

PD-AAW-468
XD

PROJECT COMPLETION REPORT
GRADUATE AGRICULTURE SCHOOL PROJECT
497-0290

Introduction

The Graduate Agriculture School Project (497-0290) was a Title XII project designed in 1979 in the collaborative mode. It was completed in July 1986. Project activities were grouped into three broad, but inter-related areas: planning and administration, graduate programs development and construction. The last of these is reported on separately, and included as an attachment to this report.

Project Purpose

The purpose of the project was to assist the Bogor Institute of Agriculture (IPB) to strengthen its capacity for campus and program planning, and in the further development of a graduate education program in the agriculture sciences, including the strengthening of related research and outreach activities. Project activities were to be implemented consistent with national efforts to vitalize rural development, to promote non-destructive uses of natural resources, and to benefit the rural poor.

End of Project Status

1. Inputs

The project provided 364 person-months of long and short term consultants, 42.3 person-years of long term degree training, 60 person-months of non-degree training and 66.5 person-months of short term training. The prime contractor, University of Wisconsin, provided the technical assistance, managed the participant training component and procured \$727,000 worth of commodities consisting of library equipment and books, laboratory instruments, and microcomputers. (Ref: Final Report, IPB-Wisconsin Graduate Agriculture Project.)

Another major input of this project was the construction of an Information Resources Center and an Environmental Studies Center located at IPB's new campus at Darmaga, including the purchase of commodities required to equip these centers. (See Attachment 1, Construction Completion Report.)

2. Project Implementation

The project started in 1979 with an original PACD of July, 1984. However, because of delays in the contracting for the construction of the Information Resources Center and Environmental Studies Center (IRC and ESC), the project was extended for two years until July 31, 1986. (See Attachment 1 for details.) As described in detail in the final report submitted by the University of Wisconsin, the main task of the TA contractor was to assist IPB in strengthening its planning processes and managerial capacities, including enhancing the quality of advanced degree training at IPB and assisting with its staff development. These activities were performed essentially as planned

and completed on schedule. However, due primarily to the construction delays, the UW contract was extended to allow the IRC and ESC equipment to be purchased by UW on a schedule appropriate to the completion of building activities.

Another US contractor, Perkins & Will International, was responsible under a host-country contract for the design of the campus master plan and the design and construction supervision of the IRC and ESC. To assist in carrying out these tasks, Perkins & Will entered into a sub contract with an Indonesian engineering company, P.T. Sangkurlang. The actual implementation of the construction was done by the Indonesian construction company, P.T. Wijaya Karya, through a separate host-country contract with the Directorate General of Higher Education of the Ministry of Education and Culture.

Although the construction was completed in January, 1986, the Centers did not become operational until mid 1986 because of problems involving power and water supply, furnishings and minor deficiencies in the civil works. Presently, however, the IRC and ESC are operating, although not yet at full capacity.

With the extension of the project completion date, and by using funds saved in the construction costs, the project was able during the final year to support IPB in implementing four activities which complemented the efforts and achievements of University of Wisconsin. These activities were a Watershed Development Research Project, Rural Communications Program Development, Remote Sensing Data Analysis Workshops and Strengthening Operations of the IRC. Each of these activities was completed according to plan.

3. Project Outputs

Project Outputs are summarized as follows:

- 8 IPB staff earned PhD degrees from the U.S.
- 8 IPB staff earned MS/MA degrees from the U.S.
- 45 IPB staff received S/T technical training in the U.S.
- New graduate programs were developed in Community Nutrition and Family Resources, Watershed Development, Rural Communications.
- Existing graduate programs were strengthening in the fields of management and conservation of natural resources and environment, basic sciences, rural home and family studies.
- An Academic Master Plan to the year 2000 was developed and approved.
- Planning and administrative functions (registration, student records, course syllabi, etc) were strengthened at both the central and faculty levels, with several operations installed on micro-computer based systems.

- A Master Campus Plan was designed and approved.
- An Information Resources Center and Environmental Studies Center were built and equipped.
- Staff capacities of the Research Center and Public Service Center were strengthened.
- Physical and academic planning models and guidelines were developed for use throughout the higher education system.

Lessons Learned

1. The Graduate Agriculture School project was a good example of an activity which was able to focus on "second generation" institutional development problems. Following on several predecessor efforts, some financed by AID, which primarily worked to expand IPB's base of qualified staff, GAS endeavored to fill in the gaps through further but targeted staff training and program development, and also to improve its management (planning and administration) systems. That these efforts were successful is demonstrated by the lead IPB has taken in the country in helping other universities develop, in both program and planning areas. There is a lesson to be learned from the value of such AID assistance to relatively mature institutions, and the role these institutions can play in developing others.

2. The mode of TA utilization was somewhat unusual under GAS, but again appropriate to the stage of development of IPB. L/T TA was quite limited and chosen with extreme care, according to specific needs and appropriate backgrounds. S/T TA was used extensively, with many repeat visits to follow through a task or to engage in new ones. The Chief-of-Party had significant previous Indonesian and IPB experience and was able to assume a role much greater than the specifics of his SOW. He essentially became the personal advisor to the rector and to much of the university administration. He was trusted and his advice respected. His style was totally collaborative, and in accordance with Indonesian cultural norms. The one other L/T TA was also effective, but his scope was more technical program focused. This combination of limited L/T TA supported by extensive S/T TA, identified and called upon (at times repeatedly) as needed proved to be a very effective way to meet the needs for outside technical assistance. The University of Wisconsin and AID can both be complimented for allowing this degree of flexibility in the TA component of the contract.

3. Flexibility also characterized activities toward the end of GAS. When the project was extended due to construction delays, and since funds remained in the project, AID and IPB seized this opportunity to carry out activities, which while building upon the program development efforts of University of Wisconsin, would be carried out in its absence. Thus programs were further strengthened (Watershed Management, Remote Sensing Data Analysis, Rural Communications, IRC programs development) and IPB gained experience in implementing donor financed activities on its own. Flexibility in the programming and funding of activities really paid off.

4. The project applied much effort to improving the planning functions of IPB -- both physical and academic. These functions are generally quite weak throughout the higher education system in Indonesia, and IPB was in the

right stage in its own development to tackle in a systematic way its planning needs. Not only was this done successfully under assistance from GAS, but the spread effect to other universities has also been significant. IPB uses its new academic and campus plans with pride and force, both with the Ministry of Education and with donor agencies who must follow the plan's guidelines when extending assistance to IPB.

5. University of Wisconsin efforts at IPB illustrate how the benefits of the AID financed assistance can extend beyond the period of the project. Relationships have been established between both universities which will continue for years to come. Correspondence is being exchanged. University of Wisconsin is shipping excess texts to IPB and staff from either institution when visiting each other's country for other business often "stop by" to renew acquaintances or follow-up on a professional matter. It is impossible for AID to assess the extent or monitor the quality of such continuing inter-university linkages. But it is evident that they exist and are continuing basically on the goodwill established during the period of AID assistance.

6. Concerning the construction component, the contract mechanism used is a good example of how USAID can effectively monitor and control a project using the guidelines of AID Handbook 11. Where there are significant differences in procurement procedures between the GOI and the USG, it is essential that Project Officers be familiar with both systems to avoid implementation delays.

7. The construction of the IRC and ESC facilities was contracted as one complete package with a unit cost about twice that of the Bappenas' allowable cost per square meter of building area. Using this contract approach, the construction was completed to the satisfaction of USAID, with no problems which could not be overcome. The alternative arrangement of using the Fixed Amount Reimbursement (FAR) system, in which the project is prefinanced by the GOI, is usually divided into several phases and limited to Bappenas' allowable cost per square meter of building. FAR has consistently resulted in many difficulties, involving delays and unacceptable quality of work. Usually the Bappenas allowable cost per square meter of building is not adequate and the annual funds provided are often not sufficient compared to the funds needed to accomplish what was planned.

Financial Status

The total amount obligated under this project was \$7,500,000 consisting of \$2,170,000 grant and \$5,330,000 loan. For implementing the technical assistance, participant training and commodity procurement components, the University of Wisconsin expended \$1,699,689.83 in grant and \$1,702,668.10 in loan. The total amount committed for the construction of the IRC and ESC was \$3,170,000. However, due to the increase of the dollar value against the rupiah, an amount of \$281,819 was re-committed and de-rearmarked toward the end of the project. The project was then able to use some of this saved money to continue support IPB in its implementation of several activities related to the graduate and other programs which Wisconsin worked to establish.

Upon completion of the project, approximately \$253,000 (loan and grant) remained unspent and were de-obligated.

CONSTRUCTION COMPLETION REPORT

AID PROJECT No. : 497-0290
 AID LOAN No. : 497-T-060

PROJECT TITLE : GRADUATE AGRICULTURAL SCHOOL PROJECT

Date of Agreement : August 15, 1979

Initial- PACD : July 31, 1984

Revised-PACD : July 31, 1986

USAID Budget Funds :

Type : Grant
 Amount : US \$ 468,000.00 (Campus Planning)
 Type : Loan
 Amount : US \$ 61,267.00 (Campus Planning)
 US \$ 3,270,400.00 (Construction)

GOI Budget Funds : US \$ 1,740,660.54

A&E Contractor :

Name : PERKINS & WILLS INTERNATIONAL (PWI), Chicago &
 PT "SANGKURANG", Bandung

Contract Amount: PWI : US Dollars 529,267.00 (USAID)
 Sangkuriang: US Dollars 209,432.87 (GOI)

Construction Contractor:

Name : PT "WIJAYA KARYA", Jakarta

Contract Amount: US Dollars 3,270,400.00 (USAID)
 US Dollars 1,531,227.67 (GOI)

Waivers :

- : - AID/W approved government construction company participation in the bidding process.
- : - USAID/I waived source & origin of the Private Automatic Branch Exchange (PABX) equipment: CGCT-France.

I. Planned Outputs of the Construction Activities

- a. Master Planning for INSTITUT PERTANIAN BOGOR (IPB) Campus in Darmaga, Bogor to provide educational facilities for 20,000 students in the year 2000. The buildings should have Indonesian architectural characteristics. The total area of the land for the campus is approx. 250 hectares. In 1979, when the master planning started, the number of students was approx. 6000 students, and the facilities were scattered over five sites in Bogor city and one site on Darmaga campus.
- b. Construction of the Information Resources Center (IRC) and Environmental Studies Center (ESC) buildings. The facilities to become two research centers of IPB, and to function as resources for the Graduate School Program of IPB, the ESC for specialization in Conservation of Natural Resources and Environment Studies and the IRC for having available modern, well-stocked information resource center.

The planned outputs were achieved. The campus master plans, following the last requirement of the DGHE (Directorate General of Higher Education), can accommodate 25,000 students in the year 2000, and was completed satisfactorily. The construction of the IRC and ESC buildings, with a total gross area of approx. 10,000 sq.m., was completed satisfactorily. The construction quality was excellent and the buildings were finished within the planned budget.

The other elements funded by USAID under this project were:

1. Technical assistance to assist IPB in its development of the Graduate School program and IPB's research program.
2. Commodities: Laboratory equipment for ESC facility, Audio-visual equipment for IRC facility, etc.
3. Participant Training: Short-term, non-degree and degree (M.Sc. and Ph.D.) training.

II. Development of the Campus Master Plan and the Design Engineering for IRC and ESC Buildings

25 US A&E firms submitted FORMS 254 and 255 Expression of Interest to AID. In February 1980, a RFP for services in preparing the campus master planning, the design engineering for IRC and ESC buildings, and the construction supervision for the two buildings, was sent to the four prequalified firms. On April 1980, all four US firms, in collaboration with the only Indonesian A&E firm, submitted their technical and cost proposals. The evaluation of the technical proposals ranked PERKINS & WILL, INT. (PWI) as the highest.

A host country contract was awarded to PWI & Sangkuriang on August 28, 1980. PWI & Sangkuriang started their work in September 1980. With the exception of the preparation of the boiler plate of the IFB, the A&E firms made good progress and were not significantly behind the time schedule. After reviews and comments by IPB, DGHE and USAID Education and PTE (Power, Transport and Engineering) Offices at various stages, the final campus master plan, space allocations, schematic designs, and outline specifications for IRC and ESC were completed by PWI and the design engineering for the IRC and ESC by Sangkuriang in August 1981. The final reports and the models prepared by PWI were sent from the US to IPB/DGHE.

The detailed design engineering for IRC and ESC buildings were submitted and reviewed by USAID-PTE in January 1982. Most of our comments were accepted by PT Sangkuriang on May 1982; however, there were five issues not accepted, since it was felt that they would change the main design concept from PWI, and PWI did not agree to the changes.

Three issues related to the effects of high annual rainfall in the Darmaga area:

1. the "traditional" red-clay tile for IRC roofs would leak badly.
2. insufficient gutters and downspouts for the roofs. The downspouts should also be extended close to the ground level to avoid a lot of water flowing to surrounding areas which' combined with severe wind would wet the pedestrian mall.
3. open stair-cases would become wet and slippery during and after rains.

A joint-visit by USAID-PTE and IPB to PT NILA, the biggest and most famous "traditional" red-tile factory in Bandung re-confirmed the opinion that the tiles were not uniform in size and quality. If they were used in the IRC building, which had a large and complicated shaped roof, it would leak heavily. Following the meeting in Bandung in the Sangkuriang office, the drawings were changed without any major change to the architectural views of the IRC building. PWI did not agree with these changes.

A fourth issue related to the central air conditioning systems for the IRC and ESC buildings. USAID-PTE was concerned with the high monthly electrical bills that would have to be paid by IPB when the facilities were in operation. However, it was believed that IPB could pay its bills (oil revenues in 1980/1981 were high), so the USAID/Education Office decided that the IRC should have a full air conditioning system to control temperature and humidity, consequently the airconditioning system was deleted from the ESC building only.

A fifth issue was the addition of emergency exits with remote controlled electromagnetic locks that could be opened from the central panel. PWI agreed to this suggestion, but the system was not used due to the objection of IPB that their books would be lost easily.

III. Tendering Process for the IRC and ESC Buildings

Pre-qualification of the contractors were announced in the CBD; and in Indonesian newspapers on May 27-28, 1982. Three US firms, one US/Indonesian firm and 60 Indonesian firms responded. According to the evaluation made by the Tender Committee, there were 15 firms qualified, and 49 firms disqualified. In the disqualified list were three US firms, whereas in the qualified list there was one Japanese/Indonesian firm. USAID sent a letter to IPB stating that the three US firms should be included, since their financial, technical, administrative capabilities and experience, although outside Indonesia, were good and sufficient for this bidding, whereas the Japanese/Indonesian firm did not meet the requirement of being from AID Code 941, US or Indonesian firms eligible to participate in the bidding process. DGHE instructed IPB/Tender Committee to revise the results of the pre-qualifications. The tender committee revised the list, by adding three US firms and deleting the Japanese Indonesian firm.

PT Sangkuriang completed the boiler plate for the IFB in December 1981. About one and a half years were needed to make the IFB acceptable to USAID. The following were the main reasons for the delay:

1. USAID wanted the IFB to be in conformity with AID Handbook 11, whereas IPB/DGHE wanted to comply with Kepres 14 & 18. Both regulations had several major contradictions.
2. Processing the waiver through AID/W for Indonesian government construction companies to participate in the bidding process. Six government construction companies were pre-qualified, and USAID had not informed the GOI about this regulation. This regulation was issued and received by USAID when the process of the pre-qualifications were almost finished.
3. Pre-qualification issue as mentioned above.

After much discussion between IPB/DGHE and USAID, on September 1, 1983, USAID approved the IFB for IRC and ESC Buildings.

With 20 months construction time needed, the project could not be completed within the original PACD, July 31, 1984. USAID requested an extension to the PACD, which AID/W granted for two years, from July 31, 1984 to July 31, 1986.

Bid opening was on October 20, 1983, with eight bidders submitting cost proposals, but one bidder withdrew and one bidder was rejected due to late submission. The cost proposals varied from the lowest PT Wijaya Karya Rp. 4,720,000,000.00 to the highest Rp. 8,200,000,000.00 by PT Hutama Karya. The cost estimate prepared by PT Sangkuriang was about Rp. 5,800,000,000.00. All cost proposals submitted were from Indonesian firms, and there was no bids submitted by the American firms. The Bid Evaluation Report was prepared by the Tender Committee. Prior to submission to DGHE, MOE (Ministry of Education and Culture) and SEKNEG (Sekretariat Negara/"State Secretary Office"), the report was first discussed with USAID-PRO/DES, and consequently the USAID requirement for selection of the lowest responsive bid was stated clearly in the report.

Based on GOI regulations, the tender committee recommended the three bids with the lowest cost, and asked SEKNEG to decide who would be awarded the contract. SEKNEG decided PT Wijaya Karya, the lowest responsive bid, as the contractor for the IRC and ESC buildings.

IV. Construction of the IRC and ESC Buildings

Notice to Proceed was issued on March 14, 1984. The construction started in March 1984 and was scheduled to be finished within 20 months, i.e., October 18, 1985.

The construction quality was good, and the construction work done by PT Wijaya Karya and the construction supervisory work performed by PT Sangkuriang were good. However, several problems arose after the construction started:

1. Delay in signing the contract for the construction works.
2. The supervision contract could not be signed, due to the Manajemen Konsultan ("MK") issue and the arrangement made by IPB/DGHE for the supervision contract was not accepted by Public Works. This issue stopped all payments to the contractor and almost brought the project to a standstill.

USAID-PRO/DES insisted on the importance of the contract between PT Wijaya Karya and IPB/DGHE. As the result, on May 25, 1984 the contract between PT Wijaya Karya and IPB/DGHE was signed. Public Works also approved the contract. USAID committed the funds for the contract.

In a letter submitted to USAID, DGHE stated that they could not solve the supervision contract due to the MK issue, and asked USAID assistance to solve this problem. Through a joint SK between Public Works and Bappenas, issued in 1981 and re-issued every year, all construction works above Rp. 500 millions should use a MK system. This SK does not explicitly describe in detail the application; it only states that the MK firm's job is to manage all works relating to construction, i.e., to coordinate the planning, coordinate the design, coordinate the manpower schedule, coordinate the material schedule, coordinate the equipment schedule, and coordinate the time schedule. The idea of this MK derived from what in the US is known as Construction Management. USAID-PRO/DES met with Mr. Mario Sabrang, Director of Building Order, Ministry of Public Works, and insisted that a strict application of the MK would slow-down or even stop the construction works on site, whereas USAID felt the application of Construction Management was not necessary for the project with a size of IRC and ESC buildings. Mr. Sabrang explained that application of MK in Indonesia could be very flexible, and it did not require a Consultant Management as applied in the US. USAID-PRO/DES arranged a meeting between Mr. Sabrang and the DGHE/IPB team to solve the problem. In the meeting, Mr. Sabrang expressed the opinion that the MK issue was not a problem. He informed IPB/DGHE that the supervision contract was not signed because Public Works had still some objections to the supervision contract arranged between IPB and PT Sangkuriang. After several meetings between IPB/DGHE and Public Works, the supervision contract issue was solved.

The progress on site was kept in the good shape until it reached approx. 25 % progress in December 1984. The first imported equipment arrived in Tanjung Priok Harbor in December 1984, the other equipment following several months later. However, the duty exemption process was very slow, causing delays, because the equipment could not be installed, pending release from the Customs Office. After numerous discussions/meetings between IPB, DGHE and PT Wijaya Karya, without any progress on the duty exemption, the contractor was requested by IPB to send a letter to the Minister of Finance, explaining the problems on the duty exemption process. Finally, the Ministry of Finance re-affirmed the duty exemption for the imported equipment for IRC and ESC, and instructed the Customs Office to finalize the duty exemption.

Construction could not be completed by October 18, 1985 as planned due to the above problems. PT Wijaya Karya requested an extension of the initial completion date to February 10, 1986, but IPB granted only to January 18, 1986. With a low cost contract, plus imported equipment held at the harbor, and several documents not completed (missing Bill of Lading, etc.) there were some delays in Wijaya Karya payments. PT Wijaya Karya had to pay additional interest, which later could not be reimbursed. PT Wijaya Karya realized that the IRC and ESC buildings would be completed at a loss. When the project was about 80 % completed, after the manager of the Headquarters Division of PT Wijaya Karya was replaced by a new manager, the progress on site almost stopped. Even the Project Manager and the Site Engineer of PT Wijaya Karya were not on site. IPB tried to restore proper site control by PT Wijaya Karya, but they did not respond. Again, IPB requested USAID assistance, and again USAID-PRO/DES had to push PT Wijaya Karya into action. After numerous efforts to motivate PT Wijaya Karya, the construction was completed without any additional cost, or formal contract extensions.

On January 15, 1987, USAID accepted the IRC and ESC buildings as completed. Some remaining work was identified for the maintenance period which extended to May 15, 1987. During the inspection, USAID-PRO/DES suggested five additional small works to improve the operation of the IRC and ESC buildings: additional panic door/emergency exits from the library reading rooms, safety wire screens on the railings of the ESC building, direct access to the fire pump storage, addition of cameras and TV monitors for the IRC closed circuit television security systems, and closing the voids in the ceilings. IPB/DGHE agreed to this suggestion, and the work was done with the cost of US Dollars. 23,242.00.

When the IRC and ESC buildings were almost completed, several tests of the equipment were necessary to ensure that all systems were in good condition, however, the 1500 KVA power supply and the water treatment plant to supply water to the facilities were not ready. As planned, the funds for these works would be provided 100% by the GOI. However, due to late approval from Bappenas (oil revenues decreased sharply in 1986), the funds were delayed, and when available, a re-tender was for the treatment plant necessary, because all cost proposals from the bidders were above the cost estimate. As a result, IPB could only provide 30 KVA power supply, and a small water supply from the existing well for IRC and ESC facilities. Several systems, such as, the central air conditioning system could not be tested. If equipment were faulty, the guarantee from the supplier would no longer be effective. After several discussions

between USAID-PPS/DES and PT Wijaya Karya, a temporary power supply was provided by PT Wijaya Karya without any additional cost to the GOI or USAID and the A/C system was able to be tested.

On August 25, USAID released the 10% retention money, since all systems had tested satisfactorily. Only the balancing test of the air conditioning systems could not be done, because this had to wait until the IRC has been fully utilized (September, 1986).

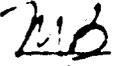
Although the project had some difficulties as mentioned above, no additional funds were needed, either from GOI or USAID, to complete the IRC and ESC buildings. During the life of project, the GOI provided an additional Rp. 200,636,000.00 to PT Wijaya Karya as a result of the application of a new tax system (value added tax: 10 % of total cost compared with the previous sales tax 2 1/2 % of total cost).

Due to a gradual but steady decline in the value of the rupiah against the US dollar, US Dollars 281,819.00 were able to be de-committed from the PT Wijaya Karya contract, and were subsequently used in part to support four new sub-activities of the Graduate Program: water-shed development, remote sensing and rural communication and strengthening the operations of IRC through additional commodities and training.

V. Lessons Learned

1. This is a good example, how USAID can effectively monitor and control a project using AID Handbook 11.
2. Where there are significant differences in procurement procedures between the GOI and the USG, it is essential that Project Officers be familiar with both systems.
3. The construction of the IRC and ESC facilities was contracted as one complete package with a unit cost about twice that of the Bappenas' allowable cost per square meter of building area. Using this contract approach, the construction was completed to the satisfaction of USAID, with no problems which could not be overcome. The alternative arrangement of using the Fixed Amount Reimbursement (FAR) system, in which the project is pre-financed by the GOI, is usually divided into several phases and limited to Bappenas' allowable cost per square meter of building. FAR has consistently resulted in many difficulties, involving delays and unacceptable quality of work. Usually the Bappenas allowable cost per square meter of building is not adequate and the annual funds provided are often not sufficient compared to the funds needed to accomplish what was planned.

Clearances :

1. EHR, C. Bonner 
2. PPS, M. Bonner  5/19/87
3. FIN, R. McClure 
4. Deputy Director 