged to the loan. The international

Table III. Summary Cost Estimate and Financial Plan \*

Project Elements	AID		GOI		Total
	FX	LC	FX	LC	
Foreign Tech. Ass't.	825	-	-	165	990
Participant Training	3025	-	-	241	3266
Commodities	1100	-	-	1200	2300
Travel, Supplies, Other Support Costs & Contractor Overhead	550	-	-	-	550
Local Support Costs	-	-	-	36	36
Agr. Buildings, Exp. Stations, Housing	-	-	-	3150	3150
<b>T O T A L</b>	<b>5500</b>	<b>-</b>	<b>-</b>	<b>4792</b>	<b>10,292</b>

air travel of participants to the United States will be financed under the AID loan as all other FX costs (tuition, maintenance, etc.) related to training. The GOI will provide funds for continuation salaries and in-country travel for participants from its own resources.

It is recommended that AID contribute \$5,500 thousand or 53 percent of total project costs.

3. Summary Opinion: Based on the analyses set forth above, it has been concluded that the financial plan for the project is fully adequate to achieve the project purpose and that on an overall basis the project is financially sound.

### C. Social Analysis.

#### 1. Socio-Cultural Feasibility.

As suggested in earlier statements the proposed project is completely feasible in the socio-cultural setting of Indonesia. At the most pragmatic level the activities that have been undertaken in the

\* For additional detail see Annex L

past five years have been very well received and the present project is a modification and extension of those activities. In Phase I, the Indonesians demonstrated their capacity to plan, to implement, to review, to modify, to evaluate and to achieve a specific set of objectives. The model of assistance that is presented in Figure 1 is Indonesian in initiation, in tradition and in application.

## 2. Spread Effects: The Diffusion of Innovation.

--Extension: There are many different "spread" effects with which this project is concerned. One is the spread from the most developed agriculturally related faculties to the least well developed faculties. Another is the spread from the major institutions located in West and Central Java to the institutions located in the provinces stretching 3,000 miles across this island nation. Another spread relates to the diffusion of training from the senior PhD who teaches the persons who will become the teachers for other persons who will become the teachers ultimately of the small holders in Indonesian agriculture. Yet another is the spread from the research of a single principal investigator or group to its testing nationally and ultimate extension to the farmer. There is also the horizontal spread of institutional linkage among the Departments of Education, Agriculture, Public Works, and Research for example.

While all of these are important concerns, this project is specifically responsible for the spread represented in Figure 1 which relates to, on a pilot basis only, diffusion of community services from selected universities, diffusion of selected applied agricultural research programs, diffusion of academic programs, and diffusion of training in the agricultural sciences.

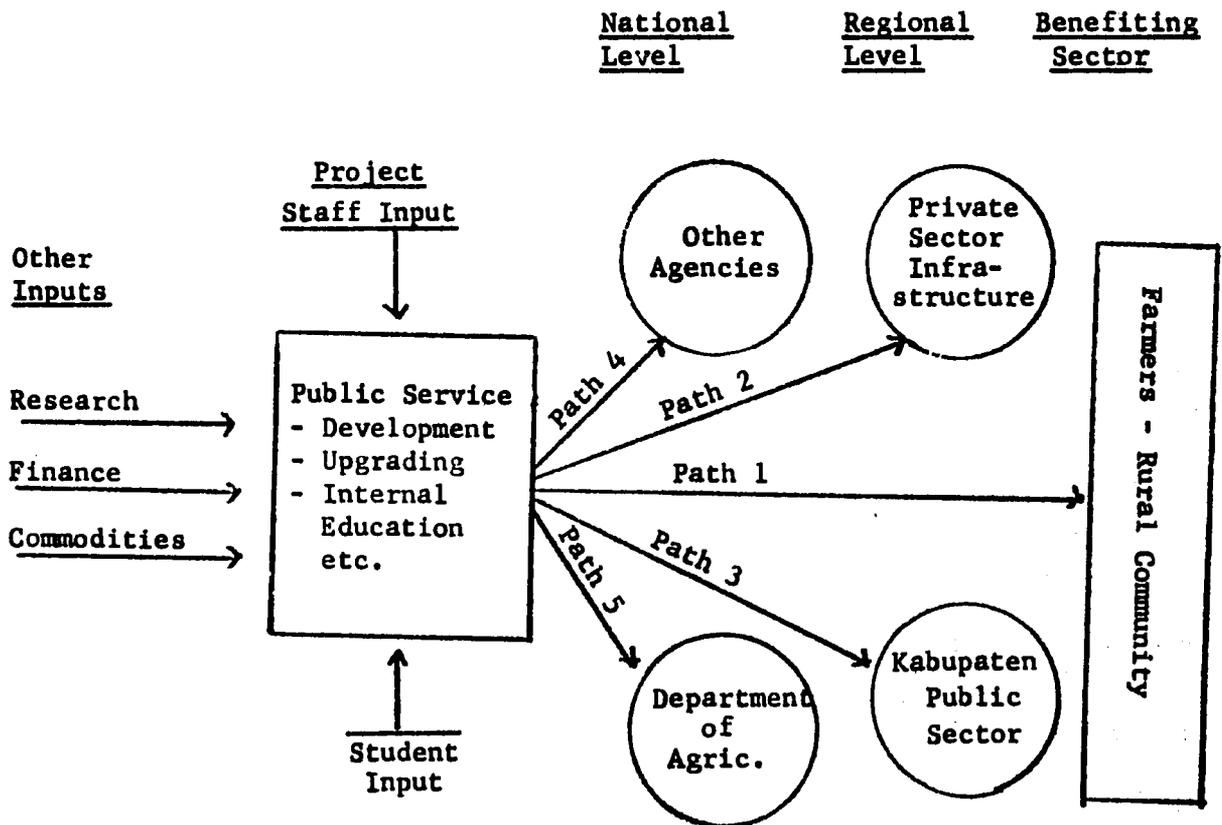
A recognized need in this area is to establish and test operations that will effectively focus university resources on the agricultural problems of the rural community. The visiting professors will cooperate in developing courses for agricultural students in extension, education, communication arts, and other socio-economic fields which will help get improved technology into the hands of the small farmer. Special attention will be given to development of the administrative structure for public service programs of the university, establishment of linkages with the national extension service of the DOA, identification of an interdisciplinary corps of staff with specific responsibilities in public service programs, and the implementation of action programs which support Indonesia's development priorities.

The specific technique for accomplishing this is not yet developed either by the GOI or by a foreign advisor or contractor. However, the advisability of developing such linkages is well understood by the leadership in higher agricultural education and every

effort will be made to agree upon a procedure. The KIP has been asked to develop alternative strategies and procedures.

The universities themselves have already established linkages with other agencies and with rural people. The schematic diagram in Figure 2 illustrates the linkages.

Figure 2. Extension Linkages from Universities to Other Agencies and Rural Community.



Path 1 is directly to farmers and the rural community. Although the Extension system in Indonesia is a part of the Department of Agriculture, the Universities have a responsibility to conduct public service activities and have several ways in which they may work with the rural community, directly or through farmers. Some activities which should be developed through this Path are as follows:

1. The KKN Student Service Program
2. Pola Ilmiah Pokok ("PIP"): Scientific Pattern
3. Informal Education
  - a. University open door policy
  - b. Education via satellite
  - c. Education radio, press and other media use
4. The program to improve family nutrition (Gizi)
5. Farm Field days and Demonstrations

New programs that hold promise for maximizing the use of inputs in new university public service activities are the Student Service Program or Kuliah Kerja Nyata (KKN) and the Scientific Pattern or Pola Ilmiah Pokok (PIP). The "KKN" is a scheme for involving students in full-time service programs in the rural community as an integral part of their academic study. The "PIP" program strives to concentrate efforts of the total university on the development of activities that are the greatest importance to the community in which it exists.

Paths 2 and 3 function at the regional level. These activities are carried out in collaboration with local agencies, including the local government, cooperatives (BUUD + KUD), local Extension Office, private or public agri-business firms. These activities may include:

1. Community development projects
2. Regional development planning (BAPPERDA/BAPPEMDA)
3. Technical or specialist assistance
4. Technical training
5. Services such as soil testing
6. Research information and recommendations

Paths 4 and 5 represent linkages to the national level. The activities are carried out at the national level in collaboration with the Department of Agriculture, the Department of Public Works and Electricity (DOPE) and other national level agencies. These activities may include:

1. Training of personnel for programs of other department (e.g. extension staff, transmigrants, army personnel)
2. Assistance to transmigration projects
3. Assistance to affiliated universities
4. Specialists support to the Extension Service

5. Preparation of Extension bulletins and other materials
6. Development of joint field days at experimental farms
7. Provision of technical services

--Research: The imbalance of population to available agricultural land in Java; the high potential for agricultural expansion in Sumatra, Kalimantan and Sulawesi; and the synchronization of infrastructure and arrival of new settlers under the transmigration program all raise issues requiring a substantial research effort for resolution. Agricultural universities have been responding through various tasks assigned by local and national agencies. However, the magnitude and quality of research conducted varies due to differences in manpower, facilities, and budget. This project would give special attention to developing materials for public service activities, training of scientists to carry out applied agricultural research, improving administration and coordination of research within the University and with other agencies, and acquiring facilities to support high priority national research programs.

--Undergraduate Education: IPB has started the evaluation of its "pilot" four-year, 140 credit curriculum. It is expected that this curriculum will be approved by the DOE. The "pembina" faculties will then work with the faculties of the other universities to introduce the new curricular concepts into the latter institutions. The new programming will consist of updating course material, improving teaching methods to include more practical work, acquiring experimental farms, establishing linkages with institutions that provide on-the-job experience, constructing and developing classroom and laboratories, enlarging library resources and visual aids materials, expanding of student service, and providing adequate housing. Consideration is being given to expanding the development of package courses for upgrading the other universities.

--Graduate Instruction: The graduate centers at UGM and IPB will produce the leadership in the extension service, the research institutes of the various departments of the GOI, the agricultural faculties of the universities, the headmasters of the senior and junior agricultural high school, and the managers of estates, agri-business firms and farms.

This project will emphasize that Indonesian PhD candidates should return to Indonesia to carry out their thesis research in country. This should help focus research on Indonesian agricultural problems and contribute to the development of the graduate education program.

--University Administration and General Services: Substantial progress was made in this area during Phase I. Under the leadership of the KIP and with the assistance of MUCIA, the agriculturally

related faculties are to move further toward the systems concept with emphasis upon building linkages among faculties and strengthening the relationships among teaching, research, and public service. Organizational structure and management practices are to be modified to promote efficiency and conserve time, energy, and money through public service councils to coordinate student and faculty efforts; research councils responsible for organizing research activities; curriculum planning councils for fostering linkages between department and faculties' central libraries; language laboratories; data processing centers; stockroom facilities and control equipment maintenance and repair units.

In this project attention will be given to developing the overall university system with special emphasis on the mission of the agriculturally related faculties. During recent years, and during the formulation of Pelita II in particular, the universities played an increasingly important role in the Regional Planning. University staff often play an important role in the Regional Planning Boards (BAPPERDA). Many universities, if given support and encouragement, can become even more deeply involved in public service and research activities.

### 3. Social Consequences and Benefit Incidence.

Indonesia still needs more trained manpower. The shortage in agriculture is particularly acute in view of the importance, urgency, and magnitude of the task of increasing agricultural production. Numerous programs have been launched to improve the generally low-level of agricultural output; however, satisfactory growth in the agricultural sector will not be attained until the quality and supply of trained manpower in agriculture has increased markedly.

Indonesia's goals for increasing its food supply are ambitious. During the Second Five Year Plan period (1974-1979) there will be continued effort placed upon increasing production through intensification in Java and Bali. Special measures will be undertaken to tap the vast land resources of the other islands. In addition to the provision of agricultural inputs, technical services related to programs in agricultural credit, irrigation, forest and watershed management, tidal areas, and statistical data collection are to be upgraded.

During the First Five Year Plan Indonesian universities were given the task of producing top-level planning personnel, administrators, engineers, technologists, and researchers. Emphasis has been changed in the Second Five Year Plan to bring universities into more direct involvement with regional government and rural communities. As a result, there is an important need to

establish effective programs in applied research and public service.

This project will ultimately benefit the people of the rural areas who are dependent on their farms and farm products. They will benefit from a greatly improved Indonesian capability to provide agricultural services, to conduct directly relevant agricultural research, and disseminate the results there-from.

Besides the farmers of Indonesia, one might expect benefits for employment of persons in the developing agri-business services and industries. Also there would be benefits to consumers through increased food supplies adequately distributed, and improved nutrition. Finally, Indonesia can become self sufficient in food, and importantly will have a capability to produce the manpower, to do the research and to deliver services and information for self-sustaining agricultural growth.

The immediate beneficiaries are the faculty members who are trained, the researchers and their students who conduct projects and studies, and the institutions that have improved curricula, libraries and administration. This investment in human capital can be expected to produce a significant flow of productive services over their lifetime.

The intermediate economic benefit will be improved planning and public programs at both national and regional levels. Frequently university staff members are drawn into regional and national planning boards and agencies where the knowledge and skills acquired from advanced training are directly applied to agricultural development problems and policies. Since most of Indonesia is agricultural, improved regional development will assist the rural people.

An important social outcome should be the demonstration that the products of higher agricultural education, namely trained manpower, applied research, and agricultural extension services, are significant factors that directly increase the production and income of farmers, improve consumption and nutrition levels in society, and expand employment opportunities. It is anticipated that agricultural development will be accelerated as IPB and UGM improve their curricula, as their staff members receive specialized training and as these technologies, attitudes, values and training are propagated throughout the other universities.

Furthermore, as farmers have increasing contact with extension workers who are knowledgeable, eager to serve, and helpful, their attitudes will change. As the output and income of farmers increase, as savings are created, as capital is accumulated, the level and quality of life in the villages will also improve.

#### 4. The Role of Women

The 1945 Constitution, Article 27, guarantees equal rights to all citizens. This guarantee has been the legal basis for continuing efforts to expand and guarantee equal opportunity for women both before the law and in society. Despite the full political and educational rights which women enjoy under the constitution, Indonesia remains, in many ways, a male dominated society. This fact, plus the enormous problems of population pressure, stringent economic conditions and unemployment, poses extraordinary challenges for men and women alike. Indonesian women are meeting these challenges through working for (1) greater educational opportunities for girls and women, (2) recognition of women's contribution to the labor force and (3) family planning programs. Women's organizations are taking an active role in each of the foregoing efforts. Changes in the marriage law is one most significant achievements because of both legal and social implications.

According to present information, girls and women have equal access with boys and men to education; however, tradition, lack of access, need for women in agriculture have prevented equality in numbers. However, at the primary level, the enrollment ratio is now 54% boys and 46% girls; this ratio decreases at the upper levels for both groups with that of men remaining highest in the universities with the ratio about 1 woman to 3 men. This ratio is reported to be among the highest for women in Asian countries. According to the Indonesian Education Attachee in the Indonesian Embassy, the number of women in agriculture education today is reported to be higher than that in the United States. No studies are available to show the actual figures. However, the preliminary development plans for the higher agriculture education project are taking cognizance of the need for greater numbers of women in all areas of agriculture education.

#### D. Economic Analysis.

It is extremely difficult to quantify the direct and indirect economic benefits that will result from the project Agricultural Education for Development. It is, of course, generally recognized that the lack of trained manpower for agricultural research, extension, public service, and project planning and implementation is a major impediment to the development of the rural agricultural sector. Both quantitative and qualitative improvements in the manpower base for agriculture should be translated in a relatively short time span into improvements in agricultural production and, in turn, job opportunities and increasing rural income.

Ultimate economic benefits could be analysed in terms of increased agricultural production on small farms. Savings could be accumulated as farm income exceeds consumption. Farmers could accumulate additional capital instruments further to increase production, with aggregative consequences for the economy as a whole. As the agri-business services and industries develop, employment opportunities grow. Finally, Indonesia can become self-sufficient in food, and importantly will have a capability to produce the manpower to do the research and to deliver the services and information for a self-sustaining agriculture.

The greater availability of research skills in Indonesia will significantly affect the country's ability to utilize technology developed at the international centers or other countries. As Indonesia's research capacity grows, its ability to select and adapt technology from outside increases, and the process of technology will accelerate. A recent report on a three-day seminar sponsored by the Agricultural Development Council at Airlie House concluded that returns to investment in agricultural research in LDCs have been very high -- two to three times higher than other agricultural investments.

**PART IV. IMPLEMENTATION ARRANGEMENTS**

**A. Analysis of the Recipient's and AID's Administrative Arrangements.**

**1. Recipient.**

On the administrative side there has been a noteworthy reorganization within the DOE. Higher education affairs have been elevated within the DOE to a Directorate-General of Higher Education with separate directors for academic affairs, research and public service, student affairs, and private universities. The Director of Research and Public Service continues to serve as the Secretary of the Consortium of Agricultural Sciences thus assuring that the interests of higher agricultural education development are carried to high levels in the DOE.

At the present time the Consortium of Agricultural Sciences is being utilized as the central coordinating body for Higher Agricultural Education, but it does not have the personnel, structure or authority to serve as a central planning group for all of higher agricultural education. The need for such a unit is clear and agreed upon but it has not yet been decided whether the function will be assigned to the Secretariate of the Consortium, incorporated into the DOE Board of Education Research, Planning and Development (DPPPK), or separately established within the Directorate General of Higher Education.

Similar developments have taken place within the Department of Agriculture wherein two new offices have been established at the level of Directorate General. They are the Office of Research and Development and the Office of Education, Extension and Training. They demonstrate the significance that the DOA attaches to these two fields, and it is no accident that the DOE similarly has a Director of Research and Public Service who is also Secretary of the Consortium of Agricultural Sciences. Thus the administrative setting tends to encourage integration and coordination of program within the GOI.

On the administrative side within the universities there have been encouraging developments. For some time IPB has named Directors for the functional areas of research and public service, undergraduate instruction, graduate studies, libraries, and administration. During the past year the Agro-Kompleks of Gadjah Mada has followed a similar path by appointing Coordinators for research and public service, undergraduate instruction, graduate instruction, libraries and commodities.

Actual working operations will be carried out in the eight designated Universities, with supervision provided through the offices of the Directorate-General of Higher Education.

Since the administrative arrangements for the proposed project closely parallel those of an existing project, and those arrangements have been found to be satisfactory including the relationships with MUCIA as contractor, and the existing project has demonstrated that inputs can be utilized, outputs produced, and targets met within the framework of the project design, it may be concluded that administrative and managerial arrangements will be adequate.

## 2. A.I.D.

AID monitoring of the Agricultural Education for Development Project will require the services of an education officer. He will be responsible for meeting periodically with representatives of the Consortium for Agricultural Sciences, the Department of Agriculture, and Department of Education, and other GOI representatives as appropriate and necessary. He will make frequent trips to the participating universities, review general progress in project implementation including procurement, participant training, and technical advisory services, and keep Mission Management and AID/Washington apprised of progress through the Planned Performance Tracking Network System.

### B. Implementation Plan.

1. An Overview. The project plan is a straightforward utilization of participant training, commodity procurement, and technical assistance derived from the dollar proceeds of a loan combined with on-going Indonesian resources specifically allocated to accomplish the project purpose. The implementation plan will be similar to the operations in the past five years which have proven to be effective.

An important element in the implementation plan is the provision of continuity between activities which are supported by the current grant and the continuing activities to be supported by the proposed loan especially in participant training. To effect this, the present IDA contract with MUCIA will have the terminal date extended from March 31, 1976 to June 30, 1976. It is expected that this will provide some overlap between the availability of the letter of credit under the loan and the termination of the present grant agreement.

The key feature of implementation is the Joint Annual Review. Planned for February of each year, it will bring together reports from the three parties bearing primary responsibility for the outcome of the project. These include the Government of Indonesia, the USAID, and the proposed contractor, MUCIA. At the Annual Review, the rate of accomplishment of previous targets is reported, progress is evaluated, constraints are identified, and targets for the coming year are established. Thus the Annual Review becomes the annual update of the implementation plan for the project.

The Annual Work Plan is a document that is drawn up each year and lays out the plan of work for the coming year. It consists generally of 8-10 pages. A brief introduction focuses attention on the logical framework relating project inputs to outputs to purposes to the national goal. Then follows a statement of the terms of reference for the coming year. This is based on the deliberations of the Joint Annual Review. The next section of the Work Plan focuses on an analysis of each of the six program areas and specifies the expectations with respect to each and the targets to be met. Finally there is a section on the administration of resources that discusses the allocation among the three principal categories of inputs and the levels of inputs expected for participant training, commodities, and technical services.

The significance of the annual work plan is that it is a program statement in operational terms that can then be translated into budget terms and thus becomes the "contract" among the participating parties for the coming year. It becomes the yardstick against which operations are monitored and performance evaluated.

(a) Participant Training. The selection of participants will be initiated by the institutions themselves from the pool of persons who are both language-qualified and qualified in their respective subject matter fields that support the project purpose. They will also have the approval of the Consortium of Agricultural Sciences. The participant's academic program and the objectives of it will be specified in an agreement signed among all parties. This will be the basis for the participant's placement. For participants trained under the loan, the contractor's representative will be consulted. The contractor will use his best efforts to place participants in the institution of their first choice. Other things equal, MUCIA will prefer placement in a MUCIA University but recognizes certain special fields might be better accommodated at a non-MUCIA school and will act always to promote project purposes.

Participant training will take place both outside Indonesia as well as inside the country, and circumstances will determine whether training costs will be met by GOI funds, other donors, or proceeds of the loan.

The number of new participants in any given year will be subject to review and approval at the occasion of the Joint Annual Review.

(b) Commodity Procurement. Goods to be financed under the loan are primarily educational and scientific equipment and supplies, including books. In connection with the emphasis on public service and the application of applied research in the field, there will be a

requirement for utility-type vehicles that cannot be specified at this time. There will also be the necessity of replacement of three 4-door sedan-type vehicles currently in use for carrying passengers. Vehicles to be procured under this loan will come from the United States, in accordance with Section 636 i of the Foreign Assistance Act, whenever possible. However, when vehicles of appropriate specifications cannot be procured in the United States or if their import into Indonesia is prohibited, waivers will be sought and acted upon promptly.

Commodity acquisition will be implemented in accordance with AID's commodity procurement regulations. The system which has proven to be effective is described in the manual, MUCIA-Indonesia "Life Cycle Commodity Management System, June 1974." It involves the steps of ordering, procurement, shipping and receipt, university utilization and custody, and monitoring and follow up.

(c) Technical Services. In view of the nature of the project, technical services will be supplied from U.S. university sources with MUCIA as the expected supplier. It is planned that one senior academic person will be stationed on long-term assignment in Indonesia, probably Jakarta, to serve as resident project director or administrator and MUCIA representative. This person will function in an academic capacity in one or another doctoral program in Indonesia and also supervise general operations and specific project supporting offices at IPB, UGM and in Jakarta. On the one hand he will relate to officials of Indonesian Higher Agricultural Education and on the other hand to officials of USAID. Also he will represent the project to other interested donor agencies such as foundations, international agencies and governments.

It is planned to have a project office in the United States at a MUCIA university. It would be headed by a part-time academic staff professional who would represent the project and its requirements for participant training services, technical services and commodities. There would also be supporting staff personnel and a budget for supplies, travel, communications, and the like.

Technical services will also be supplied in the form of qualified academic professionals on short-term assignment. Their number and fields of assignment would be determined at each Joint Annual Review and recorded in the work plan for each year.

One very specific use of technical services will be in the development of the nation-wide master plan for higher agricultural education, especially in the field of facilities and campus planning. Other specific uses are in promoting doctoral candidates in Indonesia, designing extension and public service programs, and participating in applied research projects.

2. Loan Implementation Schedule. The following presents a timetable for implementation of the project loan:

Activity:	
Loan Authorization	December 31, 1975
Draft Loan Agreement Preparation	January 23, 1976
Loan Agreement Review by GOI	February 13, 1976
Loan Agreement Negotiations	March 12, 1976
Loan Signed	March 19, 1976
Conditions Precedent to Disbursement Met	May 1, 1976
Contract with MUCIA Signed	May 1, 1976
Letter of Commitment Issued	June 1, 1976
Letter of Credit Opened	July 1, 1976
Terminal Date for Requesting Disbursement	January 1, 1981
Final Disbursement Date	July 1, 1981

3. Monitoring. For the GOI, the agency with direct responsibility for monitoring, is the Directorate General of Higher Education. In addition to routine reports from the universities, the principal instrument for monitoring is the Joint Annual Review. At that time reports will be received on the operations underway and the extent to which targets are being reached, with respect to utilization of participant training, procurement of commodities, and of technical services. The Annual Review will establish work plans for each coming year and recommend budget levels to the Directorate General. As indicated earlier, monitoring described above is a joint undertaking and project representatives from the university contractor will participate fully.

The university contractor representative will also report to USAID the outcome of deliberations of the Joint Annual Review as well as supply copies of all documents considered there.

#### C. Evaluation Arrangements for the Project.

A key feature of the terminating grant Higher Agricultural Education project is the Joint Annual Review. This review is participated in by representatives of the Ministry of Education, USAID, AID/W, the Consortium of Agricultural Sciences, IPB, UGM, selected other universities and MUCIA. As indicated previously every aspect of the project is monitored.

The Joint Annual Review will be continued under the new Agricultural Education for Development Project. It will be utilized as a reporting and implementing device, but more importantly as an instrument for project evaluation. In conjunction with the Annual Review, USAID will conduct a PAR evaluation of the project. A final evaluation will be conducted at the end of calendar year 1980 to

relate progress with the Project's stated purpose and end-of-project conditions, both of which are presented in the logical framework matrix.

D. Conditions, Covenants, and Negotiating Status.

There are no Government of Indonesia actions which must be taken prior to execution of the Agriculture Education for Development loan agreement. The following represents conditions and covenants as they will appear in the loan agreement.

Conditions Precedent to Initial Disbursement

1. An opinion of the Minister of Justice of the Borrower that the loan agreement has been duly authorized and/or ratified by, and executed on behalf of, the Borrower, and that it constitutes a valid and legally binding obligation of the Borrower in accordance with all of its terms.

2. A statement of the names of the persons who will act as representatives of the Borrower together with evidence of their authority and specimen signatures of each.

3. An assessment of budgetary requirements for capital and recurring expenditures of the eight participating universities to support improved programs of instruction, research and community services as planned under project, together with evidence that sufficient budgetary resources will be made available to the participating universities to meet such requirements. This assessment should provide detailed analysis of needs and resource availabilities for the first year of the project and more general analysis of life-of-project requirements.

4. (a) Written assurances that the estimated annual expenditures for each year during which the Project is being conducted (other than the U.S. dollar costs to be financed under the loan) will be made available to permit the work of the Project to proceed on a timely basis, and (b) a budgetary allocation for the Project for the Indonesian fiscal year 1976-77.

Conditions Precedent to Disbursement for Equipment or Materials

1. Prior to each disbursement for equipment or materials, Borrower shall submit the desired list of equipment and materials to be procured and a plan for equipment maintenance.

Borrower Covenants

1. Borrower shall provide all other resources in addition to this loan necessary for the timely and effective implementation of the project. In particular, Borrower shall provide sufficient funds for capital and recurrent expenditures to support improved programs of instruction, research, and community service in the participating universities in accordance with project plans.

2. The Borrower shall ensure that each student trained in the United States under the project shall be guaranteed a position commensurate with his training in a University faculty upon his return.

PART V. ANNEXES

- A. Logical Framework Matrix.
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- K. Report - Evaluation Team AID/MUCIA Indonesian Higher Agricultural Education Project by Roland R. Renne and Kenneth L. Turk.
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**PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK**

AID 1020-28 (1-73)

**Project Title & Number: Agricultural Education for Development  
Loan 497-0260**

**Life of Project:  
From FY 1976 to FY 1980  
Total US Funding \$5,500,000  
Date Prepared: Nov. 7, 1975**

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATOR	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p><b>Program or Sector Goal: The broader objective to which this project contributes:</b></p> <p>An indigenous Indonesian integrated agricultural capability for undertaking and maintaining national agricultural development (production, employment and income distribution). Expressed in DAP-pg.51</p>	<p>-Increased production of essential agricultural crops on an average of 4.6% annually by 1979</p> <p>-Real income increases of 5% annually within the Agricultural Sector by 1979.</p> <p>-Increases in rural sector job opportunities by 13% by 1979.</p> <p>(As defined in REPELITA-II)</p>	<p>Annual Reports of REPELITA II Targets</p> <p>Departments of Education and Agriculture Reports</p> <p>USAID Staff Evaluation and Analysis</p>	<p>Assumptions for achieving goal targets:</p> <p>Indonesian Agricultural Development will maintain its high GOI Priority, and all fund resources are made available and utilized as anticipated.</p> <p>Inflation levels remain somewhat stabilized allowing for real income increases.</p> <p>Activities and policies within agricultural sectors substantially increase the need for more jobs.</p> <p>Participants will remain in agricultural sector activities.</p>

Project Purpose:

To establish a nuclear group of agricultural universities with the capacity to provide highly-qualified agricultural manpower, research, and public service activities appropriate to Indonesia's needs.

End-of-Project Status:

1. At IPB, M.Sc. and Ph.D. programs fully established and Ph.D. program initiated. These two Pembina (leader) universities awarding at least 100 graduate degrees on annual basis.
2. Basic 4-year B.Sc. curriculum fully established at a minimum of 4 non-Pembina universities, with graduation of 600 students on annual basis.
3. Targeted increase in percentage of faculty with Ph.D. qualifications:
  - a. IPB: From 15% in 1976 to 25% in 1981 (approximately 100 Ph.D.'s in total faculty of 400).
  - b. UGM: From 1% in 1976 to 20% in 1981 (approximately 50 Ph.D.'s in faculty of 250).
  - c. Non-Pembina universities: 0% to 3-5% in 1981.
4. Nuclear group of Pembina and non-Pembina universities serving as base for upgrading of entire higher agricultural education system according to well-coordinated national plan.
5. University faculties effectively supporting and supplementing government programs of agricultural extension, research, and service.

Universities Annual Reports  
Agriculture Consortium Records and Reports  
Published Reports on Public Service  
Research Reports, Bulletins and Publications  
Extension Station Records  
Academic Lists and Reports  
Organizational and Personnel Lists and Structure Plans from Universities  
University Master Plans  
Departments of Education and Agriculture Reports  
USAID Evaluation and Analysis

Assumptions for achieving purpose:

The higher agriculture education institutions are able to initiate and maintain the systematic plans.

Government financial support to agricultural universities are provided.

Agriculture retains the high level of interest for both undergraduate and graduate students, and the national sector continues to require graduating students.

Outputs:			Assumptions for achieving outputs:
<p>1. Basic 4-year B.Sc. curriculum installed at six non-Pembina universities.</p>	<p>1a. Ministry of Education approval of basic curriculum 1b. Development of package courses for use at non-Pembina universities.</p>	<p>Universities Report and Records of Public Service</p>	<p>Institutional structures are capable of translating basic inputs of personnel, training, and commodities into effective public service programs, including the KKN (National Student Service) as public service graduation requirements.</p>
<p>2. Initiation of post-graduate programs at Pembina universities.</p>	<p>1c. Necessary administrative changes and facility development to accommodate new curriculum.</p>	<p>Research Reports and Publications</p>	
<p>3. Returned participants join faculties at universities in nuclear group.</p>	<p>1d. Periodic evaluation and modification.</p>	<p>Academic Reports, Records, and Lists</p>	
<p>4. University programs of rural/community service established and operating.</p>	<p>2a. IPB begins M.Sc. program in 1976 and Ph.D. program in 1978. 2b. UGM begins M.Sc. program in 1976 and Ph.D. program in 1980.</p>	<p>Published Dissertation and Theses</p>	
<p>5. University programs of applied agricultural research established and operating.</p>	<p>3a. 100 participants return to IPB and UGM, with approx. 80 having achieved Ph.D. qualification.</p>	<p>Graduation Lists</p>	<p>Resources and guidance for priority applied research is provided, and institutions effectively develop programs to combine all resources into meaningful research.</p>
<p>6. Physical facility development appropriate for programs of teaching, research, and service.</p>	<p>3b. 100 participants return to non-Pembina institution, with approx. 20 having achieved Ph.D. qualification.</p>	<p>Personnel, Budgetary Reports and Records from each University</p>	
<p>7. Implementation of national development plan for higher agricultural education.</p>	<p>4a. Develop effective administrative unit. 4b. Create operational linkages with government ministries and agencies responsible for field programs.</p>	<p>Departments of Agriculture and Education Master Plans, Records and Reports</p>	<p>Degree programs (graduate and undergrad.) are given recognition by Dept. of Educ. and National needs, both Agriculture Sector and Education Sector, provides students, academic studies and job opportunities.</p>
<p>8. Effective university administration systems developed.</p>	<p>4c. Target % of faculty time allocated to public service.</p>		<p>Key admin. positions are available, and admin. careers sought and developed.</p>
	<p>5a. Develop effective administrative unit. 5b. Create operational linkages with government's agricultural research program.</p>		
	<p>5c. Integrate instruction and research in post-graduate teaching programs. 5d. Target % of faculty/graduate student time allocated to research.</p>		
	<p>5e. Revenues obtained from contract research.</p>		
	<p>6. Facilities expanded/improved according 5-year development plans of nuclear universities.</p>		
	<p>7a. Completion plan for upgrading all 22 universities in system. 7b. Creation of national planning unit with necessary staff, competence, and authority.</p>		
	<p>8a. Model administrative system established at IPB and UGM. 8b. Administrative manual developed. 8c. Similar systems introduced at non-Pembina. 8d. Target numbers of administrative personnel trained in new systems.</p>		

Inputs:

USG: \$5.5 million for short term technical assistance, participant training, and commodity procurement.

GOI: Rupiah 1,981 mil. (\$4,792 mil) for participant training, commodities, local support costs, and facilities.

Implementation Target  
(Type and Quantity)

Quantity  
165 m/m  
3,840 m/m  
misc.

	Value	Quantity
USG: Tech. Assistance	= \$ 825,000	
Participant Training	= \$3,025,000	165 m/m
Commodities	= \$1,100,000	3,840 m/m
Travel, Support and Overhead	= \$ 550,000	misc.
Total:	= \$5,500,000	
GOI: Tech. Assistance	= \$ 165,000	
Participant Training	= \$ 241,000	
Commodities	= \$1,200,000	
Local Support	= \$ 36,000	
Facilities	= \$3,150,000	
Total	= \$4,792,000	

USAID Reports, Records, and Audits

Contractor Reports

Department of Finance, Agriculture and Education Reports and Records

BAPPENAS and Cabinet Reports

GOI policy and priorities support development of broad-scope HAE system.

GOI through Departments and Universities provide funds and authority as needed for participants, commodities, and technical assistance.

USG provides funds and guidance as planned. A contractor is found, and activities conducted as planned.

ANNEX B

DEVELOPMENT PLAN

1976-1980

INSTITUT PERTANIAN BOGOR

Sub-Project Proposals

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IPB Sub-Project for Public Service

IPB plans to expand its Public Service programs to provide an adequate base for a more intensive and permanent program. This will include, development of an effective administration of outreach activities, development of facilities and preparation of specialists to work in the area.

Sub-Project OUTPUTS. The Outputs projected to contribute toward achievement of the Project Purpose are as follows:

Output 1.a. Public Service activities presently fall under the direction of the Director of Research and Public Service who is assisted by an interdisciplinary Public Service Board under the Rector. Neither the administrative nor the Executive lines of communication of this sector are well defined. Steps will be taken to study present system, make recommendations for required modifications, appoint administrative personnel, establish a philosophy of action and establish both internal and external linkages to insure effective and efficient operation of the sector.

Output 1.b. Trained Extension Specialists in priority disciplines. Specialist staff are needed to actively promote program development in this sector. They will be well trained in their respective disciplines and will provide both Technical and Methodological assistance to the extension service. These staff will also work closely with their departments to obtain and disseminate valuable research materials to Rural Extensionists. These specialists will

also serve as liason personnel to maintain linkage between department with outside agencies and with rural problems.

Output 1.c. Institutionalized high priority Public Service Projects

Projects which have a high priority for agriculture will be developed and institutionalized. These projects will include activities which have immediate practical importance to agricultural development, those which bring the staff and students closer to farm problems (KKN) for example and those which relate to national and regional planning and development.

Output 1.d. Intensive program for technical training and informal

education. Expansion of educational programs to offer a greater opportunity to non-formal education of the rural population. This may include any effective means at hand including publications and news articles written for farmers, radio, satellite television, demonstrations, training programs for transmigrants, etc.

Sub-Project ACTIVITIES.

A series of activities have been projected to combine sub-project Inputs to produce the Outputs. A summary and time schedule of these activities is given in Chart A.

Chart A<sub>1</sub>. Time Schedule for Development of Public Service Project  
at IPB

Activity :	Target Date for Activity				
	1976	1977	1978	1979	1980
<u>Output 1a.</u> Develop Adm. Structure for Public Service Sector					
1. Appoint Study Group	—				
2. Recommend Changes	—				
3. Adopt New Structure	—				
4. Appoint Unit Director	—				
5. Establish Linkages		—			
6. Set up Unit Office		—			
<u>Output 1b.</u> Extension Specialists.					
1. Establish Required Linkages with Ministries	—				
2. Define Responsibilities	—				
3. Select and Train Staff		—			
4. Initiate Program		—			

Chart A<sub>1</sub> (continued)

A c t i v i t y	Target Date for Activity				
	1976	1977	1978	1979	1980
<b>Output 1c. Institutionalize High Priority Projects</b>					
1. Adopt system for effectively implementing Projects.					
a. Community Development					
b. Student Service					
c. Qualitative Transmigration					
2. Establish new programs utilizing corps of specialists in priority Areas					
a. Land reclamation					
b. Environmental Studies					
c. Rice & Secondary Crops					
d. Animal nutrition & breeding					
e. Fishery production					
f. Forest management					
<b>Output 1d. Informal Education activities.</b>					
1. Adopt system for effectively implementing activities					
a. Training of Army Personnel					
b. Training of Transmigrants					
c. Gizi					
d. Open door University					
2. New Programs					
a. Education satellite					
b. Communication center					

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### IPB Sub-Project for Research

The IPB research activities will cover five broad areas, namely: Natural & Human Resource Development, Crop Production, Animal Production, Fisheries and Forestry. In accordance with the national priorities for agricultural sector, the major programs development will include activities in support or linked to land reclamation, intensification of land use, environmental studies, conservation of natural resources, agronomical aspect of crop production including disease and pest control, and various aspects of product utilization and product processing. In the animal production and fisheries, stress will be given to breeding, rearing, nutrition and animal health service. The rural and community development program will be strengthened and improved as continuation of the existing programs.

Sub-Project OUTPUTS. In the Sector of Research, the following specific outputs are expected to contribute toward the achievement of the project purpose.

Output 2a. To develop material as input for public service activities.

Output 2b. To develop material for training and education.

Output 2c. To develop research projects for advanced degree program.

Sub-Project ACTIVITIES.

The research project will be developed and operated as an integral part of the total IPB effort toward achievement of the project Purpose, which can be translated into the development of an improved university system able to assist the government and the society in participating in high priority programs. In this Phase-II, the managerial aspect of the research activities will be given special attention toward the creation of the innovative management.

The research project will operate through these following steps:

1. The development and improvement of an effective administrative unit for directing and administering research activities.
2. The development of research facilities to support high priority national research programs with special attention to support public service activities, and to graduate teaching and thesis support.
3. The expansion of research programs to provide an adequate base for full-fledged graduate program (MS/Doctorate), and the institutionalization of high priority research program in support of graduate program.

The summary of activities required to produce the outputs mentioned above are given in the Chart B.

Chart B<sub>1</sub>. . Time Schedule for Development of Research Project at IPB

A c t i v i t y	Target Date for Activity				
	1976	1977	1978	1979	1980
<b>I Organization</b>					
A. Development of Adm. Unit					
B. Establishing Research Priorities					
<b>II Program Development</b>					
A. Natural & Human Resource Development					
1. Land Reclamation					
2. Intensification of land use					
3. Environmental Studies					
4. Rural development					
B. Crop Production					
C. Animal Production					
D. Forestry					
E. Fisheries					
<b>III Development of Facilities</b>					
A. Lab & Field Equipment					
B. Expt. Station Dev.					

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### IPB Sub-Project for Undergraduate Instruction

In accord with the National Project Purpose IPB will develop the capability to efficiently train a large number of students to their first degree. The graduates of this system will have the know-how and skill for direct absorption into the employment market and will participate in the various areas of agricultural production and agri-business. The graduates of this system will be capable of conducting extension work, open new lands, serve as operators or owners of production farms, teach at middle level agricultural technicians schools, and supervise the processing of agricultural products, their marketing and distribution. A small selected number will be trained in more basic and scientific courses to prepare them for further graduate training at the Magister level as future research workers.

Sub-Project OUTPUTS. Outputs for this sector are outlined in the following paragraphs.

Output 3a. Improved academic administration system. The present system of IPB's academic administration, distinct from University business administration, is centralized only for students attending the common first year (three preparatory semesters). After this stage, all student files and records are handled at the faculty level, often using different methods of administration.

Although the new grading system went into effect since 1972, student grading at the department or faculty level often follows the older system. Students desiring to transfer to another school,

or newly graduated students requiring transcripts often have to wait for the retrieval of their records which is a slow process.

Presently, the handling of student academic administration is often done by the teaching staff, frequently on a rotation basis. This has been a drawback to their academic career.

It is thus hoped that by establishing an improved academic administration the IPB can achieve an efficient system of filing and retrieval of records, employ a uniform system of grading, and use personnel who are trained specifically for this. The system should be such that when the time comes for computerization of records, the system can be adopted without undergoing significant change.

Output 3b. Four year curriculum established as basic first degree program. The presently tried out 4 year curriculum at the IPB will be nearing completion at the end of Phase I. However much is to be improved before the new curriculum can be satisfactorily adopted as the system for HAE in Indonesia. Officially it will require the approval of the GOI, Ministry of HE before further dissemination to other Institutions of HAE throughout the country.

It is thus hoped that official approval of the new curriculum be obtained from the GOI including the recognition of the degree as Sarjana degree, and then plans can be worked out to make the system applicable to the various Universities in the Provinces at their various stages of development.

Output 3c. Four year first degree program established in National Universities in the Provinces with assistance of IPB. The establishment of the new 4 year curriculum will be tried out at six to eight selected National Universities, who can begin operation when official appointment as pilot projects is received from the GOI. This appointment will be followed with the annual allocation of the necessary Rupiah budget depending on the extend of project implementation planned at each University.

Following IPB's experience with the similar pilot programs, the stages of development will necessarily include a year of preparation prior to its implementation. Preparation will include reviews of academic rules, setting new curriculum, up-dating course material, renovation of class-room and visual aids, improvement of teaching methods which will provide the students with more practical work, purchase of experimental farms or establish linkages with institutions who can provide such facilities. The IPB and MUCIA-AID can offer assistance in the preparation of package courses or short term visiting Professors at each of the centers adopting the pilot program. It is expected that each of these Universities in the Provinces will concentrate on Major areas in which they are strong, or where the eco-system can assist them to become National centers in this particular aspect of Agrigultural Development. It is hoped that by the end of Phase II, each pilot program will be completed.

Output 3d. Upgrade curriculum and facilities for first degree program at IPB. Institutions of HAE have to keep abreast of technological development in agriculture production, agriculture marketing and distribution, and the processing of agricultural products. The rapid introduction of new technology into Indonesia also requires that Institutions of HAE constantly review and improve their curriculum, and review the emphasis of major areas taught to support National Development.

Under the new curriculum, students have relatively less time to depend on the various industries and experimental stations to gain practical know-how. On the job training by future employers cannot always be relied upon to fill in their short-comings. It is thus necessary that under the new curriculum, certain facilities for training be developed on the campus. These include experimental farm workshops, pilot processing laboratories, animal production units and reed-mills, fishery-culture grounds etc.

The rapid growth of industry supporting agriculture and newly introduced technology of agriculture production also requires regular evaluation of course contents and curricula. It is expected that the first review of this nature be conducted at the IPB after the completion of the first batch of the Pilot project. The output of this review can be incorporated into the implementation of the coming 4 year curriculum.

Output 3e. Effective system of student services established. Four year training at the university under the new curriculum has been considered as rather short for students to gain sufficient scientific background, practical skill and managerial know-how, and at the same time also obtain the necessary maturity as prospective leaders in the community. It is also necessary that each student realizes and has the capability to develop himself through continuing education after he graduates. Much of this can be gained through an effective student service system, which often includes students activities outside the formal class hours.

The activities that will be included into student service system within the IPB are: increasing the efficiency of the educational process through an effective student and guidance counseling system. A student union building will be set up where activities such as professional clubs, sport associations, students press, and other intra or extra-mural activities can be held. The KKN or student field service, where every student has to serve the community in the rural area for a certain length of time under supervision, can be directed through both, the student center and the University Public Service Bureau.

Sub-Project ACTIVITIES .

A summary of activities

required to produce the outputs listed above are given in

Chart C<sub>1</sub>, C<sub>2</sub>, C<sub>3</sub> and C<sub>4</sub>.

Chart C<sub>1</sub>. Time Schedule for Development of Undergraduate Instruction Project at IPB

A c t i v i t y	Target Date for Activity				
	1976	1977	1978	1979	1980
<b>Output 3a.</b> Established improved Academic Administration system					
1. Establish Uniform grading system					
2. Complete centralization of Student record filing system					
3. Train career academic administrators					
4. Appointment of trained Technical Staff					
<b>Output 3b.</b> Four year curriculum established as basic first degree program					
1. Completion of Pilot Project					
2. Approval of Pilot Project					
3. Four year curriculum established					
<b>Output 3c.</b> Assist National Univ. in Establishing 4-year first degree program					
1. Appoint six selected National Universities in the Provinces					
2. Organization - Plan curriculum and draw up regulations					

Chart C<sub>1</sub> (continued)

A c t i v i t y	Target Date for Activity				
	1976	1977	1978	1979	1980
<b>3. Development</b>					
- Develop first year courses, texts, teaching materials etc.	—				
- Initiate 1st year class		—			
- Develop second year courses, texts, teaching materials etc.		—			
- Initiate 2nd year class			—		
- Develop third year courses, texts, teaching materials etc.			—		
- Initiate 3rd year class				—	
- Develop fourth year courses, texts, teaching materials, etc.				—	
- Initiate 4th year class					—
<b>4. Evaluation:</b>					
- Evaluate 1st year operation			—		
- Evaluate 2nd year operation				—	
- Evaluate 3rd year operation					—
- Evaluate Pilot Projects (preparation)					—
<b>5. Commodity development</b>					
- Order 1st year eqpt.	—				
- Renovate Lab.	—				
- Instal eqpt.		—			
- Order 2nd year eqpt.		—			
- Renovate Lab.		—			
- Instal eqpt.			—		
- Order 3rd year eqpt.			—		
- Renovate Lab.				—	

Chart C<sub>1</sub> (continued)

A c t i v i t y	Target Date for Activity				
	1976	1977	1978	1979	1980
- Instal eqpt.					
- Order 4th year eqpt.					
- Renovate Lab.					
- Instal eqpt.					
<u>Output 3d.</u> Upgrading of curriculum and facilities of the 4-year program at the IPB					
1. Review of curriculum and academic rules					
2. Suggest changes in curriculum structure					
3. Implementation of re-structured curriculum					
4. Develop Plan for establishment of training centers:					
a) Product Processing Lab.					
b) Seed center					
c) Experimental Station Workshop, incl. Forestry					
d) Animal production units and feed miles					
e) Others					

Chart C<sub>1</sub> (continued)

Activity	Target Date for Activity				
	1976	1977	1978	1979	1980
<b>5. Developemnt of Training Centers</b>					
<b>a. Product Processing lab.</b>					
- Building plans made					
- Order equipment					
- Build lab.					
- Instal equipment					
- Commence opertaion					
<b>b. Seed Center</b>					
- Building plans made					
- Order equipment					
- Build center					
- Instal equipment					
- Commence opertaion					
<b>c. Experimental Station Workshop</b>					
- Building plans made					
- Order equipment					
- Build center					
- Instal equipment					
- Commence operation					
<b>d. Animal Production units and feed mills</b>					
- Building plans made					
- Order equipment					
- Building center					
- Instal equipment					
- Commence opertaion					

Chart C<sub>1</sub> (continued)

A c t i v i t y	Target Date for Activity				
	1976	1977	1978	1979	1980
<u>Output 5c. Establishment of Effective Student Service System</u>					
1. a) Effective Student guidance & Counseling system established					
b) G & C center officially opened					
2. a) Student field Service period (KKN)					
b) Appoint supervisors					
3. a) Student Professional clubs, Student Press, Sport associations formally established					
b) Appoint career officers					
4. a) Sports-Hall officially open					
b) Appoint Technical Staff					
5. a) Student Union Building development					
b) Appoint Technical Staff					

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## IPB Sub-Project for Graduate Instruction

Sub-Project OUTPUTS. The outputs which IPB expects to contribute toward achievement of the Project Purpose are discussed in the following paragraphs.

Output 4.a. Graduate School established. A Graduate School will be established at the IPB, not later than 1976 under the direction of the Director of Graduate School and two deputies. Appointment of the deputies will be done by the Rektor after consultation with IPB's senate.

A maximum of eight representatives are chosen by fields of concentrations awarding the M.S. and Diploma degrees through the Graduate School.

Output 4.b. International level Magister program established.

The Magister Program at IPB will be formally established and implemented in 1976, concurrent with the first output from the 4-year undergraduate program. The program will be based on taking coursework, laboratory exercises and finalized with an examination and the writing of a thesis based on original research pursued.

The time required to obtain an M.S. degree is estimated to be about 2 years, of which 12 to 18 months are to be used for attending required courses while the last 6 months would be devoted to research work and thesis writing.

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The full course work required is equivalent to 9-14 credits per semester. A Semester consists of 16 weeks of class, a one hour per week lecture accounting for one credit. Two to four hours per week of lab work will be counted as one credit. The degree program requires a total of 33 to 39 credits, 6 of which are credited towards thesis writing. Two-thirds of the credit total has to be taken in the major field area while the remainder will be chosen from electives outside the major field. An advisory committee, consisting of 3 staff members will act in the programming stage of the research, advising during the implementation of the research work and in the writing of the thesis.

Admission to the Magister program requires the student to have an "Insinyur" or Ir degree from IPB with a G.P.A. of not less than 2.5 on the 0-4 scale grading system, a Sarjana degree from a 5-year program at a State University or a recognized private University with a G.P.A. of not less than 6.25 on a 0-10 scale grading system.

To those who have not attained the required G.P.A. but are otherwise considered qualified to enter the Magister program in view of their achievements, IPB can permit admittance on a one semester probationary period. At the end of this period, the decision will be made by the Graduate School on whether or not to convert the status of the Student concerned to full graduate standing.

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Output 4.c. In-course Doctor program established. The current doctorate program is a transitional program which is intended to bridge the old doctorate degree program based on the Dutch doctorate program and the new "in-country" Ph.D. program which is planned to go into effect in 1978.

In this transitional degree program, qualifying candidates are required to take several courses. After having successfully passed these courses, thesis research can begin under supervision of an advisory committee consisting of staff members.

The estimated time required to finish this program is about 3 years, after which the candidate will be ready to take his final oral examination. This examination is public and attended by the Rector, Advisory Committee and the University Senate. The Judicium ins based on the decision of the Committee members.

The decision as to which field concentration should be catered for by the Graduate School depends mainly on two factors:

1. Target set forth by Pelita II
2. Readiness of various departments at the IPB to establish the program.

Output 4.d. Graduate research facilities improved. Existing labs and other facilities will continue to be upgraded to adequately serve the developing graduate program. Both basic labs and field facilities will be improved to give students

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ample opportunity to meaningful research which will be useful to the development of Indonesian agriculture. This sector will be closely coordinated with research.

The research output of these graduate programs should be disseminated through a carefully executed extension program, to obtain pay-off and feed back. These in turn will improve graduate instruction and research at the IPB.

## Sub-Project ACTIVITIES

A Summary of activities to be developed in this sub-project during Phase II is stated and plotted on a time schedule in Chart D<sub>1</sub>.

Chart D<sub>1</sub>. Time Schedule for Development of Graduate Instruction Project at IPB

A c t i v i t y	Target Date for Activity				
	1976	1977	1978	1979	1980
<b><u>Output 4a.</u></b> Formation of the Graduate School					
1. Draw up Regulations	—				
2. Approval of Regulations					
3. Elect Board					
4. Establish Administrative Office of School		—			
5. Initiate School Actions					
<b><u>Output 4b.</u></b> Establish Magister Program					
1. Initiate classes in:					
a. First 7 fields of concentration	—				
b. Second 8 fields of concentration					
c. third 4 fields of concentration					
2. Obtain fellowships or study grants for students					
3. Graduate Magister Student					

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Chart D<sub>1</sub> (continued)

A c t i v i t y	Target Date for Activity				
	1976	1977	1978	1979	1980
<u>Output 4c.</u> Establish in-course Doctorate					
1. Continue Transition Program					
2. Complete regulations for "incourse Program"					
3. Initiate Doctorate					
a. First areas					
b. Second areas					
<u>Output 4d.</u> Complete Development of Graduate Research Facilities (Cross Referenced with Research and Public Service)					
1. Supplement equipment Central Chem. Lab	← 1975				
2. Supplement equipment for Computer Lab	← 1975				
3. Equip Advanced Physics Lab					
4. Additional equipment for Agri. and Animal Sci. Expt. Sta.					
<u>Output 4a.</u> Develop Agricultural Communication Center (See Public Service also)					
1. Equip Center					
2. Put into use in Graduate Program					

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IPB Sub-Project for University Administration

The Sub-project for University Administration at IPB is designed to facilitate the institutional process of planning, and implementation of activities which will make it possible for the University to make its contribution toward achieving the Project Purpose given above.

Sub-Project OUTPUTS. In the Sector of University Administration and Services, the following specific outputs are expected to contribute to achievement of the Project Purpose.

Output 5.a. Development of Personnel and financial sections of University Administration completed. The personnel section will provide service to staff and students in registration, promotions, retirement and other pensions, dismission, transcripts and records and other personnel needs. The financial section will handle all financial and business arrangements concerning students, teaching staff and other personnel of the University.

Output 5.b. Development of a system of University services completed. This section will provide centralized service for University staff and student to maximize support for Academic programs and provide for the safety and well being of the University Community.

Sub-Project ACTIVITIES

Activities projected for this sub-project are designed to insure continued development of the Sector as planned at the beginning of the Program and initiated in Phase I.

A series of Study Sections and Planning Workshops utilizing Indonesian and Mucia-staff will be established to bring high level administrators of the University together to consider and recommend changes in the University Structure and organization. Staff will also continue to be trained in Indonesia and overseas to more effectively fill administrative responsibility.

In regard to central University Services, efforts will be continued to upgrade all areas, especially the library and units which have not yet been developed.

Chart E<sub>1</sub>. Time Schedule for Development of Un. Adm. and General Services Project at IPB

Activity	Target Date for Activity				
	1976	1977	1978	1979	1980
<b>Output 6a. Develop Personnel and Finance Sections</b>					
1. Appoint Study Group					
2. Hold Admin. Workshops	—				
3. Invite MUCIA specialist		—			
4. Make Recommendations					
5. Implement recommendations					
6. Develop Staff					
a. Upgrading in Indonesia	—	—	—	—	
b. Degree programs overseas					
c. Non-degree training overseas					
7. Hire additional staff					
8. Complete Adm. Building		—			
9. Purchase required equipment					
<b>Output 6b. Develop University Services</b>					
1. Develop and improve Service Units					
a. Data Processing Center					
b. Central Library					
c. Univ. Printing Shop					
d. Central Repair & Maintenance					
e. Centralized Store Rooms					
f. Visual Aid Center					
g. Central Mech., Vehicle and Carpentry repairshop					
h. Emergency Electrical Plant					

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IPB Sub-Project for Staff Training

Sub-Project OUTPUTS. The output which IPB expects to contribute toward achievement of the Project Purpose follow:

Output 6.a. Strong teaching Staff. A strong teaching staff in at least 4 additional fields of concentration at the end of 1980. These fields of concentration are in addition to the 8 fields of concentration which are to be established at the end of 1976.

Output 6.b. Effective administration. An effective administration at all national universities will be established by the end of 1980. A good administration should be developed at IPB to be used as model for other universities during on-the-job training programs.

Output 6.c. Strong established research program. A strong research program must be established at IPB by the end of 1977, which puts it in a position to execute a good program at the graduate level and assist the stronger national universities in developing their research program. As a result they will be able to improve their Ir level training by the end of 1980.

Output 6.d. Strong and effective public service program. The condition as stated in Output 6.c. will also put IPB and the stronger national universities in a position to develop and execute a good and effective public service program, with strong and lasting linkages with other institutions, nationally and internationally.

Chart F<sub>1</sub>. Time Schedule for Development of Staff Training Project at IPB

Activity :	Target Date for Activity				
	1976	1977	1978	1979	1980
<b>1. <u>Technical Assistance</u></b>					
1) University Administration		—		—	—
2) Undergraduate	→	—	—	—	—
3) Graduate	—	—	—	—	—
<b>2. <u>Participant Training (overseas)</u></b>					
1) Continuing					
2) New Degree					
3) Non-Degree	—	—	—	—	—
<b>3. <u>In-Country Training (upgrading)</u></b>					
1) University Administration		—		—	—
2) Undergraduate	—	—	—	—	—
3) Graduate	—	—	—	—	—
4) Research & Public Service	—	—	—	—	—

# BEST AVAILABLE DOCUMENT

LOGICAL FRAMEWORK  
HIGHER AGRICULTURAL EDUCATION PROJECT  
at Institut Pertanian Bogor  
Phase - II  
1976-1981

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## NARRATIVE SUMMARY

## OBJECTIVELY VERIFIABLE INDICATOR

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### A<sub>1</sub> GOAL

Develop a modern University capable of meeting the needs for highly trained manpower and research and public service activities needed to increase production, equalize income distribution and create more employment opportunities for the Agricultural Sector.

### A<sub>2</sub> MEASURE OF GOAL ACHIEVEMENT

Dynamic undergraduate and graduate, degree and non-degree training programs to supply specialized manpower to meet the demand for national Agricultural development.

- a. An increase in production of essential agricultural crops on an average of 4.6% per year with increased production in specific crops as defined in Pelita II.
- b. A real rise in income of about 5% per year for the agricultural sector.
- c. An increase in job opportunities of about 13%.

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 NARRATIVE SUMMARY
 

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 OBJECTIVELY VERIFIABLE INDICATOR
 

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 B<sub>1</sub> PURPOSE

 1. Public Service

Establish a public service program which will effectively support formal and non-formal education and the development of the Agricultural sector.

 2. Research

To establish within the Indonesian H.A.E. system the capability for conducting effective programs of research in support of public service activities and graduate teaching programs in accordance with national goals.

 3. Undergraduate Instruction

To develop within the IPB and subsequently within all institutions of HAE, the capability to efficiently train a large number of students to their first degree.

 4. Graduate Instruction

To establish within Indonesian universities the capability to provide advanced training for Indonesian students, preparing them to apply scientific principles to the discovery, development and dissemination of knowledge and to play leadership roles in agricultural education, research and public service.

 5. Administration

To create an administration system which makes the most effective use of staff and other resources in achieving the goals of the university.

 B<sub>2</sub> PROGRESS TOWARD END OF PROJECT STATUS

 1. University Public Service

- a. Regional governments assisted by University Extension Service.
- b. Program for non-formal education established as a continuing responsibility of the University.
- c. Community interest in Public Services program is growing as indicated by increasing demand for these activities.

 2. Research

- a. Research projects are geared to public service activities in priority areas in agriculture and are part of the graduate education program.
- b. Research activities contribute to priority projects in national development.

 3. Undergraduate Instruction

- a. A large number of first degree graduates is employed in extension, agribusiness, vocational teaching and research support.
- b. Students completing curriculum in an efficient manner with drop-out ratio decreased to the maximum of 30% and no serious problems of student accumulation at specific levels.

 4. Graduate Instruction

- a. Magister and Doctorate degrees recognized nationally and internationally.
- b. Magister and Doctorate candidates being graduated within the time limits set for their programs.
- c. Second degree graduates are employed at key positions in teaching, research and public service activities in the agricultural sector.

 5. Administration and General Services

- a. Personnel affairs of all levels of the University community effectively served by Central Administration.
- b. Business transactions of the University rapidly and effectively administered by the financial section of Central Administration.
- c. General Services provide regular, effective service to the University Departments.

**C<sub>1</sub> OUTPUTS**

1. University Public Service Programs
  - a. Effective administrative unit for directing Public Service activities.
  - b. Trained Extension specialists in priority disciplines.
  - c. Institutionlized high priority Public Service Projects.
  - d. Intensive program for technical training and informal education.
2. Research
  - a. To develop material as input for public service activities.
  - b. To develop material for training and education.
  - c. To develop research projects for advanced degree programs.
3. Undergraduate Instruction
  - a. Improved academic administration system.
  - b. Four year curriculum established as basic first degree program.
  - c. Four year first degree program established in National Universities in the Provinces with assistance of the IPB.
  - d. Upgraded curriculum and facilities for first degree program at the IPB.
  - e. Effective system of student services established.
4. Graduate Instruction
  - a. Graduate School established.
  - b. International level of Magister program established and functioning.
  - c. In-course Doctorate program established.
  - d. Facilities for Graduate research upgraded.
5. University Administration
  - a. Development of Personnel and Financial section of University Administration completed.
  - b. Development of a system of University services completed.

**C<sub>2</sub> MAGNITUDE OF OUTPUTS**

1. University Outreach Program
  - a. Reorganized structure effectively directing Public Service activities of IPB in 10 priority areas.
  - b. Six specialist staff appointed and trained to work in 5 priority areas.
  - c. New technical assistance programs established in 7 priority areas as follows:
    - Community development
    - Qualitative transmigration
    - Environmental studies
    - Improvement of production and utilization of priority crops
    - Livestock breeding, management and nutrition
    - Forest management on forest products
    - Fisheries production
  - d. Informal education program established or continued for the following areas:
    - Training of transmigrants
    - Upgrading of technical staff of affiliated Universities
    - Training for improvement of family nutrition
    - Training farmers via mass media
    - Training of extension staff
  - e. Technical services
    - 10,000 soil samples analyzed annually
    - Artificial insemination service
2. Research
  - a. Material developed for 7 public service projects
  - b. Material developed for 5 training programs
  - c. Material developed for advanced degree programs in 18 fields of concentration.
3. Undergraduate Instruction
  - a. Academic administration system at IPB provides for uniform entrance exams, student services and counseling
  - b. Four-year first degree program approved as basic program at IPB.
  - c. Two National Universities in the Provinces adapted the four-year first degree program with assistance of IPB.
  - d. Curriculum and facilities for 20 courses in first degree program upgraded at IPB.
  - e. By 1980 achieve an annual output rate of 300 first degree graduates at IPB and 300 from affiliated Universities.
4. Graduate Instruction
  - a. One director, 2 associates and 4 clerical staff appointed to serve on newly established Graduate administration system.
  - b. Magister program established in 18 fields of concentration and 200 grants and fellowships awarded to students with an annual average of 200 students in Magister Program.
  - c. Transition Doctorate Program for 15 candidates completed, 25 in process and in-country Doctorate Program initiated for 15 to 20 candidates annually in 6 areas.
  - d. Three advanced graduate labs completed and equipped and additional equipment for Animal and Agricultural Science Experimental Station.
5. Administration and General Services
  - a. New administration building completed, revised administrative structure developed and initiated. One Director and staff appointed at key positions in administration.
  - b. Eight units of University General Services developed or improved.

ANNEX C

DEVELOPMENT PLAN

1976-1980

UNIVERSITAS GAJAH MADA

Agro-Complex

Sub-Project Proposals

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GMU Sub-project for Public Service

Gadjah Mada University used to have respectively the Coordinative Section for Public Service Activities (PSHA) and the Bureau of Public Service (BIPEMAS) to coordinate and plan activities on the field. Since 1974 a special vice rector for public service has been appointed and the entire organization has become the LPM or Institute for Community Development delineating a scope of activities as follows:

- a. To develop programs for community development at the local, national, and regional level.
- b. To establish linkages with other sectors carrying on extension activities (e.g. agricultural extension service).
- c. To extend counseling services to the government and the public.
- d. To help the government to execute institutionalized high priority public service projects, intensive program for technical/specialist training, informal education etc.

The LPM develop the annual program of activities and covers among others the following projects:

- (1) The Mangunan-Girirejo project, constituting a rehabilitation effort of an eroded rugged area.
- (2) The Merapi Slope development activities, comprising of two projects:
  - (a) The Turgo Slope community development outreach
  - (b) The Gangkringan water supply and development project.
- (3) The Study-service activities.

A listing of the sub-project outputs could then be presented:

1.e. Community Development Activities

This has been initiated since 1960 representing coordinated interdisciplinary activities, firstly managed by a coordinating board the P S H S, which later became the Bipemas (Bureau of Public Service) and finally transferred to a LIM (Institute of Community Development). One of the projects or activities that really has made a great impact is the : "Rural Community Development Project at Gangkringan." Phase I of this project involves the establishment of a water supply which is to serve over 20,000 people. Also included in this phase is the promotion of pineapple production, which would involve, among other things, buying two trucks to transport plants and fertilizer to the villages and pineapples to market, and improving the roads the trucks will use. Money for the Gangkringan project has been obtained from the World University Service. The project is interesting for its high level of student participation, and for the opportunities it may open for low-budget service activities in the area.

1.f. Specialist Service and in-service training

In order to establish linkages with the other ministries both types of services have been initiated since 1960 and when time goes on better systems and methodologies are being applied to reach maximum effectiveness. The scope and nature of these services would primarily be synchronized with the national development programs.

1.g. Study-service Activities

GMU has a long history of involvement in service projects, and is one of the three universities which received a special grant from the ministry of education and culture to run a multidisciplinary student service pilot project in 1971-72. From November 16-18, 1972 GMU hosted a working conference of representatives from the thirteen Indonesian Universities involved in study-service pilot projects for 1973. This was followed by an international seminar.

1.h. The ATRD station

This station would become a "Lebensraum" for both research and public service activities, and will be explained under the sub-project on Graduate Instruction.

Sub-project activities and inputs

A summary of activities to be developed in this sub-project during Phase II could be lined up as follows:

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Chart Time Schedule for Development of Public Service Project at GMU

Activity	Target date for activity				
	1976	1977	1978	1979	1980
1. Community Development Activities					
2. Specialist Service and In-service Training (a.o. ambulatory service)					
3. Study-service Activities (3-6 months a year)	—	—	—	—	—
4. ATRD Station					

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5.

## GMU Sub-Project for Research

The GMU research activities will be synchronized with the National Goals in the Agricultural Sector, and will also support teaching and staff development programs.

The major programs of research will cover areas of the Natural and Human resources development, Plant and animal production, Forestry, Fisheries and Utilization of waste products.

Research activities on production, protection, processing and marketing of animal and plants will be expanded as continuation of the existing programs.

More effective programs on aspects of the Natural and Human Resources will be developed. These programs include Ecological Studies, conservation of soil, water and the biotic balance, land reclamation and land use, Resettlement and Rural Development etc.

Effective ways and means for the technical and economic diversification of cropping will be studied and developed.

In Animal Science the programs will be stressed on Animal Husbandry, Animal Production, Animal Health and animal nutrition.

In Fisheries more attention will be given to studies on the domestication of wild fish, nursery culture, rearing and feeding.

In Forestry the research activities will cover various aspects of Forest Conservation and Management, Tropical Silviculture and Wood Technology.

## Sub-Project Outputs

The following specific outputs are expected to contribute toward the achievement of the project purpose :

- 6.
- 2.e. to develop research activities to support graduate research and staff development program.
  - 2.f. to provide operational facilities for a Training, Research and Development Centre to support graduate teaching and Public Service.
  - 2.g. To establish linkages with other sectors carrying on agricultural research.

#### Sub-project Activities

The research project will be developed and operated as an integral part of GMU effort toward achievement of the project purpose, to establish within GMU effective programs of research in support of teaching activities and staff development program and to develop materials for the public service activities. These programs are synchronized with the National Goals The University system should be able to assist the government and society in participating in high priority programs.

The managerial aspects of research activities will be improved in this phase II.

Time schedule for Development of Research Project at GMU

A c t i v i t y	Target Date of Activity				
	1976	1977	1978	1979	1980
I. Organization					
A. Development of Adm. Unit					
B. Establishing Research Priorities					
II. Program Development					
A. Natural & Human Resources Dev.					
1. Ecological studies					
2. Land reclamation and landuse					
3. Conservation of soil, water and biotic balance (Management of Natural & Human Resources Human environment)					
4. Resettlement & Rural Development					
B. Plant Production					
C. Animal Production					
D. Forestry					
E. Fisheries					
F. Utilization of waste product					
III. Development of facilities					
A. Lab and Field equipment					
B. ATRD Station Development					

## UGM Sub-project on Graduate Instruction

As result of the MUCIA assistance during Phase I (1970-75) 15% of Agro-Complex staff members have obtained the MS degree and 3% the Ph.D degree. A step by step improvement of the laboratories took place facilitating better means for producing Sarjana degree graduates, but these laboratories are still considered inadequate for post-graduate purpose, primarily when dealing with elaborating a doctor thesis, or in other words most of the laboratories are not yet adequate for being determined as research laboratories. However, another improvement could also be mentioned namely the establishment of an experiment station (an agricultural training, research, and development station or an ATRD station) which will enhance research activities for graduate students and staff members as well.

In order to be able to back up a graduate program or a post-graduate program two types of systems will be maintained:

- a. An in-course type of post-graduate system leading toward the equivalent of a Ph.D degree, and
- b. A doktor-program based on individual achievement and utilizing pure academic excellence as a base.

For both objectives more expertise and specialists are required, and this could be brought about by sending more people for advanced training abroad in order to obtain more Ph.D graduates who are going to be responsible to maintain the in-course program and be able to ameliorate more output for the doktor-program. Efforts to improve the existing facilities with the objective to acquire more advanced research laboratories, including an ATRD station that should still be further

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endorsed, having as final output adequate means to back up a graduate program. This program could be institutionalized and handled properly by a special board or committee for the graduate studies.

#### Sub-project outputs

Based on the existing system of education/two main levels of post-graduate programs could be stipulated.

#### 4.e. The graduate or sarjana level

Improvement of this level could be framed out as follows:

- 4.e.1. Advanced training of staff members
- 4.e.2. Improvement of organization and curricula
- 4.e.3. Better research facilities consonant with the academic standards.

Further detailed assessment could be delineated :

#### 4.e.1. MS participant program

This advanced training program is projected to come out with 50 master's degrees by the end of Phase II, and will improve the teaching ability of the staff members

#### 4.e.2. Improvement of the academic organization and system

It has been expected that the Agro-Complex faculties are going to have one educational system with the understanding of adopting the same number of credit course requirement and having met the appropriate standard of excellence.

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**b. Organisational setting, system and protocol**

A board or committee will be appointed to be in charge of activities pertaining to Post Graduate Studies, comprising not only to instil a favourable condition and atmosphere, but also :

- to invite promoters and advisors for this program
- to improve the required facilities
- to endorse 2 types of programs, namely
  - the in-course Ph.D system
  - the Doktor system or the individual achievement of academic excellence

Gradual improvement of the Doktor system would also be initiated by instigating a partial in-course program offered by the Agro-Complex faculties or other universities. Short-visitors/short-term experts from the MUCIA universities will also be utilized for this purpose.

The Board for Post Graduate Studies will actively be serving to set up a protocol for securing either the doktor degree or the Ph.D degree. This protocol will among others be covering :

- (1). The recruitment and active securing of promoters and copromoters, indigenous as well as foreign
- (2). Laying out full in-course system as well as inciting certain required courses for the doktor program
- (3). Securing financial resources to support the research activities for thesis processing.

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Cross fertilization of common graduate courses would be endorsed in order to avoid overlap and duplication.

Returning participants obtaining advanced degrees would be getting the full responsibility to improve the existing curricula intrinsically as well as the teaching method.

4.e.3. Improvement of facilities

In line with the development of the graduate program adequate facilities are needed which stand out as

4.e.3.1. buildings for more space requirement

4.e.3.2. equipment

4.e.3.3. supplies

4.d. The post-graduate level

The outputs of this program could be presented as follows:

4.d.1. Qualified scientist meeting the standards of excellence

4.d.2. Qualified teachers or faculty members

4.d.3. Better organization and educational system

4.d.4. Adequate facilities

Further detailed information could be delineated:

a. Ph.D program

Within the time span of this Phase II 40 Ph.D holders are projected including those of Phase I. This projection could be translated having an output of 5 Ph.D holders and Doktor holders every year.

c. Improvement of facilities

It would of course be logical that in order to establish a decent post-graduate program, improvement of the space requirement and equipment would be necessary. For this purpose priorities would be given to certain laboratory facilities that have been felt mostly important, divided into short-term needs and requirement in the long run planning objectives. The most necessitated facilities could be lined up as follows:

- c.1. An agricultural analytical chemistry laboratory
- c.2. A data processing center, annex a biometry laboratory
- c.3. An ATRD or Agricultural Training, Research, and Development station.

Sub-project Activities

A summary and schedule of activities to be developed in this sub-project during Phase II are presented,

**Time Schedule for Development of Graduate Instruction at UCM**

Activities	Target Date for Activity				
	1976	1977	1978	1979	1980
<b>A. Graduate level</b>					
1. MS participants program	10 my	20 my	20 my	20 my	20 my
2. Improvement of academic organization and system					
a. Uniformity of system in Agrocomplex					
b. Efficient use of returning participants					
c. Integration of Common courses at graduate level					
2. Improvement of facilities					
a. Acquisition of additional space for grad. lab.					
b. Commodity order for grad lab.					
<b>B. Doctorate level</b>					
1. Ph.D participant program	5 my	5 my	5 my	5 my	5 my
2. Set up academic organization, system and regulation					
a. Appointment and establishment of graduate Studies Committee/Board for:					
a.1. in-course system					
a.2. doctor-system					
b. Setting the protocol					
c. Course offerings for both programs					

Activities	Target Dates for Activity				
	1976	1977	1978	1979	1980
3. Improvement of facilities					
a. Building for adv. Ag. analytical chemistry					
b. Order equipment for Ag. analytical Chemistry					
c. Building for biometry and data processing lab.					
d. Order equipment for biometry and data processing					
e. ATRD station in full operation					
f. Order and Install equipment for A.E.S. ATRD					

**Time Schedule for Development of University Administration and General Service at UGM**

Activities	Y e a r				
	76-77	77-78	78-79	79-80	80-81
<b>1. <u>Participant program</u></b>					
<u>Overseas:</u>					
a. degree program:					
- Univ. adm.					
- Library					
b. non-degree program:					
- Univ. adm.					
- Library					
- Audio-visual & SLATE					
- Maintenance & Warehouse administrator					
<u>In-country:</u>					
- Univ. Adm.					
- Library					
- Repairshop					
<b>2. Staff hiring</b>					
<b>3. Library building development</b>					
<b>4. Emergency electrical supply development</b>					
<b>5. Commodity purchase</b>					

Sub-project for University Administration & General Service (UGM)

The sub-project on university administration and general services at UGM is aimed at develop my effective and efficient use of manpower and general service units toward better functioning of the role of the university in education, research and public service.

Sub-project Outputs

To establish and develop manpower need in university administration, library, audio-visual and SLATE (Self learning and teaching unit), reproduction, repairshop and maintenance unit to support education, research and public service.

- 5.e. Train staff members capable to handle university administration, planning and curriculum development, library, audio-visual and SLATE, reproduction, repairshop and maintenance units (including store-room).
- 5.f. Improve the library and other general service units to reach a standard of service capacity that could enhance better academic activity.
- 5.g. Establish a well managed Agro-Complex administration office.
- 5.h. Establish a better communication and coordination of academic staff members with the general service units.

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17.

## GNU Sub-project for Undergraduate Instruction

The GNU undergraduate program is aimed at establishing a first degree level of education envisaging qualified professionals within the framework of improving the higher agricultural education. This undergraduate education is shiving to meet the required standards of highly qualified manpower for research and public service in the agricultural sector, which could be further diversified into the government extension service and the private sector as well. It should be nurtured that the curricular contents could always be maintained at an up-to-date level, and the graduates be given the capacity to lend them selves to the always changing demand of scientific growth and technological progress.

It will be deemed appropriate that next to the degree pattern of undergraduate education another opportunity should be offered leading toward a non-degree program for those who need advanced training.

Improvement within the curricular managerial administration would be envorsed by estavlishing a Committee for Curriculum Development and a Committee for Undergraduate Studies.

Sub-project outputs

In order to make this project be workable differentiation of outputs could be presented.

Output 3 f : Organization and Administration

Better administration is needed in order to establish a well ordered system of centralized enrollment (at the university level), and extending adequate filing and record retrieval at the faculty level.

The new grading system (alphabetical system) has been introduced since 1974, but the Faculty of Agriculture adopted this system since 1972. For this purpose every faculty within the Agro-Complex Faculties appoints some staff members to handle the academic administration. It has been visualized that by training of capable non-academic personnel for the administration of this new system, the burden of the staff members could be transferred.

Next to the grading system the credit system has also been adopted since 1974 and within the Agro-Complex faculties this system has respectively been introduced in 1972 for the faculty of agriculture, in 1974 for the faculty of biology, and in 1975 the other four Agri-faculties.

Output 3 g : The four-year first degree program

This four-year program is characterized by having a combination of a scientific education and a terminal professional education. Graduates from this first degree level of education would get ample opportunity to go to an advanced graduate level of education after thorough scrutiny based on having obtained a certain standard of measurement (a predetermined minimum average grade point).

This achievement oriented type of promotion or giving the opportunity to pursue for a higher level of education based on aptitudinal capacities could be considered as a democratic gesture. Graduates of the first-degree level would accordingly be geared toward two opportunities:

- a. to get right away to the job market and be useful for community either as an extension officer or private entrepreneur.
- b. to pursue for advanced education to become a research worker or a specialist scientist.

This level of education would have a total credit of 130 to 150 depending upon the kind of major science option and the faculty. The academic year would be divided into 2 semester, and each semester will last 16 to 20 weeks.

### Output 3 h : Improvement of curriculum and facilities

Review and improvement of curricula and facilities are needed in order to be able to establish an adequate 4-year degree program. These facilities will include classrooms, laboratories, a central undergraduate library for the Agro-Complex faculties, an experiment station, and an agricultural analytical chemistry laboratory.

### Output 3 i : Assistance to the National Universities in the provinces

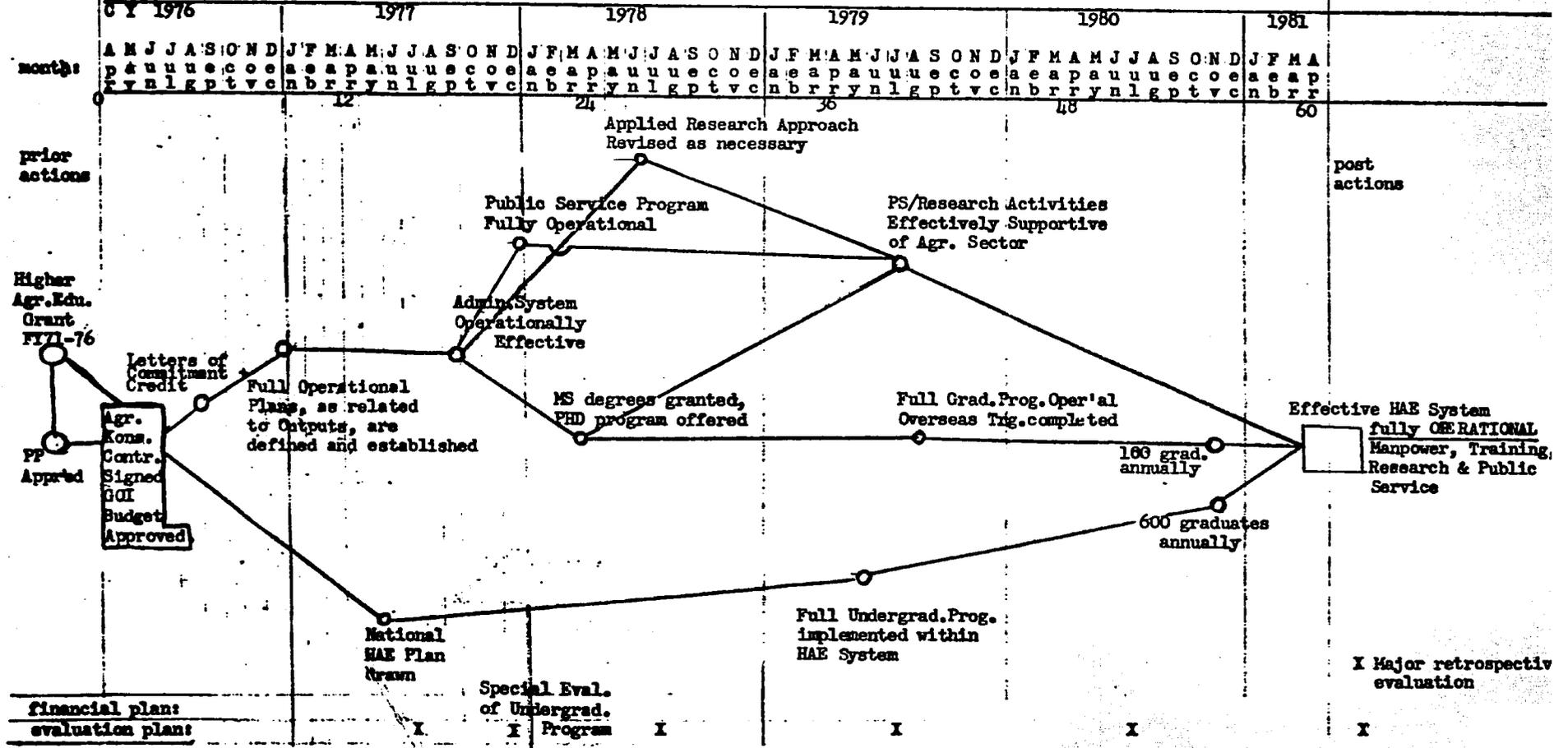
Based on the principle that the 4-year program would also be adopted by the other National Universities in the provinces, the Agro-Complex has the responsibility to assist these agri-faculties. This assistance would consist of the following activities :

Time Schedule for Development of Undergraduate Instruction Program at UGM

A k t i v i t y	Target Date for Activity				
	1976	1977	1978	1979	1980
<u>Output III F. Establish improved Academic Administration System.</u>					
1. Move to full credit system					
2. Establish Uniform grading system					
3. Improve student record filing system					
4. Train career academic administrator					
<u>Output III G. Four year curriculum established as basic first degree program</u>					
1. Four year curriculum established within Agro-Complex					
2. Completion of Pilot Project					
3. Approval of Pilot Project					
4. Establish uniform system for undergraduate Program at Agro-Complex Faculties					
5. Organize Coordinated system of instruction in basic and pre professional courses					
6. Reprogramming of basic courses at non-Agro Faculties					
7. Improvement of professional courses.					

PROJECT PERFORMANCE TRACKING (PPT) SYSTEM

country: INDONESIA project no.: 497-0260 project title: Agricultural Education for Development date: 11/7/75 / X / original / / revision # PPT appr. \_\_\_\_\_



CRITICAL PERFORMANCE INDICATOR (CPI) NETWORK

STATUTORY CHECKLIST

I. FULFILLMENT OF STATUTORY OBJECTIVES

A. Needs Which the Loan is Addressing

1. FAA Section 103. Discuss the extent to which the loan will alleviate starvation, hunger, and malnutrition and will provide basic services to poor people enhancing their capacity for self-help.
  1. Although this loan is not directly targeted on increasing food production, the creation of a trained manpower base for the agricultural sector will improve basic agricultural services (research, information, public service) for poor Indonesians in the rural agricultural sector throughout the archipelago. Increased agricultural production by millions of smallholders will help alleviate starvation, hunger and malnutrition and increase the capacity for the rural poor to undertake self-help efforts.
2. FAA Section 104. Discuss the extent to which the loan will increase the opportunities and motivation for family planning; will reduce the rate of population growth; will prevent and combat disease; and will help provide health services for the great majority of the population.
  2. The loan is not directly related to reducing the rate of population growth. However, there is some evidence to suggest that families have greater motivation to reduce their fertility as their general standard of living increases. Indonesia currently has a vigorous family planning program which is supported by AID and other donors and which can respond to increases in demand for family planning services by rural farmers.
3. FAA Section 105. Discuss the extent to which the loan will reduce illiteracy, extend basic education, and increase manpower training in skills related to development.
  3. The pilot higher agricultural education system developed under this project will serve agricultural development needs by producing new, well-trained graduates, by supplying training and upgrading opportunities for the existing agricultural service,

## Annex E

and by developing a research capability and research thrust geared to Indonesian agricultural priorities.

4. FAA Section 106. Discuss the extent to which the loan will help solve economic and social development problems in fields such as transportation, power, industry, urban development, and export development.

5. FAA Section 107. Discuss the extent to which the loan will support the general economy of the recipient country; or will support development programs conducted by private or international organizations.

4. Through the improved handling and processing of agricultural export commodities which results from the development of an Indonesian capacity to train manpower in these areas, the loan should contribute over the long run to development of overseas markets for export crops.

5. Since the agriculture sector counts for about 40 percent of Indonesia's GNP and 68 percent of the labor force is employed in agriculture, the overall improvement in agricultural production will have a generally beneficial effect on the Indonesian economy.

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B. Use of Loan Funds

1. FAA Section 110. What assurances have been made or will be made that the recipient country will provide at least 25% of the costs of the entire program, project or activity with respect to which such assistance is to be furnished under Sections 103-107 of the FAA.

2. FAA Section 111. Discuss the extent to which the loan will strengthen the participation of the urban and rural poor in their country's development, and will assist in the development of cooperatives which will enable and encourage greater numbers of poor people to help themselves toward a better life.

3. FAA Section 660. Will arrangements preclude use of funds for police training or other law enforcement assistance?

1. The GOI will give its assurances by signing a loan agreement with such a provision therein. The GOI will contribute \$4.792 million of the estimated \$10.292 million total project cost which constitutes 47 percent of the entire cost.

2. Both quantitative and qualitative improvements in the manpower base for agriculture should be translated in a relatively short time span into improvements in agricultural production and, in turn, job opportunities and increasing income for poor people living in rural areas. The project will improve the manpower base necessary for the formulation and administration of agricultural cooperatives which already exist in fairly large number throughout Indonesia. The loan, through the upgrading skills in the agricultural sector, should contribute to the overall improvement in living standards of large numbers of the rural poor who will then, both through attitude and knowledge, be better able to participate in their country's development.

3. Yes.

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4. FAA Section 113. Describe the extent to which the programs, projects, or activities to be financed under the loan give particular attention to the integration of women into the national economy of the recipient country.

4. A much higher percentage of women are found in Indonesian faculties than in faculties of American universities and both men and women occupy equally responsible positions in Indonesian universities. Training opportunities will be available on equal terms under the project to both men and women. As the benefits of the project begin to affect the rural poor employment opportunities for women, who do a large percentage of work involved in rice production, will be increased.

5. FAA Section 114. Will any part of the loan be used to pay for the performance of abortions as a method of family planning or to motivate or coerce any person to practice abortions?

5. No

II. COUNTRY PERFORMANCE

A. Progress Towards Country Goals

1. FAA <sup>SS</sup> 20(b)(5), 201(b)(7), 201(b)(8), 208. Discuss the extent to which the country is:

(a) Making appropriate efforts to increase food production and improve means for food storage and distribution.

(a) Indonesia is giving priority attention to projects which aim at increasing food production, particularly rice. There are currently over 110 donor-supported technical and capital assistance projects in support of food production. The majority of the above projects are directly concerned with increasing food production, and improved food storage, distribution and marketing.

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(b) Creating a favorable climate for foreign and domestic private enterprise and investment.

(c). Increasing the people's role in the development process.

(d) Allocating expenditures to development rather than to unnecessary military purposes or to intervention in the affairs of other free countries.

(b) The GOI enacted a comprehensive law with built-in incentives for encouraging foreign capital investment and has concluded an Investment Guaranty Agreement with the U.S. Under the foreign investment law tax credits of up to 5 years may be obtained for new investment in plant and facilities, subject to negotiation.

(c) Although the Government owns a majority of the large enterprises in the country, it is actively encouraging private domestic investment. Officials of State Enterprises are receiving more freedom in management, and some State Enterprises are being converted to semi-private corporations. National elections were carried out in July 1971, and Parliament has a part in the budgetary process inasmuch as the annual budget must be authorized by Parliament and expenditures reported in the "Annual Report of Budgetary Accounts." Parliamentary elections are scheduled for June 1977.

(d) With the end of confrontation with Malaysia in 1966, the Suharto Administration reversed the foreign intervention policy of the Sukarno regime. Military expenditures have been sharply reduced as the Government has concentrated the nation's domestic resources - and foreign aid receipts - on achieving economic stability and pursuing an ambitious development program.

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(e) Willing to contribute funds to the project or program.

(f) Making economic, social, and political reforms such as tax collection improvements and changes in land tenure arrangements; and making progress toward respect for the rule of law, freedom of expression and of the press, and recognizing the importance of individual freedom, initiative, and private enterprise.

(e) The GOI will contribute up to \$6.0 million (equivalent) in local currency to meet a major part of the local expenditure requirements of the Project.

(f) Major economic reforms have been instituted with IMF/IBRD assistance including incentives to growth of individual initiative and private enterprise. Effective December 9, 1970, the GOI established one uniform exchange rate for all types of foreign exchange. On August 9, 1971, to reduce the trade gap, the Rupiah was devalued by about 10% to Rp. 415/US \$1. Further devaluations in December 1971 and early 1973 were pegged to devaluations of the dollar; the Rupiah has remained stable since then. The rate of inflation was reduced from 636.8 percent per annum in CY 1966 to about 10% in CY 1971. Inflation was about 26% in 1972, largely due to rice price increases; and continued at a level of about 30% during 1973 and 1974, although due principally to general price increases, not just rice alone. In 1975 inflation is estimated at 15%. GOI revenues from the oil sector have grown rapidly since 1967 -- equalling Rp. 48 billion in 1969/70, Rp. 345 billion in 1973/74, and a projected Rp. 1.2 trillion in 1975/76 (2/3 of projected government revenues). Non-oil revenues have grown with the economy during the same period.

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(g) Responding to the vital economic, political, and social concerns of its people, and demonstrating a clear determination to take effective self-help measures.

(g) Approximately 12 percent of the development budget is devoted to the social field, which includes education, health, family planning, housing, manpower, social welfare, drinking water supply, culture and religion. The cooperating Government has encouraged self-help projects, such as Food for Work and other irrigation and road building projects carried out through its Department of Manpower. A substantial low cost housing program will be implemented in the Second Five Year Plan which began in April 1974.

B. Relations with the United States

1. FAA §§ 620(c). If assistance is to a government, is the Government indebted to any U.S. citizen for goods or services furnished or ordered where: (a) such citizen has exhausted available legal remedies, including arbitration, or (b) the debt is not denied or contested by the government, or (c) the indebtedness arises under such government's or a predecessor's unconditional guarantee?

1. We are not aware of any cases that make Indonesia ineligible under this Section.

2. FAA § 620 (d). If the loan is intended for construction or operation of any productive enterprise that will compete with U.S. enterprise, has the country agreed that it will establish appropriate procedures to prevent export to the U.S. of more than 20% of its enterprise's annual production during the life of the loan?

2. Not applicable.

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3. FAA § 620(3)(1). If assistance is to a government, has the country's government, or any agency or subdivision thereof, (a) nationalized or expropriated property owned by U.S. citizens or by any business entity not less than 50% beneficially owned by U.S. citizens, (b) taken steps to repudiate or nullify existing contracts or agreements with such citizens or entity, or (c) imposed or enforced discriminatory taxes or other exactions, or operation conditions? If so, and more than six months has elapsed since such occurrence, identify the document indicating that the government, or appropriate agency or subdivision thereof, has taken appropriate steps to discharge its obligations under international law toward such citizen or entity? If less than six months has elapsed, what steps if any has it taken to discharge its obligations?

4. FAA § 620(i). Has the country permitted, or failed to take adequate measures to prevent the damage or destruction by mob action of U.S. property, and failed to take appropriate measures to prevent a recurrence and to provide adequate compensation for such damage or destruction?

5. FAA § 620(1). Has the government instituted an investment guaranty program under FAA § 234 (a) (1) for the specific risks of inconvertibility and expropriation or confiscation?

3. The majority of business and property owned by U.S. citizens which was nationalized during the Sukarno regime (principally in 1964 and early 1965) has been returned to U.S. owners or mutually acceptable settlement negotiated. The Government of Indonesia in a Presidential Decree dated December 14, 1966 indicated its willingness to return nationalized assets.

4. The country has not so permitted nor has it failed to take adequate measures.

5. Yes.

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6. FAA § 620(o). Fisherman's Protective Act of 1954, as amended, Section 5. Has the country seized, or imposed any penalty or sanction against, any U.S. fishing activities in international waters? If, as a result of a seizure, the USG has made reimbursement under the provisions of the Fisherman's Protective Act and such amount has not been paid in full by the seizing country, identify the documentation which describes how the withholding of assistance under the FAA has been or will be accomplished.

6. No. Remainder of question therefore not applicable.

7. FAA § 620(q). Has the country been in default, during a period in excess of six months, in payment to the U.S. on any FAA loan?

7. No. However, repayment of one FAA loan has been rescheduled by bilateral agreement dated March 1971 in accordance with terms of the Paris Agreed Minutes of April 1970.

8. FAA § 620(t). Have diplomatic relations between the country and the U.S. been severed? If so, have they been renewed?

8. No. Remainder of question therefore not applicable.

C. Relations with Other Nations and the U.N.

1. FAA § 620(i). Has the country been officially represented at any international conference when that representation included planning activities involving insurrection, or subversion directed against the U.S. or countries receiving U.S. assistance?

1. We have no information as to any such representational activity.

2. FAA § 620(a), 620(n). Has the country sold, furnished or permitted ships or aircraft under its registry to carry to Cuba or North Vietnam items of economic, military or other assistance?

2. We have no information of any such action by Indonesia.

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3. FAA § 620(u); App. § 107.  
 What is the status of the country's U.N. dues, assessments or other obligations? Does the loan agreement bar any use of funds to pay U.N. assessments, dues, or arrearages?

3. Indonesia is not delinquent with respect to U.N. obligations. The loan agreement limits the use of loan proceeds to procurement of goods and services from A.I.D. Geographic Code 941 (Selected Free World) countries plus Indonesia.

D. Military Situation

1. FAA § 620(i). Has the country engaged in or prepared for aggressive military efforts directed against the U.S. or other countries receiving U.S. assistance?

2. FAA § 620(s). (1) What is (a) the percentage of the country's budget devoted to military purposes; (b) the amount of the country's foreign exchange resources used to acquire military equipment, and (c) has the country spent money for sophisticated weapons systems purchased since the statutory limitations became effective? (2) Is the country diverting U.S. development assistance or PL-480 sales to military expenditures? (3) Is the country directing its own resources to unnecessary military expenditures?  
 (Findings on these questions are to be made for each country at least once each fiscal year and, in addition, as often as may be required by a material change in relevant information.)

1. No

2. (1)(a) The Department of Defense portion of the Operating and Development State Budget has ranged from a high of 33% in CY 1967 to a low of 22% in the FY 1973/74 budget. Defense and national security expenditures equal 4.8% of the 1974/75 development budget. (b) We have no knowledge of any significant expenditures of foreign exchange for the military. Less than 10% of the military budget is allocated for foreign exchange purchases. Moreover, the Department of Defense budget includes substantial amounts for construction of roads, bridges and other civil works projects. (c) No, the Government is placing primary emphasis on economic development and not diverting its own resources for unnecessary military expenditures.  
 (2) No.  
 (3) No.

III. CONDITIONS OF THE LOAN

A. General Soundness

Interest and Repayment

1. FAA §§ 201(d), 201(b)(2). Is the rate of interest excessive or unreasonable for the borrower? Are there reasonable prospects for repayment? What is the grace period interest rate? Is the rate of interest higher than the country's applicable legal rate of interest?

1. Although Indonesia's debt burden was heavy in the past, there has been very rapid growth in real Government revenues and favorable economic performance. With the high current level of foreign exchange export earnings, and assumed good economic management in the future, it is considered that future debt payments will be manageable. The various donors agree Indonesia has a debt burden for which the prospects of repayment are reasonable. Country terms of a 40-year loan, 10-year grace period, 2% interest during the grace period, 3% thereafter, pertain. The rate of interest is not higher than the country's applicable legal rate of interest.

Financing

1. FAA § 201(b)(1). To what extent can financing on reasonable terms be obtained from other freeworld sources, including private sources within the U.S.?

1. Loan assistance to Indonesia is provided within the framework of the Inter-Governmental Group on Indonesia (IGGI), advised by the IBRD and the IMF. This loan has been selected by AID as part of the U.S. Government contribution to the IGGI consortium and as such is supported by the IBRD resident mission. The ExIm Bank has expressed no interest in financing any portion of this Project.

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Economic and Technical Soundness

- 1. FAA §§ 201(b)(2), 201(c). The activity's economic and technical soundness to undertake loan; does the loan application, together with information and assurances, indicate that funds will be used in an economically and technically sound manner?
  - 1. Yes. See the Technical Analysis and Socioeconomic Analysis sections of the Project Paper.
- 2. FAA § 611(a)(1). Have engineering, financial, and other plans necessary to carry out assistance, and a reasonably firm estimate of the cost of assistance to the U.S. been completed?
  - 2. Necessary planning and a reasonably firm cost estimate for the Project have been completed (see the Technical and Financial Analysis Sections of the Project Paper).
- 3. FAA § 611(b):App. § 101. If the loan or grant is for a water or related land-resource construction project or program, do plans include a cost-benefit computation? Does the project or program meet the relevant U.S. construction standards and criteria used in determining feasibility?
  - 3. Not applicable.
- 4. FAA § 611(e). If this is a Capital Assistance Project with U.S. financing in excess of \$1 million, has the principal AID officer in the country certified as to the country's capability effectively to maintain and utilize the project?
  - 4. Not applicable.

Annex E

B. Relation to Achievement of Country and Regional Goals

Country Goals

1. FAA §§ 207,281(a).

Describe this loan's relation to: (a) institutions needed for a democratic society and to assure maximum participation on the part of the people in the task of economic development.

(b) Enabling the country to meet its food needs, both from its own resources and through development, with U.S. help, of infra-structure to support increased agricultural productivity.

(c) Meeting increasing need for trained manpower

(d) Developing programs to meet public health needs.

1. (a) A strong university system fosters the growth of institutions for a democratic society through the creation of a strong and responsible manpower base. The Project will increase community participation decision-making regarding agricultural production, thereby helping to maximize the involvement of villagers in the task of economic development.

(b) The project will help enable Indonesia to meet its food needs by contributing the formation of the manpower base in the agricultural sector which is needed for self-sustaining growth.

(c) The primary purpose of the Project is to create and sustain through university improvement and training a university system capable of producing all of Indonesia's trained manpower requirements for the agriculture sector.

(d) Not applicable.

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(e) Assisting other important economic, political, and social development activities, including industrial development; growth of free labor unions; cooperatives and voluntary agencies; improvement of transportation and communication systems; capabilities for planning and public administration; urban development and modernization of existing laws.

2. FAA § 201(b)(4). Describe the activity's consistency with and relationship to other development activities, and its contribution to realizable long-range objectives.

3. FAA § 201(b)(9). How will the activity to be financed contribute to the achievement of self-sustaining growth?

(e) Through the training of well-qualified university level personnel the Project will improve the ability of the university system to play a greater role in the activities of Indonesia and thereby will make an important contribution to economic, political, and social development.

2. The Project is consistent with other development activities and will make a substantial contribution to the long-range objectives of improving the number of trained people in the agricultural sector and expanding and broadening Indonesia's agricultural production base.

3. The project is aimed at removing the major impediment to viable growth in the agricultural sector, the lack of trained personnel for research, extension, and public services. By contributing to the development of human resources for agriculture, the project fosters self-sustaining growth.

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4. FAA § 201(1). If this is a project loan, describe how such will promote the country's economic development, taking into account the country's human and material resource requirements and the relationship between ultimate objectives of the project and overall economic development.

5. FAA § 201(b)(3). In what way does the activity give reasonable promise of contributing to development of economic resources or to increase of productive capacities?

6. FAA § 281(b). How does the program under which assistance is provided recognize the particular needs, desires, and capacities of the country's people; utilize the country's intellectual resources to encourage institutional development; and support civic education and training in skills required for effective participation in political processes?

4. The Project will promote the country's economic development through improving the manpower for agriculture and, in turn, increasing agricultural productivity, increasing rural incomes, improving income distribution and generating employment opportunities.

5. The Project will contribute to the development of human resources in the planning and execution of agricultural activities. Ultimately, it will increase the productive capabilities of the great majority of Indonesians who live and work in the rural areas.

6. The Project will meet the needs and desires of Indonesia's rural people for increased incomes, better income distribution, and expanded employment opportunities. The Project will achieve this goal by developing a pilot university system capable of producing cadres of agricultural sector professionals, thereby utilizing Indonesia's intellectual resources and encouraging institutional development. Civic education and training for effective participation in the development process will be gained through the university training to be provided in community participation and behavioral science skills.

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7. FAA § 601(a). How will this loan encourage the country's efforts 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 loans and associations;
- (d) discourage monopolistic practices;
- (e) improve technical efficiency of industry, agriculture, and commerce; and
- (f) strengthen free labor unions?

8. FAA § 202(a). Indicate the amount of money under the loan which is: going directly to private enterprise; going to intermediate credit institutions or other borrowers for use by private enterprise; being used to finance imports from private sources; or otherwise being used to finance procurements from private sources.

7. (a) Increased and improved manpower will eventually result in greater amounts of export crops at prices which are attractive on international markets.

(b) Not applicable.

(c) Trained manpower as a result of the project will become available to encourage development and use of cooperatives.

(d) Not applicable.

(e) The Project will encourage Indonesia's efforts to improve technical efficiency in industry, agriculture, and commerce by improving its technical knowledge and skills in a variety of agriculture sector disciplines.

(f) Not applicable.

8. Commodities to be procured for the Project using foreign exchange will be purchased from private enterprise. Commodities to be procured for the Project using local currency will be purchased from Indonesian suppliers, most of them privately owned. Construction of all structures will be contracted to Indonesian firms, many of them privately owned, wherever possible.

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9. FAA § 611(a)(2). What legislative action is required within the recipient country? What is the basis for a reasonable anticipation that such action will be completed in time to permit orderly accomplishment of purposes of loan?

9. None

Regional Goals

1. FAA § 619. If this loan is assisting a newly independent country, to what extent do the circumstances permit such assistance to be furnished through multilateral organizations or plans?

1. Not applicable.

2. FAA § 209. If this loan is directed at a problem or an opportunity that is regional in nature, how does assistance under this loan encourage a regional development program? What multilateral assistance is presently being furnished to the country?

2. The first part of the question is not applicable. The loan is being furnished in the context of multi-lateral aid to Indonesia by a consortium of donor countries (IGGI). The assistance is being coordinated with the advice of the IBRD.

Annex E

C. Relation to U.S. Economy

Employment, Balance of Payments  
Private Enterprises.

- 1. FAA §§ 201(b)(6): 102. Fifth. What are the possible effects of this loan on U.S. economy, with special reference to areas of substantial labor surplus? Describe the extent to which assistance is constituted of U.S. commodities and services, furnished in a manner consistent with improving the U.S. balance of payments position.
  - 1. Since traditional direct procurement finance by the Loan will be limited to AID Geographic Code 941 (Selected Free World) countries plus Indonesia, there will be a minimal adverse effect on the U.S. balance of payments.
  
- 2. FAA §§ 612(b), 636(h). What steps have been taken to assure that, to the maximum extent possible, foreign currencies contributed by the country are utilized to meet the cost of contractual and other services, and that U.S. foreign-owned currencies are utilized in lieu of dollars?
  - 2. Services requiring foreign exchange financing will be procured from AID Geographic Code 941 countries plus Indonesia. U.S.-owned local currency is not available in Indonesia.
  
- 3. FAA § 601(d); App. § 100. If this loan is for a capital project, to what extent has the Agency encouraged utilization of engineering and professional services of U.S. firms and their affiliates? If the loan is to be used to finance direct costs for construction, will any of the contractors be persons other than qualified nationals of the country or qualified citizens of the U.S.? If so, has the required waiver been obtained?
  - 3. Advisory services required to implement the Project will be procured from U.S. university.

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4. FAA § 608(a). Provide information on measures to be taken to utilize U. S. Government excess personal property in lieu of the procurement of new items.

5. FAA § 602. What efforts have been made to assist U.S. small business to participate equitably in the furnishing of commodities and services financed by this loan?

6. FAA § 621. If the loan provides technical assistance, how is private enterprise on a contract basis utilized? If the facilities of other Federal agencies will be utilized, in what ways are they competitive with private enterprise (if so, explain); and how can they be made available without undue interference with domestic programs?

7. FAA § 611(c). If this loan involves a contract for construction that obligates in excess of \$100,000, will it be on a competitive basis? If not, are there factors which make it impracticable?

4. Not applicable.

5. The loan agreement will contain a provision to ensure that opportunity for participation in the furnishing of commodities will be provided and approximately published. Advisory services, however, will necessarily come from a U.S. university due to the nature of the services required.

6. Due to the nature of technical assistance required, advisory services will necessarily have to come from American universities.

7. Not applicable.

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8. FAA § 601(b). Describe the efforts made in connection with this loan to encourage and facilitate participation of private enterprise in achieving the purposes of the Act.

8. Commodities to be procured for the Project using foreign exchange will be purchased from private enterprise. Commodities to be procured for the Project using local currency will be purchased from Indonesian suppliers, most of them privately owned.

Procurement

1. FAA § 604(a). Will commodity procurement be restricted to U.S. except as otherwise determined by the President?

1. Yes, procurement is limited to AID Geographic Code 941 countries plus Indonesia.

2. FAA § 604(b). Will any part of this loan be used for bulk commodity procurement at adjusted prices higher than the market price prevailing in the U.S. at time of purchase?

2. No.

3. FAA § 604(e). Will any part of this loan be used for procurement of any agricultural commodity or product thereof outside the U.S. when the domestic price of such commodity is less than parity?

3. No.

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4. FAA § 604(f). Will the agency receive the necessary pre-payment certifications from suppliers under a commodity import program agreement as to description and condition of commodities, and on the basis of such, determine eligibility and suitability for financing?

4. Not applicable. This is a project loan and not a commodity import program assistance loan.

D. Other Requirements

1. FAA § 201(b). Is the country among those countries in which development loan funds may be used to make loans in this fiscal year?

1. Yes.

2. App. § 105. Does the loan agreement provide, with respect to capital projects, for U.S. approval of contract terms and firms?

2. The loan agreement will cover this requirement.

3. FAA § 620(k). If the loan is for construction of a production enterprise, with respect to which the aggregate value of assistance to be furnished will exceed \$100 million, what preparation has been made to obtain the express approval of the Congress?

3. Not applicable.

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4. FAA § 620(b), 620(f). Has the President determined that the country is not dominated or controlled by the International Communist movement? If the Country is a Communist country (including, but not limited to, the countries listed in FAA § 620(f)) and the loan is intended for economic assistance, have the findings required by FAA § 620(f) been made and reported to the Congress?

4. Yes, the required determination has been made. Remainder of question is, therefore, not applicable.

5. FAA § 620(h). What steps have been taken to insure that the loan will not be used in a manner which, contrary to the best interest of the United States, promotes or assists the foreign aid projects of the Communist-bloc countries?

5. The loan agreement will cover this requirement.

6. App. § 109. Will any funds be used to finance procurement of iron and steel products for use in Vietnam other than as contemplated by § 109?

6. No.

7. FAA § 636(i). Will any part of this loan be used in financing non-U.S. manufactured automobiles? If so, has the required waiver been obtained?

7. No.

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8. FAA § 620(a)(1) and (2). Will any assistance be furnished or funds made available to the government of Cuba?

8. No.

9. FAA § 620(g). Will any part of this loan be used to compensate owners for expropriated or nationalized property? If any assistance has been used for such purpose in the past, has appropriate reimbursement been made to the U.S. for sums diverted?

9. No. No assistance has been used for such purposes in the past.

10. FAA § 201(f). If this is a project loan, what provisions have been made for appropriate participation by the recipient country's private enterprise?

10. Commodities to be procured with GOI contribution for the Project using local currency will be purchased from Indonesian suppliers, most of them privately-owned. Construction of most works will be contracted to Indonesian firms, many of them privately-owned, wherever possible.

11. App. § 103. Will any funds under the loan be used to pay pensions, etc., for persons who are serving or who have served in the recipient country's armed forces?

11. No.

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12. MMA § 901.b. Does the loan agreement provide, for compliance with U.S. shipping requirements, that at least 50% of the gross tonnage of all commodities financed with funds made available under this loan (computed separately by geographic area for dry bulk carriers, dry cargo liners, and tankers) be transported on privately owned U.S.-flag commercial vessels to the extent such vessels are available at fair and reasonable rates for U.S. flag vessels? Does the loan agreement also provide for compliance with U.S. shipping requirements, that at least 50% of the gross freight revenues of goods shipped under this loan must be earned by privately owned US flag commercial vessels to the extent such vessels are available at fair and reasonable rates for U.S. vessels?

12. Yes to both questions. These requirements will be applicable only to traditional direct procurement financed by the loan. The loan agreement will contain a provision covering these requirements.

13. FAA s 481. Has the President determined that the recipient country has failed to take adequate steps to prevent narcotic drugs produced or procured in, or transported through such country from being sold illegally within the jurisdiction of such country to U.S. Government personnel or their dependents or from entering the United States unlawfully?

13. No.

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14. App. § 110. Is the loan being used to transfer funds to world lending institutions under FAA §§ 209 (d) and 251(h)?

14. No.

15. App. § 501. Are any of these funds being used for publicity or propaganda within the United States?

15. No.

16. FAA § 612(d) and Section 40 of PL 93-189 (FAA of 1973). Does the United States own excess foreign currency and, if so, what arrangements have been made for its release in compliance with Section 40 (FAA of 1973)?

16. U.S.-owned excess local currency is not available in Indonesia.

17. FAA § 604(d). Will provision be made for placing marine insurance in the U.S. if the recipient country discriminates against any marine insurance company authorized to do business in the U.S.?

17. Yes. This requirement will be applicable only to traditional direct procurement financed by the Loan. The loan agreement will contain a provision covering this requirement.

18. FAA § 659. Is there a military base located in the recipient country, which base was constructed or is being maintained or operated with funds furnished by the U.S., and in which U.S. personnel carry out military operations? If so, has a determination been made that the government of such recipient country has, consistent with security, authorized access on a regular basis to bonafide news media correspondents of the U. S. to such military base?

18. No. Remainder of question therefore not applicable.

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19. Sections 30 and 31 of PL 93-189 (FAA of 1973). Will any part of the loan be used to finance directly or indirectly military or paramilitary operations by the U.S. or by foreign forces in or over Laos, Cambodia, North Vietnam, South Vietnam, or Thailand? 19. No.
20. App. § 111. Will any part of this loan be used to provide assistance to North Vietnam? 20. No.
21. FAA Section 640(c). Will a grant be made to the recipient country to pay all or part of such shipping differential as is determined by the Secretary of Commerce to exist between U.S. and foreign flag vessel charter or freight rates? 21. No.
22. App. § 112. Will any of the funds appropriated or local currencies generated as a result of AID assistance be used for support of police or prison construction and administration in South Vietnam or for support of police training of South Vietnamese? 22. No.

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23. App. § 113. Have the House and Senate Committees on Appropriations been notified fifteen days in advance of the availability of funds for the purposes of this project?

23. Appropriate steps are being taken to satisfy this requirement.

24. App. § 504. Will any of the funds appropriated for this project be used to furnish petroleum fuels produced in the continental United States to Southeast Asia for use by non-U.S. nationals?

24. No.

25. FAA § 901. Has the country denied its citizens the right or opportunity to emigrate?

25. No.

26. FAA § 115. Will country be furnished, in same fiscal year, either security supporting assistance, Indochina Postwar Reconstruction, or Middle East peace funds? If so, is assistance for population programs, humanitarian aid through international organizations, or regional programs?

26. No. Remainder of question therefore not applicable.

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27. FAA § 653(b). Is assistance within country or international organization allocation for fiscal year reported to Congress (or not more than \$1 million over that figure plus 10%)?

27. Yes

28. FAA § 662. Will arrangements preclude use of funds for CIA activities?

28. Yes

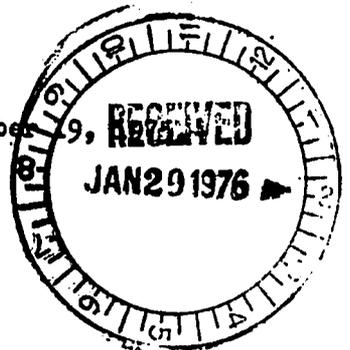


ANNEX F  
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REPUBLIC OF INDONESIA  
NATIONAL DEVELOPMENT PLANNING AGENCY  
JAKARTA, INDONESIA

No. : 7420 /D.I/XII/1975.-

Jakarta, December 9,



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

Dear Mr. Niblock,

Subject : Agricultural Education for Development.-

The Government of Indonesia requests from the Government of the United States of America a loan of up to five million US dollars (US\$ 5,000,000.-) for the purpose of and subject to the provisions hereinafter stated.

This loan is needed to help meet the partial cost to establish and implement a pilot system of specified agricultural university facilities with a national institutional capacity to produce trained manpower, and to establish programs with specific emphasis on rural community service, applied agricultural research, undergraduate education, graduate instruction and effective administration of university resources, all related directly to agricultural development.

The planned outputs of this project are as follows :

- a. A public service program in agriculturally-related faculties of eight Indonesian universities that will effectively support formal and non-formal education in the agricultural sector;
- b. A capability for conducting effective programs of research in support of public service activities and of graduate training programs in accordance with national goals;
- c. A capability to train efficiently and effectively a large number of students to their first degree, initially at Institut Pertanian Bogor (IPB) and Universitas Gajah Mada (UGM), and subsequently at all agriculturally related faculties within institutions of higher agricultural education;
- d. A capability to provide advanced training for selected persons, preparing them to apply scientific principles to the discovery, development and dissemination of knowledge and to exercise leadership roles in agricultural education, research, public service and administration;

1	2	3	4	5	6	7	8	9	10	11	12

e. .... / .....



REPUBLIC OF INDONESIA  
NATIONAL DEVELOPMENT PLANNING AGENCY  
JAKARTA, INDONESIA

- 2 -

- e. An administrative system and qualified staff to make plans and to allocate resources for achieving the purposes of the project and ultimately the sector objective of more food and clothing production, better nutrition and distribution of income, and greater employment opportunities for the rural people;
- f. A complete development plan for the nation-wide system of higher agricultural education institutions.

The loan would finance the costs of advisory services, participant training including research, educational and scientific equipment including books and periodicals for libraries.

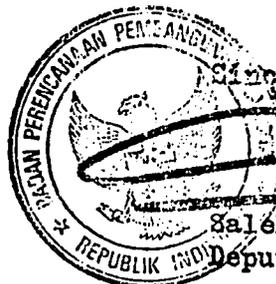
The GOI contribution to the project will be the provision of teaching and research facilities, maintenance and expansion of counterpart staff, public service and research funds.

As this is a continuation of the present Higher Agricultural Education Project that will be shifted from grant to loan financing, the major conditions relevant to its implementation are known and understood by both parties. A description of these conditions can be found in the programs and other documentation that describe Project No.497-11-660-190, Higher Agricultural Education.

Other sources of financing for the proposed phase II continuation of the above project are not available at this moment to the GOI nor anticipated in the near future. Funds currently available from other donor countries or from other agencies have been allocated to other priority projects within the framework of Repelita II.

It is hoped that the above information will be adequate for your consideration of this loan application.

Sincerely yours,



Saléh Afiff  
Deputy Chairman

cc : Department of Education  
and Culture.



LOAN AUTHORIZATION

A.I.D. Loan No.: \_\_\_\_\_  
 Provided under: Sec. 103: Food and Nutrition

Pursuant to the authority vested in the Administrator, Agency for International Development ("A.I.D.") by the Foreign Assistance Act of 1961, as amended, ("Act") and the delegations of authority issued thereunder, I hereby authorize the establishment of a Loan pursuant to Section 103 of said Act to the Government of the Republic of Indonesia ("Borrower") of not to exceed five million five hundred thousand United States dollars (\$5,500,000) to assist in financing the United States dollar and limited local currency costs of an agricultural development project Agricultural Education for Development. The Loan will be subject to the following terms and conditions:

1. Terms of Repayment and Interest Rate

Borrower shall repay the Loan to A.I.D. in United States dollars within forty (40) years from the date of the first disbursement under the Loan, including a grace period of not to exceed ten (10) years. Borrower shall pay to A.I.D. in United States dollars interest at the rate of two percent (2%) per annum during the grace period and three percent (3%) per annum thereafter on the outstanding disbursed balance of the Loan and on any due and unpaid interest accrued thereon.

2. Other Terms and Conditions

a. Except as A.I.D. may otherwise agree in writing:

(1) Goods and services financed under the Loan shall have their source and origin in Indonesia and countries included in A.I.D. Geographic Code 941;

(2) The Borrower shall agree, by condition precedent, covenant, or both, to provide on a timely basis its portion of project financing at levels, under arrangements and on timing acceptable to A.I.D.

b. The Loan shall be subject to such other terms and conditions as A.I.D. may deem advisable.

\_\_\_\_\_  
 Administrator

\_\_\_\_\_  
 Date

Project Description For Inclusion in Loan Agreement

The purpose of the project is to develop a pilot system of institutions for higher agricultural education at national and provincial levels responsive to the nation's needs for highly trained manpower, research, and public service in the agricultural sector, and capable of further independent growth to meet these needs on a continuing basis.

Eight universities (Institut Pertanian Bogor (IPB), University of Gajah Mada (UGM), and the Universities of Padjadjaran, Brawidjaja, Udayana, Hasanuddin, Andalas and Sumatra Utara) with agriculturally related faculties have been selected to receive assistance under the project which will consist of participant training, foreign technical assistance, and community support. Some participant training assistance will be extended to other universities in Indonesia with agriculturally related faculties, depending upon the availability of language and subject matter qualified candidates.

Of the eight universities, two, the Institut Pertanian Bogor and the University of Gajah Mada, have been selected to move to major status in the agricultural sciences and to carry a full range of programs. They will have the responsibility to create new programs of rural community service, of applied agricultural research, of academic instruction and of administration and to test their effectiveness and relevance and to install them in the pilot system.

By the end of the project the six additional participating universities will have installed systems for the first academic degree and will be sending their own staff members to IPB and UGM for advanced degrees. In turn, they will be receiving direct professional and support services from IPB and UGM. These include services on extension, community service, and applied research programs, consulting and advisory services on curriculum revision and laboratory and library development.

Thus each university in the pilot system will be producing first degree graduates in the new system who will enter the manpower pool and bring their special training to bear on agricultural development. A selected number will be able to take the Masters and Doctors degree at either IPB or UGM and enter the manpower pool for persons requiring that level or training. At each of the advanced degree levels, students will be admitted who are continuing students and those who have had experience working in agriculture or teaching in agricultural faculties in the other universities.

In addition selected staff members from other universities will have received advanced training in critical agricultural fields and returned to their universities to take leadership in development programs in their universities.

COSTING OF PROJECT OUTPUTS/INPUTS  
(In \$000 or equivalent)  
Project Paper

ANNEX I

X New  
Rev. # \_\_\_\_\_

Project # LOAN 197-0260

Title: Agricultural Education for Development

Project Inputs	Project Outputs						Total
	# 1	# 2	# 3	# 4	# 5	# 6	
<u>AID Appropriated</u>							
Technical Assistance #1	124	165	165	206	124	41	825
Participant Training #2	302	152	302	1,815	152	302	3,025
Commodities #3	220	110	330	110	220	110	1,100
Travel Support + Overhead #4	82	110	138	110	55	55	550
Sub-total:	728	537	935	2,241	551	508	5,500
<u>GOI Support</u>							
Technical Assistance #1	.5	.5	.5	.5	.5	.5	3
Participant Training #2	0	0	0	241	0	0	241
Commodities #3	273	136	408	136	273	136	1,362
Local Support #4	3.6	7.2	9	9	5.4	1.8	36
Facilities #5	473	315	630	945	157	630	3,150
Sub-total:	750.1	458.7	1,047.5	1,331.5	435.9	768.3	4,792
<b>T O T A L :</b>	<b>1,478.1</b>	<b>995.7</b>	<b>1,982.5</b>	<b>3,572.5</b>	<b>986.9</b>	<b>1,276.3</b>	<b>10,292</b>

Project Outputs:

- #1. University rural/community service program established and operating.
- #2. Applied agricultural research program institutionalized.
- #3. Efficient and adequate undergraduate instruction capabilities functioning.
- #4. Expanded and advance graduate degrees instruction capabilities functioning.
- #5. Effective university administrative systems fully operational and utilizing maximum resources.
- #6. Complete and implementation of development plan for nationwide integrated system of all Indonesian Higher Agricultural Education Institutions.

MUCIA WORK PLANS FOR PROJECT YEAR 1 APRIL 1975-31 MARCH 1976

I. PROJECT PURPOSE

The purpose and objective of this Project remain as stated in formal documents and papers of prior years including Operational Plans and Work Plans, the latest being those of the Joint Annual Review held February 6, 7, and 8 at Bogor.

In summary, these are to develop a system of institutions for higher agricultural education at national and provincial levels responsive to the nation's needs for higher trained manpower, research, and public service in the agricultural sector, and capable of further independent growth continually to meet these needs.

The implementation and support of Project activities to those ends continues to be carried out jointly among the Indonesian Consortium for Agricultural Sciences, the Midwest Universities Consortium for International Activities (MUCIA), the Government of Indonesia represented by the Directorate-General of Higher Education of the Department of Education and Culture, and the Government of the United States of America represented by the Agency for International Development (AID).

II. TERMS OF REFERENCE FOR 1975-76

The Annual Review of 6-8 February 1975 reaffirmed the basic Operational Plan of Document X for continuing program development in the areas of undergraduate instruction, graduate instruction, research and public service, and university administration and structure. Moreover, it endorsed the use of long- and short-term professional expertise, participant training, and commodities as instruments for bringing about the desired developments.

However, there were certain features associated with this particular Review which greatly influenced its deliberations and the recommendations that make up the Work Plans for 1975/76. They are identified as follows:

- a. The report, "Evaluation, MUCIA-AID-Indonesian Higher Agricultural Education Project" dated 14 December 1974 by Dr. R. R. Renne and Dr. K. L. Turk that concluded "the Project is on target in almost all of its basic aspects" and the "Project should be continued or extended for implementation in Phase II". It recommended a substantial increase in programming in almost every category.
- b. The "year of planning" that resulted in this past year in plans for Phase II of the development of the system of Higher Agricultural Education for Indonesia.
- c. The realization that the U.S. contribution to the funding of the program in 1975/76 would be less than the previous year and below the level expected in Document X.
- d. The realization that the U.S. contribution would become increasingly a smaller part of the total contribution to the development of Indonesian Higher Agricultural Education.
- e. The corollary increasingly larger role to be played by the Government of Indonesia and represented by the paying of all participants' cost of international travel by the GOI.
- f. The realization that inflation in both Indonesia and America has taken a heavy toll in reducing levels of program activity because of increased costs for travel, commodities, and shipping.
- g. The prospect that any loan from the World Bank for assisting higher agricultural education may be limited to certain national universities in the provinces outside Java.
- h. The recognition that it is urgent to have a long range plan for the development of the total system of higher agricultural education, and that
- i. Project funds needed for the realization of the desired system of higher agricultural education for Indonesia in the next five years (Phase II) are very large.

Thus, within the context outlined above of growing realization of the scope of the task ahead, the evolutionary change in project funding, and the immediate constraint of a U.S. contribution of \$1.31 million, the Work Plans for 1975/76 may be highlighted by the following:

- a. That the highest priority be accorded to staff development, for training overseas, for training in Indonesia, and for preparation for advanced degree training within Indonesia. It is expected that 89 persons would continue training overseas in 1975/76 and that 23 persons would be sent overseas for degree work. Non-degree training overseas would be phased out because opportunities for advanced study could be found within Indonesia. Moreover, if additional funds could be made available, an additional 5 persons might be sent overseas.
- b. That the level of program activity of both long-term and short-term U.S. staff advisors be progressively reduced to about one half of present levels. By the end of the Project year this would result in one long-term staff member each in Yogyakarta and Jakarta, and five short-term visiting staff, for a total of approximately 18 man-months overseas, of whom three are expected to be persons who have served in Indonesia earlier.
- c. That commodities have lower priority than staff development but that there is some minimum level of commodity support, namely \$75,000, that is essential for the fulfillment of targets in 1975/76.
- d. That final plans be drawn up as quickly as possible for development of the total system of higher agricultural education for the next five years.

Further it should be noted that the proposed level of program activities represents a slowing down of the rate of progress toward Project goals.

The reduction in long-term staff deprives IPB of the services of a professional person who could have contributed significantly to the program of the basic sciences and the development of the Graduate School. A microbiologist was to have been proposed for this appointment. Gadjah Mada is

equally deprived of the services of a long-term professional person. Both universities lose the services of professionals in the fields of remote sensing and photogrammetry, poultry diseases, physiology of field crops, veterinary microbiology, and fish nutrition. They join in the fields of rural electrification, tropical food processing, wood preservation and plant pathology that had been delayed previously for budget reasons.

Relatively the parts of the system of higher agricultural education that will feel the reduction the most are those national universities in the provinces (UNPROP) who have benefitted in the past from the services of short-term experts, library support, package courses, and similar assistance including degree and non-degree training for their qualified staff members.

III. A. INSTRUCTIONAL PROGRAMS - Four Year and Baccalaureate Development.

AIM: "To develop within Indonesian Universities the capability to efficiently train a large number of students to the B.Sc. or Bacc. level. These graduates should be prepared to participate effectively in Agri-business, Agricultural Production and in Agricultural Science." Document X.

At IPB to continue the development of the 4-year curriculum in terms of courses, teaching materials and laboratory equipment. To initiate the 4th year courses. To graduate approximately 120 students in the new curriculum. To experiment with the consolidation of basic courses from many faculties into a single basic course offering. To expend about Rp. 80 million for commodities in further undergraduate program development. To review the subject of elective courses for the final year and to conduct the second review of the new curriculum.

At UGM to continue experimentation with the 4-year curriculum in at least three faculties of the Agro-Komplex, to establish the credit system in the Agro-Komplex faculties in 1975/76, to bring about further consolidation of overlapping fields into single core courses, and to expand the KKN program.

At UNPROP to continue upgrading of curriculum through utilization of short-term expertise for short visits.

For all institutions, there will be conducted an evaluation of the new 4-year curriculum by the Department. Final decisions regarding implementation of the new curriculum will be made by the Minister of Education and Culture.

B. INSTRUCTIONAL PROGRAMS - Graduate Program Development.

AIM: "To develop within the system of Higher Agricultural Education in Indonesia the capability to provide advanced training for Indonesian students, preparing them for leadership roles in Agricultural Education, Research and Public Service". Document X.

At IPB with the establishment of the Graduate School in 1975 to continue its development. To continue nurturing the interim doctor program and to utilize the services of visiting professors to this end. To utilize the services of a visiting professor in the basic sciences to strengthen graduate program development. To work toward the integrated Graduate School in 1978. To initiate graduate programs for approximately 20 entering students in the selected areas of 1) Plant Science, 2) Soils Science, 3) Agricultural Economics, 4) Rural Sociology, 5) Agricultural Extension, 6) Poultry Science, and 7) Applied Statistics. To continue training of PhD candidates abroad so that they can return to participate in graduate program development.

At UGM to continue the upgrading of the Sarjana degree through utilizing the services of three short-term visiting professors and of returning staff members from overseas and continue upgrading of laboratories for graduate programs depending upon the availability of funds for commodities.

The Department of Education and Culture will continue to support staff upgrading programs, workshops and seminars for staff members from IPB, from UGM and from the UNPROP.

C. RESEARCH AND PUBLIC SERVICE

AIM: "To develop within the Indonesian Higher Agricultural Education system the capability for conducting effective programs of research and public service in support of Post-graduate teaching activities and in coordination with national goals". Document X.

At IPB to increase further the Rupiah funding for research and public service in an attempt to compensate for the loss of dollar support for commodities, to complete the institutionalization of extramural research funds, to expand the area of the experimental farm by another 60 hectares, to provide facilities and research support for the research of students in the Graduate School.

At UGM to purchase additional land for the experimental farm (Rp.102 million), to begin development of the Agricultural Training, Research and Development Station (ATRD), to purchase additional land for animal husbandry (Rp.12.5 million), to improve the coordination and administration of research, to expand the support of research, and to expand funding of program and facilities in the public service sector.

At selected UNPROP to earmark modest funds for commodities in support of research and public service projects and investigations by staff members.

D. UNIVERSITY ADMINISTRATION AND STRUCTURE

AIM: "To make the most effective and efficient use of staff and other resources in achieving the goals of the University". Document X.

At IPB to upgrade further the general services of the Central Data Processing Laboratory by the addition of peripheral equipment from extramural funds, to seek extramural funds for continuing acquisition of periodicals and books necessary for library development, and to begin construction of facilities for the print-shop.

At UGM to adopt in the Agro-Komplex a common scheduling of classes under a general University calendar, to implement

the credit system, to develop further the plan for commonality of basic courses among faculties, and to unify facilities and operations in library services, to develop a university computing center, and to make recommendations about strengthening and further consolidation of the Agro-Komplex.

E. ADMINISTRATION OF RESOURCES

AIM: "To specify the inputs to be employed in 1975/76 so that they might be employed effectively and efficiently in achieving the broad objectives of the project and the targets for 1975/76".

1. Participants.

To support the program of participant training overseas at an estimated level of 89 continuing persons. This is approximately the level proposed by the Annual Review of 1973/74 but is larger than the Document X estimate of 70 continuing persons.

To provide for a minimum of 21 new participants and up to 26 in number if financing can be provided. The allocation of participants among institutions was initially established at 15 to IPB, 10 to UGM and 3 to the UNPROP. However, since IPB had utilized 2 positions from the UNPROP in 1974/75, it is expected that the allocation may be 13 to IPB, 8 to UGM and 5 to the UNPROP if a level of 26 participants can be realized in 1975/76.

At a level of 21 participants, the expectation would be for an allocation of 10 to IPB, 8 to UGM, and 3 to the UNPROP with the understanding that these figures may change depending upon the availability of qualified applicants by institution.

Only participants who have a degree objective either in Indonesia or overseas will be accepted for training under the provision of travel funds by the GOI.

2. Long- and Short-Term Expertize.

Because of budget limitations there will be a drastic reduction in professional staff. At the end of the target

period, it is expected that only two persons will have full-time assignments in Indonesia--one person in Jakarta with responsibilities for both Jakarta and IPB operations and one person with responsibility for operations at UGM. The budgeted time of the Project Administrator will be reduced from two thirds to one half.

As with the professionals on long-term assignments, the numbers of persons and the time of those on short-term assignment will be drastically reduced from the level of 38 man months in 1974/75 to an expected 18 man months in 1975/76.

At IPB only Biochemistry and Poultry Science will have short-term support. Both contribute directly to undergraduate and graduate instructional program objectives.

At UGM the fields of Soil Geography/Fertility, Food Processing and Meat Science will be supported through short-term assignments.

It is expected that three persons will be returning personnel who had previously served in Indonesia.

The program of visitation of short-term experts to the UNPROP will be continued, but at a lower level of activity. It is proposed that the Soil scientist will visit both USU and UNLAM, the Meat scientist to visit Udayana, the Food Preservation scientist to UNSRI, the Poultry scientist to UNAND and the Biochemist to as many of the six Madya universities as possible, UNBRA, UNPAD, UNAND, USU, UNHAS and UDAYANA.

### 3. Commodities.

Depending upon the availability of funds, an amount of approximately \$85,000 is being earmarked for commodities of which the largest amount is now scheduled for UGM. At that institution there are still critical needs for upgrading facilities in the undergraduate instructional program as well as special needs for developing general services and support for the new Agricultural Training, Research and Development Station.

For the UNPROP a modest program will be continued of \$6,000 for library support to Madya universities (UNBRA, UNPAD, UNAND, USU, UNHAS and UDAYANA). Also the amount of \$4,000 is earmarked for commodities to support the applied research and special investigations in the public service program at selected faculties.

To insure the most effective use of resources a continuing evaluation and review will be conducted by representatives of IPB, UGM, and the Konsortium in consultation with MUCIA regarding allocations of participants and commodities.

ANNEX **K**

No. 9/AR/75

R E P O R T

EVALUATION TEAM

AID-MUCIA-INDONESIA

HIGHER AGRICULTURAL EDUCATION PROJECT

by

Roland R. Renne and Kenneth L. Turk

December 14, 1974

Konsortium Ilmu-Ilmu Pertanian

Februari 1975

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REPORT OF EVALUATION TEAM  
AID-MUCIA-INDONESIAN HIGHER AGRICULTURAL  
EDUCATION PROJECT

I. EVALUATION GUIDELINES

The objectives of the evaluation as given to the Team were:

1. To assess the contribution of the Higher Agricultural Education project from its inception in 1969 to the present in terms of the goals which were set forth for the project in the operational plans (Document X and the PROP) developed jointly by MUCIA, AID, and the Government of Indonesia (GOI); and,
2. To develop a set of recommendations concerning the future direction of Agricultural Education in Indonesia and AID's possible continued involvement in it.

In making its evaluation, the Team spent 14 days in Indonesia (December 1-15). Two days were utilized in briefings and orientations from USAID/Jakarta and MUCIA, and in discussions with officials of the Ministry of Education and Culture and the Indonesian Konsortium of Agriculture Sciences, Institut Pertanian Bogor (IPB) and three days at the Agro-Complex, University of Gadjah Mada, Yogyakarta. One day was spent driving through the agricultural region of Central and East Java from Yogyakarta to Malang, followed by a day to review the development program of a non-pembina institution, Brawijaya University.

The remainder of the time was spent in the preparation of this report, in discussions with representatives of the Ministry of Education and Culture, Ministry of Agriculture, the Rockefeller and Ford Foundations, and in conferences with officials of USAID/Jakarta and MUCIA.

II. PROGRESS OF HIGHER AGRICULTURAL EDUCATION PROJECT

1. Overall Appraisal of Accomplishments

The Team has assumed its evaluation should be based on the original objectives and goals as they were developed jointly by the GOI, MUCIA and AID. Further, the Team understands the original goals were established with the realization that it would take a minimum of ten years to attain most of them in the "further development of a system of institutions for

higher agricultural instructions and research adequate to meet the needs of the Nation". The success of institutional development projects of this type normally should be measured in decades, not in years. Also, the Team recognizes the fact that Phase I is only partially completed.

In the judgment of the Evaluation Team, the project is on target in almost all of its basic aspects and substantial progress has been made in the development of academic activities and leadership needed to increase the capability of Indonesian universities to fulfill their responsibilities in teaching, research, and public services. Of greatest significance are the accomplishments in staff development through participant training, improvement in the quality of under-graduate instruction and the development of the 4-year curriculum, plans for in-course graduate programs, improvements in university structure and administration, improved general services and library acquisitions, and strengthening of the provincial agricultural universities.

A key element that came through quite clearly is the enthusiasm, philosophy of service, and keen interest and deep concern for agricultural development on the part of the administrative leader at IPB and UGM. They appear to be genuinely committed to the development of higher quality educational and research institutions and for their role in meeting national goals of increased agricultural production, more equalization of income distribution in the agricultural sector, and creation of work opportunities.

A university will be no better than its library which is a key ingredient of any first-class institution of higher education and research. The location of the library at IPB is not conducive to optimum use by students and staff. The libraries at UGM showed better organization and administration and at both universities the libraries are lacking in scientific journals and periodicals.

While definite progress has been made in research and public service, the necessary linkages with the Ministry of Agriculture and other institutions have not yet been fully realized to provide substantial accomplishments with a definite impact on national agricultural development.

There appears to be substantial agreement that IPB is the highest quality agricultural university in Indonesia. It is recognized that IPB started the MUCIA-AID-GOI project with a stronger staff base as a result of almost ten years of collaboration with the University of Kentucky. Taking this into consideration and realizing that UGM started from a lower base, it is quite possible that the rate of development under the project has been more rapid at UGM

than at IPB. There is a real need at both institutions for more staff with the research methodology and analytical tools to conduct problem-solving research.

The momentum that has been started needs to be maintained and expanded if full returns are to be obtained on the investment that has been made. In addition, some shifts in emphasis will be desirable and are now being developed by the collaborating institutions and the Consortium of Agricultural Sciences.

## 2. Attainment of Goals

Some highlights of accomplishments in the major program areas are presented here:

### A. University Administration and Structure

Substantial progress has been made in reorganization that should result in marked improvements in efficiency and effectiveness of administration and hopefully more interaction between the faculties at IPB and UGM.

Directors have been appointed at IPB for the major functions and service which cut across the six faculties. These directors are responsible for (1) undergraduate instruction, (2) graduate studies, (3) research and public service, (4) administration, and (5) libraries.

The Agro-Complex of six faculties of UGM is now administered by a Dean and have coordinators (under-graduate instruction, graduate instruction, research and public service, library, and general services and commodities). This is a very important recent advance at UGM where it appears essential to have less autonomy among the faculties.

Short courses and seminars in university administration have contributed greatly to these progressive developments. Major inputs toward improved administration have been provided by the MUCIA coordinators at both campuses.

Strengthening of the general services, such as repair shops, central store rooms for scientific supplies and materials, and computing center, has taken place. These units are essential in the functioning of the undersities.

In reaching the national goals in agricultural development and building of institutions, the program activities of the Ford and Rockefeller Foundations, the Agricultural Development Council and other international agencies are also key ingredients in the development of human resources. Close coordination of programs and active communications between all of these agencies are essential.

## B. Instruction Programs - Undergraduate

The heart of any university is the undergraduate instructional program. Major attention has correctly been focused on improvement in instruction. A course system and curricula for a four-year degree program is being evaluated in December 1974. Plans are well developed for similar changes at UGM. Eventually the adoption of new curricula will result in a process of upgrading of undergraduate instruction.

Changing to the four-year program is not easy and may require more faculty time in relation to student members than was true under the previous system since it will involve scheduling of courses, examination, and advisory system. If better teaching is to be achieved, better equipped laboratories, more instructional materials, visual aids and the like will be necessary.

One of the problems in teaching that has not been solved is a shortage of textbooks and other instructional materials in the Indonesian language, written by Indonesians.

Some success has been attained with the development of package courses for upgrading of the non-pembina universities. These might well be expanded in the future.

## C. Instructional Programs - Graduate

Through various sources of support for the staff development program at IPB, there are presently 56 PhD's on the staff in the several faculties, but only about one-half of them are full time. There are only a limited number of staff with the doctorate at UGM. It is obvious, therefore, that plans for M.S. and PhD level have progressed much further at IPB.

The "pipeline" contains a good number of M.S. and PhD candidates abroad who will contribute to the capabilities of both universities to offer graduate level training in the future for leadership in agricultural education, research and extension.

Indications are they will have a Graduate School in operation offering M.S. work during the target year of 1976, and in-course doctorate in 1978. Graduate level courses have been identified and are being developed. Allocations of funds have been made for books and equipment necessary for graduate research. Progress has been made in the development of the research farm at Darmaga.

A tract of land now appears to be available at UGM for a teaching, demonstration, and research farm. Continued upgrading of staff, with larger numbers of PhD's the staff, with active

teaching, and research programs, are necessary before an in-course PhD education program can be initiated.

While some graduate students have been involved, two phases of the graduate education component of the MUCIA project may not be on target at the present time. These relate to the plan (1) for Indonesian PhD candidate to return to Indonesia for their thesis research in appropriate fields, and (2) for American graduate students from MUCIA universities to conduct their research in Indonesia. Increased number of graduate participants would help focus research on Indonesian agricultural problems and contribute to the development of the graduate education program at IPB.

Another phase apparently that has not been carried out as fully as planned is that of third country training at the M.S. and PhD levels. For example, several qualified graduate students could be sent to the University of the Philippines for what it costs to send one M.S. or PhD candidate to the United States, and the type of training might be more relevant to Indonesian agricultural development. Both the Ford and Rockefeller Foundations are now sending M.S. candidates to the University of the Philippines rather than to the United States.

#### D. Research and Public Service

Research and public service activities have been expanding steadily in all of the agricultural science faculties. IPB has exceeded its targets in rupiah allocations for research and approximately 40 projects were in operation last year, Ten of these received MUCIA commodity support. Rector Satari has been appointed head of the Central Research Institutes, Ministry of Agriculture, and Dr. Fred Rumawas is the leader of the National Rice Research Program.

At UGM over 90 research projects are reported as in progress during the past year with financial support from the Ministry of Education, Ministries of Agriculture and Public Works, and the Southeast Asian Center for Graduate Study and Research in Agriculture (SEARCA). The extent to which the results of the current research projects will contribute to national agricultural development is yet to be realized.

It is essential for the universities to establish their priorities in research and to develop and maintain formal linkages with the Ministry of Agriculture. The role of the universities in public service may need to be more clearly defined, especially as it applied to extension educational programs to transfer technology to small farmers and the rural community. Courses in extension education and in communications are apparently taught in departments of Socio-Economics. If included in the Agricultural curriculum these courses can be effective in training of personnel for extension activities.

Even though advances have been made in training of Indonesians for leadership roles in the agricultural sciences, the most critical need is still for additional trained man-power. There is a scarcity of highly-qualified researchers in all of the agricultural universities, including IPB and UGM, and the Ministry of Agriculture, as well as a lack of well-trained, experienced extension specialists. Priority must continue to be given, therefore, to the training of people for these positions if national agricultural goals are to be met.

E. Strengthening of Competence in MUCIA Universities in International Agriculture.

A second objective of the AID-MUCIA-GOI project is to strengthen the capacity of the cooperating American universities in tropical agriculture. All universities in the United States have much to learn about tropical agriculture and one can assume that each of the MUCIA universities has gained through its partnership and working relationship in Indonesia to date. These gains are in the development of international dimensions in subject areas, new courses in tropical agriculture, greater relevancy to graduate study and thesis research, better understanding and appreciation of the developing world and the global problems of food and population.

III. PROBLEMS AND CONSTRAINTS

1. Brief evaluation did not reveal any major problems in the operation of the program to date between MUCIA and the Indonesian universities.
2. Program review by Institute Pertanian Bogor (IPB) and University of Gadjah Mada (UGM) enumerated several constraints. Attention is focused on certain ones that seem most significant. These include:
  - (1) Terms of office of University administrators do not permit continuity of improvement processes (every two or four years new organizational arrangements are required). This reduces effectiveness of overall performance.
  - (2) Maintenance, operational, and development budgets are below needs; rupiah funds are inadequate for research, including doctoral thesis research.
  - (3) Inadequate staff salary levels contribute to lower quality of performance and to the low numbers of full time teaching and research staff.

- (4) Library staffs are inadequate and current scientific journals are limited or lacking. This is a serious situation contributing to reduced performance in instruction, research, and public service.
  - (5) Delivery of equipment and supplies is slow and occasionally damages occur in transit.
  - (6) There is a definite need for a clear definition of responsibilities for research and extension between Universities and Ministries.
  - (7) Lead time required to select appropriate counterparts, establish schedules, and arrange transportation is a constraint in the implementation of programs of MUCIA short-term staff at non-pembina institutions, particularly so if the universities are not in session.
  - (8) Meeting TOEFL test requirements for English language required for participant trainees has created problems in upgrading staff through graduate study at U.S. universities. Sustained efforts and expansion of English preparation programs at the universities are essential to assure an adequate pool of qualified staff members for selection in priority fields or subject matter disciplines.
3. Other possible constraints include the following:
- (a) Failure of Indonesian universities to give visiting professors (both long- and short-term) and American graduate students courtesy faculty appointments which would facilitate their maximum effectiveness in institutional development.
  - (b) Lack of actual involvement in teaching of graduate-level courses by visiting long- and short-term staff.
  - (c) A relatively small number of long-term visiting staff in relation to short-term staff.
  - (d) Delays in utilization of American graduate students to conduct thesis research in Indonesia and other contributions they could make reduce overall effectiveness of assistance programs.
  - (e) Lack of funds for inclusion of wife and family of participant trainees who go abroad on long-term doctorate programs often result in not securing the maximum results desired. (Experience has proved that including wife and family is a good investment in the success of a lengthy graduate study program).

- (f) Insufficient emphasis has been given to the desirability of the MUCIA field staff learning the Indonesian language.
- (g) Inadequate laboratories and equipment for good teaching in many departments.

Many of the problems associated with the above constraints will require more time for adequate solution than the first five years (Phase I) of the MUCIA assistance program. Current trends indicate that some if not all of the more critical problems could probably be eliminated or significantly reduced in a second five year period (Phase II) of MUCIA assistance.

#### IV. QUALITY AND EFFECTIVENESS OF MUCIA'S ROLE IN ATTAINMENT OF GOALS

##### 1. Overall Planning and Management

The operational plan was carefully devised and well-conceived with collaborative inputs from MUCIA, USAID and the host institutions. Quite properly, major emphasis was to be given to the development of human resources for leadership. For the most part this has been carried out in the implementation of the program.

As indicated in the original operational plan, it was meant to be sufficiently flexible so that inputs appropriate at the beginning in kind and amount, may not be appropriate at a later time. In the judgment of the Evaluation Team, consideration might well be given at this time, as operational plan Phase II (Document Y) is presently being drawn up, to some changes in the administrative set up. It would appear the responsibilities of the Project Administrator (Floating Director) might well be accomplished by the International Programs Office of the University of Wisconsin, or one of the other cooperative MUCIA universities. Considering the numbers of field MUCIA personnel, the administrative structure appears to be larger than necessary.

Consideration also might be given to replacement of the coordinator at IPB with a long-term visiting professor who could become actively involved in teaching and research at the graduate level.

##### 2. Long-Term and Short-Term MUCIA Personnel in Indonesia

There are many advantages and disadvantages that can be advanced for both long- and short-term visiting professors. Both have contributed greatly to this project. It is recognized the effectiveness of any individual, long- or short-term, is dependent upon many factors, but the Team feels the project would have been served better with a larger proportion of

long-term professors. Note the term visiting professor is used advisedly since members of the Team feel that it reflects a truly colleague-colleague working relationship better than the term "adviser".

The Administrative leaders consulted at UGM stated they would favor more long-term visiting professors and few short-term personnel. The Team concurs fully with this and suggests that more rapid attainment of goals at UGM over the next six to ten years would be reached with the utilization of three to five long-term visiting professors in carefully selected priority disciplines. Additional long-term personnel, also could be most effective in the further development of IPB, especially in establishment and functioning of the Graduate School, in development of graduate level courses, and in expansion of adaptive, problem solving research. Further, long-term visiting professors could direct the thesis research for both returning Indonesian PhD candidates and American students who do their thesis research in Indonesia.

The Team recognizes fully the need for some short-term visiting professors, especially for return assignment of those who have been most successful previously. It is suggested they stay long enough to get actively involved with counterparts in both teaching and research, or in research and extension. Teaching of graduate level courses would be effective in the staff development program.

### 3. Role in Overseas Training

Perhaps the greatest contribution of the MUCIA program to date is in overseas training of capable, young Indonesian scientists. This aspect of the program has been exceptionally well planned and implemented with selection of candidates to strengthen priority areas, at both the two pembina universities and selected non-pembina provincial agricultural universities.

As mentioned above, the program could be improved for selected PhD candidates returning to Indonesia for their research, by utilizing more American graduate students, and by utilization of the resources of third country universities.

There will continue to be a need for non-degree training in some areas and for certain types of program activities. This is particularly true in the transition phase as the Indonesian higher education shifts from overseas training to more reliance on newly-developed indigenous programs.

MUCIA has not given emphasis to the social science disciplines in its training activities, since this area has been supported by the Ford Foundation, Rockefeller Foundation and the Agricultural Development Council. There is need, however, for coordination with the programs of the Foundations and for full communication on all aspects of the MUCIA Project.

Many comments were received on the problems of the language examination for participant trainees. The English language programs that have been initiated should be helpful in this regard.

#### 4. Role in Acquisition of Commodities

There is every indication this phase of the program has been handled effectively and efficiently in supplying critical supplies, equipment, and educational materials. Emphasis also has properly been given to upgrading of the libraries, especially in the purchase of texts and reference books. More attention might have been given to the acquisition of scientific journals and periodicals.

#### 5. Contributions to Non-Pembina Universities

Primary efforts to support the development of provincial universities have been through the Konsortium in staff and materials upgrading activities. Package courses apparently have been successful, as have other short courses and training programs, and student work service programs. Some short-term visiting professors have worked directly with some of these universities.

Plans are now being formulated (Operational Plan, Phase II) for expansion of outreach activities for further development of inter-university assistance. Selected non-pembina faculties will be more directly involved in program activities. A broader system will be developed with the establishment of three levels of assistance and responsibility: (1) Level 1, Faculties of IPB and UGM; (2) Level 2, selected faculties on basis of their capability and willingness to accept the responsibility for collaboration with Level 1 Faculties in providing assistance to the remaining universities; (3) Level 3, Faculties will concentrate on development of effective teaching programs to provide 4-year graduates to fill positions in public service, agri-business, vocational agriculture, and to continue in advanced degree studies at Level 1 and 2 universities.

This shift in emphasis will involve programs which directly support rural development and being an increased awareness of rural problems to the university communities.

Preliminary plans for World Bank support in the further development of five or six regional agricultural universities in the outer islands, if implemented, would complement very effectively the outreach activities presently being planned by the Higher Agricultural Education project.

## 6. IDA Concept

The Institutional Development Agreement was carefully worked out by a high-level group of people from the National Association of State Universities and Land-Grant Colleges (NASULGC), and AID/Washington to provide improved operating arrangements between AID and the universities in overseas technical assistance projects. It was to provide grant-type funding rather than the traditional contract arrangement, with increased flexibility for universities to manage the flow of resources in response to project needs.

It appears the following elements of the IDA have been demonstrated in the MUCIA project:

- (a) Comprehensive planning of goals, lines of activity and total resources was accomplished in the beginning by all parties.
- (b) Annual joint reviews and evaluation of results and attainment of goals have been conducted.
- (c) Institutional capacity to induce and sustain changes in Indonesia has been developed.
- (d) Ability to provide qualified personnel for project activities.

The Team is not in a position to judge the extent to which flexibility that was planned in the IDA concept in management of operational details and finances has been successful in eliminating some of the red tape, delays, and frustrations that often have been encountered in traditional contract arrangements in the past. Also, it is recognized that in many cases country AID Missions were not fully informed on the development of the new institutional arrangement.

In brief, available evidence indicates the IDA concept is sound and should be applied in other selected institutional building programs.

## V. RECOMMENDATIONS

Based on its observations and information that has been supplied, the Evaluation Team offers the following recommendations for consideration by AID, MUCIA, and GOI in the operation of the Higher Agricultural Education project:

1. The AID-MUCIA-Indonesian Higher Agricultural Education project should be continued or extended for implementation in Phase II.
  - (a) Much progress has been made in the attainment of goals that were established, as summarized in this report and in the annual reviews that have been held, for Phase I which is yet to be completed.
  - (b) Continuing of momentum that has been initiated is essential in order to capitalize on investments made to date.
  - (c) The project was originally designed as a 10-year project and this amount of time, or more, will be require to meet the objectives.
  - (d) The need for increased and continuing involvement of the agricultural universities to help achieve national goals requires the implementation of Phase II - a second five-year period.
2. A gradual shift in emphasis should be made to give higher priorities to applied research and public service to meet the needs of Indonesian agriculture. (This is included in the preliminary plans for Phase II).
  - (a) Continuing to use current mechanisms of the Agricultural Konsortium and inter-university assistance program to develop the provincial agricultural universities.
  - (b) Expanding the application of the outreach program.
  - (c) Development of responsibilities in all agricultural universities to assist in getting improved technology into the hands of small farmers.
3. Increased emphasis might be given by MUCIA to the areas of socio-economics and communications in the Higher Agricultural Education program.
  - (a) Support from Ford, Rockefeller, and ADC is recognized, but more inputs from MUCIA would be desirable to increase the rate of progress.

- (b) Additional courses should be developed for agricultural students in extension education, communication arts, and other socio-economics fields.
4. Indonesian universities should give faculty status to visiting professors through appointments to the faculties for a truly mutual, collaborative effort.
  5. The term "advisor" should be changed to "visiting professor" which indicates more accurately the associated working basis. (This has already been done in the Operational Plan, Phase II).
  6. The staff development program has been one of the highlights of Phase I and must be continued, but increased emphasis during Phase II might well be given to:
    - (a) Plans for a larger number of Indonesian graduate students to return to Indonesia to do their thesis research.
    - (b) Use of a third country, such as the Philippines, for graduate studies, fully coordinated with the Rockefeller and Ford Foundation programs.
    - (c) Utilization of more advanced American PhD students for their thesis research in Indonesia.
    - (d) Use of American graduate students as teaching and research assistants on the staff of the host universities.
  7. Consideration should be given to the assignment of more long-term visiting professors to the program, especially at Gadjah Mada University but some also at IPB.
    - (a) These professors would add greatly in the development of philosophies of the Indonesian staff, in further development of the four-year curriculum and graduate studies and in expansion and implementation of applied research and public service programs.
    - (b) To improve the effectiveness of short term visiting professors, their terms of assignment should be long enough to permit teaching of a course and involvement in research with staff and graduate students. In selection of short-termers, emphasis should be given to return assignments in priority areas for those who have been most successful.
    - (c) The concept of "repeating" short-term visiting professors (advisors) as developed under the IDA has,

admittedly, not undergone sufficient time for testing. In the ensuing years every effort should be made to develop the use of "long-term, short-termers" and a careful plan of evaluation designed to validate the effectiveness of this concept in terms of (1) attraction of highly qualified MUCIA staff at mid-career, (2) repeated contributions to university development problems in priority areas, and (3) the building of continuing relationships of exchange and communication among Indonesian and MUCIA universities.

8. Consideration might well be given by MUCIA to a re-organization of its administrative structure for the project.
  - (a) The duties and responsibilities of the "Floating Director" and his office staff could be assumed by an International Agricultural Programs Office at one of the MUCIA Universities.
  - (b) Shifting responsibilities of coordinator to include visiting professor responsibilities in instruction and research.
9. Funds to include a participant's wife and children (up to a point) on fellowship assignments of more than one year for graduate studies abroad should be provided. This would be in accordance with policies of the Ford and Rockefeller Foundations and ADC.

### ACKNOWLEDGEMENTS

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## ANNEX L

ESTIMATED NUMBER OF PARTICIPANTS RETURNED AND IN TRAINING BY 31 MARCH 1976

UNIVERSITY	F a c u l t i e s    b y    F i e l d						TOTAL
	AGRIC.	AN.HUSB.	VET.MED.	FORESTRY	AG. TECH.	BIOL/FISH.	
IPB							
Returned	9	4	8	6	3	5	35
In Training	17	5	7	7	10	4	30
UGM							
Returned	3	3	6	3	4	2	21
In Training	9	5	7	3	2	3	29
UNPROP							
Returned	4	-	-	-	-	-	4
In Training	16	2	-	1	1	-	20
GRAND TOTALS	58	19	28	20	20	14	159

Notes: (1) 57 Participants not included above have been sent for various lengths of time for non-degree programs.

(2) 79 Participants will be continuing in the program as of March 31, 1976.

TABLE IIA

## COST BREAKDOWN OF AID CONTRIBUTION

## I. Technical Assistance Costs for Project

## A. Short-term Visitors -- Assume annual salary of \$ 30,000.

Monthly salary	\$2500 x 3.5 months	\$ 8,750
Fringe Benefits @ 20 percent	500 x 3.5 months	1,750
Indirect Costs @ 37 percent	925 x 3.5 months	3,237
Overseas Diff. @ 25 percent	625 x 3 months	1,875
Intn'l travel		2,200
Predeparture expenses		<u>150</u>
		\$17,962

Short-term advisors (23 for 160.5 man months)

$$23 \times \$ 17,900 = \$ 412,500$$

## B. Long-term Project Director in Indonesia -- Assume annual salary of \$ 30,000

Salary	\$ 30,000
Fringe benefits (20%)	6,000
Indirect costs (37%)	11,000
Overseas differential (25%)	<u>7,500</u>
	\$ 54,500

$$\$ 54,500 \times 5 \text{ years} = \$ 272,500$$

Travel, HHE, etc.	<u>45,000</u>
	\$ 317,500

## C. One-third time Project Representative in U.S. -- Assume annual salary of \$ 30,000

Salary (at 1/3 rate)	\$ 10,000
Fringe benefits (20 % at 1/3 rate)	2,000
Indirect costs (69 % at 1/3 rate)	<u>6,900</u>
	\$ 18,900

$$\$ 18,900 \times 5 \text{ years} = \$ 95,000$$

Short-term Advisors	\$ 412,500
Long-term Director	317,500
U.S. Representative	<u>95,000</u>
Total TA costs	\$ 825,000

## II. Participant Training Costs for Project

Subsistence (\$ 300 x 12)	\$ 3,600
Fees and tuition	3,525
Book allowance	300
Professional society dues	100
Research support	1,000
Special programming and travel	<u>300</u>
	\$ 8,825 per year

One time costs	
Round trip air fare	\$ 2,200
Thesis	<u>300</u>
	\$ 2,500

Cost for Completed PhD	
\$ 8825 x 4 years	\$ 35,300
One time costs	<u>2,500</u>
	\$ 37,800

End-of-Project Status - 80 PhD or equivalents

$$80 \times \$ 37,800 = \$ 3,024,000$$

## III. Commodities

Books - 1,000 books each for two universities at \$ 20 per book for each of five years. 100 books each year for six universities.	\$ 260,000
Instructional equipment - For 10 package courses at six universities at \$ 6,000 per course for equipment and supplies	360,000
Research equipment at two universities - \$65,000 per year for five years	325,000
Experiment station and demonstration farm equipment	<u>155,000</u>
Total Commodities	\$1,100,000

## IV. Other Support Costs and Overhead

Administrative Assistant @ \$ 15,000/year	\$ 75,000
Training Advisor @ \$ 18,000/year	90,000
Secretary @ \$ 9,000/year	45,000
Stenographer-clerk typist @ \$,500/year	40,000
Fringe benefits @ 20 percent (\$ 250,000 x 20 %)	50,000
Overhead ( \$ 250,000 x 69 %)	172,500
Office supplies, travel, postage, etc.	<u>77,500</u>
	\$ 550,000