PD-RAA-309
ISN-516 84
PD-RAA-309-A

A.I.D. EVALUATION SUMMARY PART I

(BEFORE FILLING OUT THIS FORM, READ THE ATTACHED INSTRUCTIONS)

IDENTIFICATION DATA

A. REPORTING A.I.D. UNIT: USAID/Sri Lanka (Mission or AID/W Office)

(ES#)

B. WAS EVALUATION SCHEDULED IN CURRENT FY ANNUAL EVALUATION PLAN? yes ☒ slipped ☐ ad hoc ☐

Eval. Plan Submission Date: FY ___ Q ___

C. EVALUATION TIMING: Interim ☐ final ☒ ex post ☐ other ☐

D. ACTIVITY OR ACTIVITIES EVALUATED (List the following information for project(s) or program(s) evaluated; If not applicable, list title and date of the evaluation report)

Project #	Project/Program Title (or title & date of evaluation report)	First PROAG or equivalent (FY)	Most recent PACD (mo/yr)	Planned LOP Cost ('000)	Amount Obligated to Date ('000)
383-0049	Final Evaluation of the Agricultural Education Development Project, USAID, Sri Lanka June 1987.	August 31, 1978	Sept. 30,1986	$7,500	$7,500

ACTIONS

E. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR Action(s) Required	Name of officer responsible for Action	Date Action to be Completed
Receipt of the final voucher for administrative approval and subsequent Controller action.	USAID/Project Officer	November, 1987
B. Decide whether this project should be a candidate for an impact evaluation.	USAID/Mission Management	November, 1987
C. Decide whether a modest level of funding to sustain EOP level of capability of both the Postgraduate Institute of Agriculture (PGIA) and the Faculty of Agriculture (FA) is to be approved.	USAID/Mission Management	November, 1987
D. Decide whether action should be taken to recover the full educational cost of the 14 participants lost to the program, under the relevant clauses of the Project Grant Agreement of August 31, 1978.	USAID/Mission Management	December, 1987

(Attach extra sheet if necessary)

APPROVALS

F. DATE OF MISSION OR AID/W OFFICE REVIEW OF EVALUATION: mo 10 day 28 yr 87

G. APPROVALS OF EVALUATION SUMMARY AND ACTION DECISIONS:

	Project/Program Officer	Representative of Borrower/Grantee	Evaluation Officer	Mission or AID/W Office Director
Signature				
Typed Name	Sithy Z. Thaha	Y.D.A. Senenayake	Jan Emmert	Peter J. Bloom
Date:		12/01/88	12/31/87	1/27/87

ABSTRACT

H. EVALUATION ABSTRACT (do not exceed the space provided)

The immediate purpose of this project was to couble the indigenous capacity to train B.Sc. graduates and triple the capacity to train postgraduate students by 1985. This final evaluation was conducted by an independent Consultant, Dr. J.O. Dunbar. Information was gathered by review of USAID files and personal interviews. The evaluation purpose was to examine the extent to which the project had met its purpose and objectives and to determine the sustainability of project benefits.

The major findings and conclusions are:

* The project design had a sound mix of inputs and outputs, and the project was implemented well.
* The project did, as planned, vastly increase the capability of the Postgraduate Institute of Agriculture (PGIA) and the Faculty of Agriculture (FA) to do research and train postgraduates, as well as undergraduates. However, the planned tripling the numbers of postgraduate degrees granted before faculty returned from training abroad was unrealistic.
* Specific inputs provided to facilitate institutional development were; (1) training provided to 39 junior faculty members (23 PhD, 2 M.Sc, & 14 lost to the program) and short, non-degree technical training for 5 PGIA/FA staff members; (2) long and short term technical assistance (3) Procurement of books, periodicals, microfiche volumes and equipment.
* Three budgetary problems were identified; lack of research funding, inadequate funds for maintainance of library and scientific equipment and poor salaries paid to the Faculty staff will hinder the sustenance of project benefits.
* The project's largest problem was that 14 participants did not return to their faculty posts after training, due to the ethnic conflict which erupted while they were abroad.

The evaluator made the following recommendations:

* That an impact evaluation of the AED project be conducted 5 years after EOP to determine (1) the institutional contribution of the PGIA and FA, (2) problems and needs of these institutions for the future.
* That USAID support further strengthening of the PGIA and FA to (1) ensure that the indigenous capacity to train M.Phil's and Ph.D's continues to develop and (2) ensure support for the FA to do quality research and teaching.
* That USAID, working through BIFAD, assist the FA to further develop university relationships with the Pennsylvania State University, Virginia Polytechnic Institute & State University and Texas A & M University.
* That USAID include an input of technician training in all projects which provide scientific equipment.
* That, to reduce the attrition rate USAID provide only subject matter training in the US for postgraduate students and support for their thesis research in Sri Lanka, with the degree granted by the University of Peradeniya.

The evaluator noted the following "lessons":

* It is important to make a careful estimate of the time required to develop institutional capacity before quantifying a schedule of institutional outputs.
* Projects which involve much PhD training and institution building should be at least 10 years long.
* Training participants in one discipline at several universities can strengthen academic departments.
* Permitting participants to purchase equipment from their research allowance made computers available to the institution.
* Low cost technician training resulted in effective use of scientific equipment.

COSTS

I. EVALUATION COSTS

1. Evaluation Team Name	Affiliation	Contract Number OR TDY Person Days	Contract Cost OR TDY Cost (US$)	Source of Funds
Dr. J.O. Dunbar	Devres, Inc.	PDC-0085-I-00-6095-00 (31 person days)	27,243	PRJ

2. Mission/Office Professional Staff Person-Days (estimate) 10

3. Borrower/Grantee Professional Staff Person-Days (estimate) 7

A.I.D. EVALUATION SUMMARY PART II

J. SUMMARY OF EVALUATION FINDINGS, CONCLUSIONS AND RECOMMENDATIONS (Try not to exceed the 3 pages provided)
Address the following items:

* Purpose of activity(ies) evaluated
* Purpose of evaluation and Methodology used
* Findings and conclusions (relate to questions)
* Principal recommendations
* Lessons learned

Mission or Office: USAID/Sri Lanka Date this summary prepared: August 19, 1987

Title and Date of Full Evaluation Report: Final Evaluation of the Agricultural Education Development Project (383-0049) June, 1987.

Brief Project Description:

The Project purpose was "to double the annual number of indigenously trained B.Sc graduates and triple the number of indigenously trained post graduates by 1985". The means to do this was expansion of the capacity of the Postgraduate Institute of Agriculture (PGIA) and Faculty of Agriculture (FA) of the University of Peradeniya (U of P). These institutions share a common faculty and facilities for postgraduate education.

The fundamental need to be met was development of an institutionalized, sustainable capacity to indigenously train Agricultural scientists with M.Sc and Ph.D degrees for improvement of Sri Lankan agriculture.

Outputs of the project were: a Ph.D trained faculty, adequate curriculum, state of the art equipment, a modern library and on-going research and outreach programs. Inputs provided by USAID were: Training 23 Ph.D's, 2 M.Sc's and 5 technicians, 240.47 person months of technical assistance, 9440 library books, 63 periodicals, 952 microfiche volumes, and $1,143,796 for equipment. Sri Lanka provided additional staff and buildings.

Purpose and Method of Evaluation:

To examine the extent to which the project met its purposes and objectives, the appropriateness of the project design, the performance of the main parties (contractor, US universities, USAID, Postgraduate Institute of Agriculture) in managing the project and dealing with the participant attrition problem and analyzing institutional capacity for sustaining project benefits.

The evaluation was conducted in May-June 1987. Information was gathered by review of USAID files, personal interviews with the Director (PGIA), Dean (FA), former Dean (FA), Departmental Heads (FA), returned participants, USAID officials involved in the project, and former Chief-of-Party.

Findings and Conclusions:

1. Before 1975, the FA, U of P was a small, poorly equipped scholarly staff graduating 100 B.Sc's each year. The PGIA was created by the UGC in 1975 to train M.Sc (one year. no thesis), Master of Philosophy (with Research) and Ph.D students for the 13 Ministries associated with Agriculture. PGIA was a seperate part of the University funded directly by the UGC.

2. Basic project design was sound and logical. Outputs and inputs were all necessary, high quality and in correct proportion. Ph.D training consisted of coursework in the US, thesis research in Sri Lanka and analysis in the US. Implementation measures were superior. The contractor (Academy for Educational Development) performed well. Monitoring data was detailed and complete for all inputs. Universities selected (Penn. State. VPI & SU, Texas A&M) were highly qualified and performed well. Administration by PGIA/FA was superior.

3. 9 of 39 faculty selected for Ph.D training were women.

4. Inputs, except for tissue culture equipment (waiting for space) are being used effectively. New Ph.D's have been promoted. They are doing research, training M.Phil and Ph.D's, writing publications, and establishing linkages with various Ministries. One is head of the Agricultural Engineering Department.

5. AED project inputs greatly strengthened the institutional capacity of both the FA and PGIA. The FA has been declared a "Center of Excellence" by IDRC (Canada). The PGIA is still a very fragile institution with no actual faculty nor a significant research budget of its own. It is still heavily dependent on the FA and the 13 Ministries.

6. Without further donor inputs, the library will deteriorate, equipment will become obsolete, and faculty will almost surely become less productive. Regular funding of research expendables is totally inadequate.

7. The administrative capability of both FA/PGIA is very high quality and adequate with good organization and excellent involvement of faculty.

8. With half the people of Sri Lanka engaged in agriculture and increasing population pressure on the land, education of the scientific manpower base becomes more important every year. The PGIA is the only indigenous institution in Sri Lanka for training Ph.D's to replenish and expand this base.

9. The problem of attrition reduced the impact of this project by at least 30%. Eleven of the trainees never returned to Sri Lanka. Three others returned, then left. More attrition will take place if returnees can find foreign jobs, pay their bond (about $2,500) and leave. Salaries of the returnees is only about $1,500 a year.

10. Budget support for FA and PGIA is weak due to large increases in the budget for national security.

11. A proposal has been advanced to form these two institutions into an Agricultural University like those in India, however, no such decision appears imminent.

12. The Ministry of Higher Education has a sabbatic leave policy which pays transportation expenses to a foreign country for both the faculty member and spouse. Top US scientists have funds to support people like this as visiting scholars.

<u>Recommendations:</u>

1. That an impact evaluation of the AED project be conducted 5 years after the End of Project (EOP) to determine (1) the institutional contribution of the PGIA and FA (2) problems and needs of these institutions for the future.

2. That USAID support further strengthening of the PGIA and FA to (1) ensure that the indigenous capacity to train M.Phil's and Ph.D's needed for the improvement of Agriculture continues to develop and (2) ensure necessary support for the faculty to do quality research and teaching.

3. That USAID, working through BIFAD, assist the Faculty of Agriculture to further develop university relationships with the Penn. State, VPI & SU and Texas A&M. This would include some support for members of the faculty who go to the US on their sabbatic leave.

4. That USAID include an input of training for technicians in all projects which provide scientific equipment.

5. That, to reduce the attrition rate USAID provide only subject matter training in the US for postgraduate students and support their thesis research in Sri Lanka, with the degree granted by the University of Peradeniya.

Lessons learned:

1. In future projects, make a careful estimate of the length of time required to develop institutional capacity before quantifying a schedule of outputs. In this project, a substantial increase in post-graduate degrees granted was scheduled before participant faculty members began returning from their Ph.D. training, that is, before the instituitional capacity existed, to increase the number of students.

2. Future projects like AED, which involve large amounts of Ph.D training and institution building, should be at least 10 years in length to increase efficiency of implementation.

3. Training various people in one discipline at several universities provides a broader knowledge base among people in their departments when they return home, than training all at the same university. It avoids the tendency to make a department a carbon copy of the one in which they were trained.

4. Permitting students to use savings from their thesis research allowance to buy equipment resulted in purchase of items, such as computers, which are now of high value to their work in the home institution.

5. Given the liberal sabbatic leave policy at the University of Peradeniya, small amounts of support would enable faculty to go to US universities as visiting scholars with some of the best scientists and agricultural programs in the world.

6. Issue: Some modification is needed in the Sri Lankan institutional arrangement for indigenous training of scientific manpower needs for agriculture. One issue is whether to establish a separate agricultural university along the lines of the Indian Agriculture Universities. The present framework of a Faculty of Agriculture within the traditional university system may not be sufficiently flexible, restricts diversified training, limits research opportunities, and lacks a mechanism for collaborating with Ministries dealing with Agricultural Research and Development. The Faculty of Agriculture feels that it would be better if it was elevated either to the status of a separate campus or a separate University College.

K. ATTACHMENTS (List attachments submitted with this Evaluation Summary; always attach copy of full evaluation report, even if one was submitted earlier)

1. Final Evaluation of the Agricultural Education Development Project (383-0049) - June, 1987.

L. COMMENTS BY MISSION, AID/W OFFICE AND BORROWER/GRANTEE

The final evaluation of the Agricultural Education Development Project was on target and it accurately documented the achievements and the institutional growth of the FA and the PGIA. It addressed all the issues laid down in the scope of work but failed to analyze the institutional strength of the PGIA, with respect to the quality of work that can be undertaken by a batch of freshly trained, rather inexperienced, young group of faculty staff. Mission does not under estimate their capabilities but one can clearly see that at least for a period of 2 to 3 years these young staff members should be helped and guided probably with assistance that visiting professors from the Consortium of Universities could provide. This, in addition to helping the freshly trained postgraduates would also help in the implementation of the Memorandum of Understanding signed by the Consortium Universities the PGIA and the FA.

FINAL EVALUATION

AGRICULTURAL EDUCATION DEVELOPMENT PROJECT
(Number 383-0049)

USAID/SRI LANKA

United States Agency for International Development

Colombo, Sri Lanka

June 1987

By

DEVRES,INC
2426 Ontario Road NW
Washington DC 20009

FINAL EVALUATION

AGRICULTURAL EDUCATION DEVELOPMENT
(Project No. 383 - 0049)

USAID Sri Lanka

June 1987

By John O Dunbar

The Evaluation was done under IQC PDC - 0085 - I - 00 - 6095 - 00, Delivery Order No.05 between Devres Inc and The U. S. Agency for International Development.

This report was prepared by an independent Consultant. It does not necessarily represent the views of The United States Agency for International Development of The Government of Sri Lanka.

DEVRES, INC., 2426 ONTARIO ST, NW,
WASHINGTON DC 20009
Phone (202) 7979610, Telex 440184

BASIC PROJECT IDENTIFICATION SHEET

1. Country: Sri Lanka

2. Project Title: Agricultural Education Development

3. Project Number: 383-0049 (Grant)

4. Project Dates:

   a. First Project Agreement: August 31, 1978

   b. Final Obligation: March 15, 1982

   c. Project Activity Completion Date (PACD): September 30, 1986

5. Project Funding:

   a. AID Bilateral Funding (Grant): $7.5 million

   b. Other Major Donors *

   c. Host Country Counterpart Funds: $5.4 million

6. Mode of Implementation: AID direct contract with Academy for Educational Development. Inc.

7. Project Design: The Government of Sri Lanka and USAID/SL with assistance from contracted technical assistance team.

8. Responsible Mission Officials:

   a. Mission Director(s): T Arndt, S J Littlefield, F Correl, R C Chase

   b. Project Officers : C Antholt, T Wilson, R Kriegel, J Bonner, S Z Thaha

9. Previous Evaluation: Mid Term Evaluation in Deceember 1982

10. Cost of Present Evaluation: $ 27,243

* omitted because dollar value difficult to obtain.

EXECUTIVE SUMMARY

Initiating Mission : USAID Colombo, Sri Lanka

Title : "Final Evaluation of Agricultural Education Project (383-0049), USAID, Sri Lanka, June 1987.

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Table of Contents

	Project Identification Face Sheet	i
	Executive Summary	ii
	Table of Contents	
	Glossary	
I	INTRODUCTION	1
II	OVERVIEW	3
III	FINDINGS	5
	Achievement of Goals	5
	Achievement of Project Purpose	5
	Project Purpose Formulation	6
	Appropriateness of Outputs/Inputs	7
	Adequacy of Outputs	7
	Quality of Outputs	8
	Adequacy of Inputs	9
	Increase in Institutional Strength	10
	Effective Use of Inputs	11
	Implementation Measures	13
	The Universities Selected	14
	Project Design	15
	Implementation Strategy	17
	Validity of Assumption	18
	Data for Monitoring	19
	Sustainability of Benefits	20
	Importance of Agricultural Education	21
	Women and Development	22
	Implementation Problems	23
	The Attrition Problem	24
	Lessons Learned	25
	Issues	26
IV	CONCLUSIONS AND RECOMMENDATIONS	28
	Accomplishment of Goals and Purpose	28
	Correctness of Project Formulation	29
	Appropriate Adequate & Quality, Outputs/Inputs	29
	Increase in Institutional Strength	30
	Effective Utilization of Inputs	30
	Appropriateness of Implementation Measures	31
	Appropriateness of Universities Selected	32
	Project Design	33
	Validity of Assumption	34
	Adequacy of Data for Monitoring	34
	Sustainability of Benefits	35
	Importance of Agricultural Education	36
	Women and Development	37
	Implementation Problems	38
	The Attrition Problem	38
	Lessons Learned	39
	Issues	40

ANNEXES

A. Logical Framework 41
B. Scope of Work 46
C. Evaluation Methodology 51
D. Questionaire for Returnees 52
E. Questionaire for Department Heads 53
F. Questionaire for Administrators 56
G. Itinerary and Schedule of Activities 59
H. Particulars of Non Returnees 61
I. Training Level of Agricultural Personnel, 1985 63
J. Reports and Data reviewed for the Evaluation 65
K. List of People Interviewed 66
L. Acknowledgements 68

Glossary

AED Project	-	The Agricultural Education Development Project
BSc	-	Bachelor of Science
CAED	-	The Consortium for International Agricultural Education Development Academy for Educational Development, Penn State University, Texas A&M University and Virginia TechUniversity.
Contractor	-	Academy for Educational Development
COP	-	Contractor's Chief of Party in Sri Lanka
Dodangolla	-	FA experimental farm located about 12 miles from campus
EOP	-	End of Project
FA	-	Faculty of Agriculture of the University of Peradeniya
GSL	-	Government of Sri Lanka
M.I.	-	First year campus at Maha Illuppallama
Mawela	-	Animal Science field laboratory/farm, near campus
Meewatura	-	Agricultural Engineering experimental farm, near campus
MPhil	-	Master's degree with thesis, PGIA
MSc	-	Master of Science degree awarded by a U.S. University
MSc, Uof P	-	Masters degree (coursework only)
PACD	-	Project Activity Completion Date
PG	-	Post Graduate
PGIA	-	Postgraduate Institute of Agriculture
PhD	-	Doctor of Philosophy degree
PI	-	Plan of Implementation
PP	-	Project Paper
PMs	-	Person months
Sub-Contractor	-	Penn State, Texas A&M, VPI
T.A.	-	Technical Assistance
UGC	-	University Grants Commission
U of P	-	The University of Peradeniya
USAID	-	US Agency for International Development
Major Professor	-	Major US advisor of a participant trainee

INTRODUCTION

The Faculty of Agriculture (FA) of the University of Peradeniya was established in 1948. By 1978 it had an academic staff of about 45. In 1986, it had 125, about 40 of which had PhD degrees. In 1978 it had about 400 students. In 1986, it was approaching 800, its present capacity.

First year students are taught basic science and practical agriculture at Maha Illupalama, 72 km from Peradeniya. The other 3 years are taught on the campus, with a small degree of specialization in the 4th year.

The FA has 7 departments - Crop Science, Animal Science, Agricultural Biology, Soil Science, Food Science, Agricultural Engineering and Agricultural Economics and Extension. Laboratories with modern scientific equipment are available for staff research and teaching, both undergraduate and postgraduate. A library with 25,000 books is shared with the PGIA. Farm facilities are available at Dodangolla, 12 miles from the campus, (for crops) and at Mawela and Meewatura near the campus.

The Faculty of Agriculture is closely linked to the Post Graduate Institute of Agriculture. Senior staff service the PGIA by teaching Postgraduate couses and supervising PG students' research.

Funding for the FA comes from the University Grants Commission through the U of P. The University is under the Ministry of Higher Education.

The Post Graduate Institute of Agriculture (PGIA) was created in 1975 and attached to the University. Its mission is to provide postgraduate education for the staff of various research institutions and advisory services of the 13 ministries associated with agriculture and for teachers. An inventory of scientific manpower in agriculture in Sri Lanka in 1985 found only 44 PhD's in research and advisory services and 55 in teaching, plus 40 in administration - a total of 99. In 1986 there were 189 registered students in postgraduate programs - 51 for MSC, 110 for MPhil, 18 for PhD and 10 casual and provisional.

Formal instruction is required in all Post Graduate Programs. Thesis researchis done either on campus or at a relevant research institution in Sri Lanka.

Funding for the PGIA comes directly from the University Grants Commission. It is extremely limited and is used mostly for administration and extra stipends for FA staff to teach courses. The PGIA has no faculty of its own for teaching and research, depending mostly on the FA and Department of Agriculture (just across the road in Peradeniya).

It should be noted that the fundemental need which gave rise to the PGIA is for a Sri Lankan institution to enable Sri Lanka to train its own Masters of Philosophy (The US MSc) and PhD's. It is far more economical to train them in Sri Lanka than to send them to foreign countries. An adequate scientific manpower base is the foundation upon which future improvement of agricultural resource productivity in Sri Lanka will be built.

OVERVIEW

The Government of Sri Lanka requested this Agricultural Education Development project in 1977 to help implement its plan to develop the scientific manpower base needed for improvement of agriculture.

It had decided to do this through the Faculty of Agriculture and Post Graduate Institute of Agriculture of the University of Peradeniya. However, neither of these had the adequate trained faculty, buildings, scientific equipment, library, graduate level curriculum or research program - or budget - necesary for this training.

In 1978, a grant of 6 million US dollars (later increased to 7.5 million) was made to the Government of Sri Lanka to assist in this development. The life of the project was 7 years, later extended to 8. It was implemented through a host country contract administered by the Post Graduate Institute of Agriculture. The contractor selected was the Academy for Educational Development in consortium with Penn State, Texas A and M and Virginia Tech Universities.

The immediate purpose of the project was to double the indigenous capacity to train BSc graduates and triple the capacity to train post graduate students. to the PhD level. To fullfil this purpose the project helped train faculty to the PhD level, improve equipment, enhance the library, upgrade the curriculum and expand the research program. Specific inputs provided were: training 37 PhD's and 2 MSc's, 247 person months of technical assistance; 9440 library books; 63 periodicals; 952 microfiche volumes; 1,143,796 dollars for equipment and short term training for 5 technicians.

The PhD training included coursework in the US, thesis data gathering in Sri Lanka and data analysis and write up in the US.

One major and serious problem emerged - 14 of the trainees either did not return to Sri Lanka or left soon after they did return. This was a result of civil strife and it caused at least a 30% reduction in the total benefits of the project.

The project itself was excellent. It was well designed, well implemented and well administered. The administrating agency (PGIA), contractor and universities selected were highly qualified and did their work well.

The project did, as planned, vastly increase the capability of the Faculty of Agriculture and Post Graduate Institute of Agriculture to do research and train Postgraduates, as well as undergraduate students. They have been declared an international center of excellence and recommended for training of foreign students. Opportunities are available equally to men and women at these two institutions.

At the end of the project three basic problems remained, all budgetary. They were:

1. There is practically no budget for research funding available to the Faculty of Agriculture. Without this, much of the potential productivity of the trained manpower will be lost.

2. With high demands on the Government of Sri Lanka to provide internal security against terrorism, there is little likelihood that adequate funding will be available to keep the scientific equipment and library up to date. Deterioration of these resources will seriously reduce both the quantity and quality of research that can be done.

3. Faculty salaries are very low. The newly returned PhD's are earning less than 1,500 US Dollars a year.

If nothing is done to improve the 1986 funding levels of support for salaries, equipment, library and expendables, staff of the Faculty of Agriculture will likely become less than optimally productive. Their interest and enthusiasm will deteriorate and many will leave the university for better opportunity elsewhere.

One issue which has been raised by Sri Lankans is the creation of a separate Agricultural University, along the line of the State Agricultural Universities in India. This is being debated and discussed at the highest levels.

FINDINGS

Achievement of Goals

The stated goals of this project were to:

1) increase domestic food production
2) extend employment opportunities and
3) improve the small farmers' standard of living

Rice is the staple food for the country. Production increased 62% from 1972 - 74 to 1982 - 84. Imports dropped from 304,000 tons in 1974 to only 50,000 tons in 1984.

But in terms of human nutrition 43% of the people in rural areas, which include 75% of the population, had inadequate intake of calories. This compares with 50% in urban areas and 33% in the estate sector.

The population, is growing about 1.8% per year. To feed this increase in number of people and improve diets will require at least a 50% increase in food production in the next 20 years.

Fifty percent of the people of Sri Lanka earn their living directly from agriculture. But as fragmentation has decreased the size and increased the number of holdings, many farms have become too small to provide a living for the farmer and hisfamily. Consequently, the average farmer has to earn much of his income (upto 50 - 75%) from non-farm occupation and other sources.

To help alleviate the problem of under employed farm labor, the FA has started research programs to intensify crop production and establish livestock, poultry and fish enterprises on farms. A model "One acre farm" with integrated crop/livestock production has been developed to demonstrate the efficacy of this system.

Project Purpose

The project purpose was to double the annaul number of indegenously trained BSc graduates and triple the annual number of indeginously trained postgraduates by 1985. This meant increasing BSc graduates from 104 in 1978 to 200 in 1985and increasing the number of Post Graduates

from 24 in1978 to 75 in 1985.

* By 1986, first year enrollment was up to 200. By 1990 when this class graduates the goal of 200 BSc graduates of the FA at Peradeniya will have been reached.

* It is university policy to admit 200 new students into FA each year. Two to three times as many qualified students apply for admission as are accepted. So the demand for training is greater than the supply.

* Two new autonomous agricultrual universities to train BSc's have been established at Ruhuna and Batticaloa, with a total capacity of 150 1st year students. This will make a total capacity of 350 admissionsinto undergraduate training at the 3 universities, with potential graduation of approximately 325.

* A manpower training study in 1985 estimated the need for BSc graduates in agriculture to be about 250 in the late 1980's and 210 - 220 in the mid 1990's.

* Postgraduate student enrollment was increased from 38 in 1978 to 87 in 1986. The target number was 136. It will probably be achieved sometime around 1990, fulfilling the purpose of the project.

Project Purpose Formulation

* The fundamental intent of the project was clearly to build the institutional capacity of the FA and PGIA to graduate the number of BSc's and Post Graduate students found in the purpose statement. As formulated, the project would do this and contribute toward the goal of the project.

* The outputs of the project were stated in terms of capacity building, for specific numbers of degrees to be produced - 200 BSc's and 75 PGs per year by 1985. However, it was not possible to attain this number by 1985 for three fundemental reasons:

  a) there was not enough space at Maha Illuppallama to take in 200 new students each year.

  b) there were not enough faculty in the FA to begin training large numbers of post graduate students until the participants returned to the campus.

  c) foreign donor funding permitted people to go for foreign degrees, so they did not enroll in PGIA.

Appropriateness of Outputs/Inputs

* A faculty of scientists trained to the PhD level is a necessity for training PhD's.

* Adequate buildings for classrooms, laboratories, offices, experiment stations and student housing are a prerequisite for teaching and conducting research.

* Modern scientific equipment is essential for quality research and teaching.

* No university can be effective without a library with up to date books, scientific periodicals and a reading room. Up to date scientific periodicals are critical and the cheapest possible way to keep scientists up to date.

* An up to date curriculum, with regular annual updating, is essential to offer courses for new areas of knowledge as they develop.

* Adequate transportation is essential to get scientists from their laboratories to experimental farms to test research findings under field conditions.

* An on going operating research program at the scientist level is the foundation for successful Post Graduate training programs. Students must be able to work closely with their professors in learning how to do productive research.

* Excellent teaching and research programs can be carried out without full blown extension programs. There are other ways for faculty to learn the problems of farmers that require less time and manpower. However, small "Outreach" programs are necessary to get research results to people who can use them.

* One output which was not identified was a computerized statistical center for research analysis. This is essential for modern research programs.

* The output list did not mention "equipment in good working order." This is essential and requires specific inputs to get full use of the equipment.

Adequacy of Outputs

* By the end of 1985, FA had 32 PhD's in its faculty, with more due to return from the US and other countries. It had a total faculty of 119.

* Total building space was inadequate. This problem will be alleviated when the Biology/Chemistry buildings under construction is completed in late 1987 and the Animal Science and Library buildings (approved) are built.

* Most department heads said that their scientific equipment is not adequate to do good research and teaching.

* The curriculum has been revised and new courses are being included each year. It now provides PhD level graduate courses, more science and mathematics for 1st year students and more opportunities for 4th year students to specialize. A further major revision was started in 1986.

* The library has 25,000 books and 165 periodicals for undergraduate and PG training and research. Doubling student numbers has put a severe strain on the number of books available. It is adequate for some disciplines, inadequate for others.

* Transportation is inadequate, with only 10 jeeps plus a few other vehicles for the whole FA/PGIA.

* The PGIA report for 1986 lists current research projects of PG studies in every departmental Board of Study. There are 74 active research projects some quite basic and mostly applied to the needs of farmers and the rural population of Sri Lanka.

* A small but effective media center is in operation.

* A well equipped computer center with 8 PCs is receiving heavy use.

* According to a survey of department heads, capacity to keep scientific equipment in operation is adequate in some departments but not in others.

Quality of Outputs

* PhD's trained in the US, with thesis research in Sri Lanka are very very well qualified and in great demand in Sri Lanka.
* New and renovated buildings are fairly well designed.

* Scientific equipment is "State of the art."

* Library books and periodicals were up to date as of 1986.

* The Post graduate curriculum is being redesigned to implement the taught Mphil and PhD programs along the lines of those in US universities.

* It was not possible to evaluate the actual quality of research programs in this evaluation.

* It was obseved that the publications of the media unit are of high quality.

Adequacy of Inputs

* The final list of inputs into the project included:

a) 10 jeeps for transportation.

b) Trained participants who returned to Sri Lanka with 22 PhDs and 3 MScs.

c) Short term trained technicians:

1 library operation (Penn State)	1984
1 Hydrology technician (Va Tech)	1986
1 Instructional system (Va Tech)	1986
1 Asst. Registrar (Va Tech)	1986
1 Animal Science Technician (Va tech)	1986

d) Three long term technical consultants

1 Farm management	13	PM's
1 Rural Sociology	25	PM's
1 Plant breeding	29	PM's

e)	Short term technical consultants-	92	PM's.
f)	Chief of party	81	PM's
g)	9,440 library books -	345,500	
h)	63 periodical subscriptions -	62,000	
i)	952 Micro (volumes) -	2,550	
j)	Other books -	10,000	
k)	Equipment valued at -	1,143,796 dollars	
l)	Equipment purchased by participants -	45,000 dollars	
m)	Buildings constructed by GSL: Off campus (farms) - over 25 essential buildings		

* If the 39 participants had all returned, the FA/PGIA would have strength in most disciplines. They left big gaps for which other people must be trained.

* Building space on the campus has not increased in proportion to student numbers.

* Not enough technicians were trained to fill all needs.

* Technical consultants were provided for most areas of need, but not all. They provided valuable assistance in developing faculty, curriculum, courses, research projects and programs, training PhD's, teaching courses for which expertise was lacking in FA, designing buildings and laying out experimental farms.

* Considering the increased numbers of students, the number of books (25,000) in the library cannot be classed as fully adequate. Department heads rate it only fair.
* Subscriptions ot current periodicals are due to run out by 1994.

* 10 jeeps was not enough.

Increase in Institutional Strength

* In 1978 the FA was a small poorly equipped, under staffed, scholarly "College of Agriculture" with an annual output of 100 high quality BScs. It now has A small faculty of well trained PhD's and MPhils who can teach graduate level courses and supervise research at the PhD level.

* In 1978 PGIA was a newly created graduate institution with a library of only 1,500 books. 80% of its panel of teachers were drawn from outside the FA. There was no established experimental farm. Most thesis research had to be conducted outside the FA.

* By 1986 these two institutions had available

  a) A faculty of 119, 32 with PhD's and 42 MSc/MPhil degrees.

  b) Many new and renovated buildings in which to teach and do research.

  c) Experiment station farms with adequate buildings, equipment, technicians and laborers.

  d) Modern scientific equipment being used effectively for teaching and research.

  e) A library with about 25,000 books and 165 periodicals students and faculty.

  f) An improved, undergraduate curriculum and a graduate level curriculum in operation in all 7 departments.

  g) A quality research program in each department.

  h) PhD's who are doing scientific research, supervising MPhil and PhD students, and publishing their work in scientific journals and other publications.

  j) A media center which publishes a few well prepared booklets and reports.

  i) A small but modern computer center.

* FA did not have a centralized research directorate as such at EOP. However, it did have seven capable department heads who manage the research programs of their departments. This is where effective management of research actually takes place.

* The staff of PGIA and FA are developing new linkages with Department of Agriculture and ministries responsible for agricultural improvement. They work closely with the Mahaweli and other projects funded by USAID and other Donor agencies.

* The FA/PGIA has been declared a center of excellence by IDRC (Canada).

* The World Bank is developing a project which will have a major impact on the agricultural research programs and institutions in Sri Lanka. What effect it will have on Peradeniya University is unknown as of 1987.

Effective Use of Inputs

* Trained faculty

a) Twenty five faculty members trained in the United States have returned to the FA/PGIA - 22 PhDs and 3 MSc's.

b. The returnees were all promoted to Lecturer upon receipt of their PhD's.

c. Every returnee has been given increased responsibility since returning to the faculty. Before, they were all teaching. Now they are also doing reserch and supervising graduate students as well.

d. A visit with all but two of the returnees revealed a beehive of activity in teaching, research, curriculum improvement, writing publications, serving on PGIA boards of study. One has become a department head (Agricultural Engineering).

e. Several of the returnees have been appointed to a commttee of the faculty with respresentatives from each department to develop a plan for revising not only the curriculum but whole system of instruction. The decision has been made to move the program to more of a "taught program" like the

students experienced in the US. One returnee is Chairman of this committee.

f. Despite their low salaries the returnees are full of enthusiasm for their work, pride in themselves and confident that they can make a difference for the benefit of the people of Sri Lanka.

g. Approximately half of the group indicated that they are nowinterfacing with the DOA otherministries and foreign donor programs which recognize and are using their knoweldge and expertise. They are finding a new "spot in the sun" and enjoying it!

* Technical Assistance

a) Long term consultants were successful in upgrading the plant breeding, agricultural economics and rural sociology programs.
b) Short term consultants stimulated thought and improvement in nearly 50 different subject matter areas.
c) Many US major professors spent only two weeks instead of one month in Sri Lanka with their advisors.

* Purchased Equipment

a) Department heads indicatd that most of the equipment purchased is being used and successfully maintained in their departments. e.g. the atomic adsorption spectrometer is used by scientists in several departments. The Crop Science department head has personally taken charge of its daily maintenance, operation and repair. He maintains a supply of spare parts and replaces them when necessary.
b) Equipment purchased for the tissue culture laboratory has not been installed because there is no satisfactory space for it.

* Library

a) The library is used heavily by both undergraduates and graduate students and faculty. Both research scientists and students rely heavily on the scientific periodicals to keep themselves up to date.

* Media Center

a) The media centre is overworked in preparing of publications for FA, PGIA and even for the whole university.

* Computer Center

a) The air-conditioned computer center with 8 micro

computers is being widely used. This was an unexpected bonus for the program.

b) Large numbers of IBM personal computers are being used by individual faculty members.

* Use of Jeeps

a) Jeeps are well maintained and used every day.

Implementation Measures

Contracting

* The lead agency for the contract was the Academy for Educational Development, Washington, DC, in consortium with 3 Land Grant Universities which provided training and technical assistance.

* The consortium provided the broad institutional base needed to fully implement the educational and TA elements of the project.

* Equipment purchasing was subcontracted to Franklyn Export Company, Inc.

Administration

* Administration of the contract was assigned to the PGIA, Peradeniya University. Project director was the Director PGIA, Co-director was Dean, FA. The contractor Chief of Party was stationed at Peradeniya.

* A close working relationship was established between the Project Directors, COP, USAID Sri Lanka and support personnel of the consortium.

* From the development stages of the project all the way to completion, the Director/Co-director involved department heads and faculty in the decisions related to the project.

* Administration, COP and USAID representatives met monthly to coordinate the project in Sri Lanka.

* An annual meeting was held on alternate years in Sri Lanka and US. It involved top administrators and support personnel from Contractors/Subcontractors, Project Administration and USAID.

Participant Selection

* Participant selection was on atotally competitive basis. The pool of potential trainees was enlarged by securing a

waiver of the 2 years of experience rule. Participants were selected by the University Senate, strictly on the basis of merit.

* Quality of the students was praised by US university faculty-a tribute to the students, to FA and to the excellence of the selection process. Only one student was dropped from the PhD program due to lack of ability.

* It was pointed out by one department head that if possible, the 2 year rule should have been adhered to in selection of candidates. It helps to give them a greater feeling of allegiance to the university - and might help influence them to return.

Commodity Procurement

* Commodity procurement procedure included:

  a) Allocate a proportion of funding to each department.
  b) Department head and faculty select equipment to be purchased.
  c) Lists reviewed by Director, Co-Director and COP then sent to AED sub-contractor for procurement.
  d) Recycling of orders for unavailable equipment.
  e) Purchased and shipped by Franklin Export Co.
  f) Shipments checked by COP, Project Director and USAID project supervisor on receipt at PU.

* Library books were ordered by a procedure similar to that for commodities.

* In selecting TA's, each department developed lists of specialities needed. This list was sent to US universities. Biodata of proposed TA's was then sent to Sri Lanka for approval.

* Some items of equipment purchased were selected with the participants in mind who never returned to PU. Thus it could not be put to its best use.

* All equipment was ordered early in the project to avoid inflation costs. This voided the opportunity to buy specialized items needed for some research projects of returned participants.

The Universities Selected

* The universities were Penn State, Virginia Tech and Texas A & M. They provided 240.47 peson months of Technical Assistance the PGIA/FA on 45 subjects. Fifty faculty members including deans, department heads, professors, asociate professors, assistant professors

and technical personnel shared their knowledge and expertise with PGIA and FA.

* Technical Assistance provided by Universities included:

  - Supervision of PhD thesis research
  - Outlined and taught courses in needed disciplines
  - Assisted in course and curriculum design
  - Participated in research project and program design
  - Reviewed departmental teaching/research programs
  - Developed detailed plans for experiment station and farm.

* Academic training included 39 participants - 11 for PhD degrees alone, 26 for both the MSc and PhD and 2 for MSc degrees alone.

* All returned participants volunteered that a major strength of the project was subject matter training they received in the United States.

* US universities made numerous contribution beyond the formal provision of their contract, including:

  a) Providing funding for senior faculty members, Director PGIA and Dean FA to spend their sabbatical leave as visiting professors at the US universities.
  b) Employing one farmer participant for the summer at Virginia Tech to teach a course.
  c) Provided free admission to the university for spouses of 6 participants. One has been employed in Crop Science; another is attached to Animal Science.
  d) Donating much lab equipment and hundreds of books and journals by individual faculty members.

Project Design

* The project design was specific to the needs of PGIA and FA. In 1977 when the project was designed GSL had decided to double the enrollment of BScs in the FA and triple enrollment in PGIA as rapidly as the capacity could be developed. This was consistent with the demand for trained manpower indicated in manpower studies.

* Although PGIA was responsible for PG training, it had to depend on FA for many of its panel of teachers. This is the reason FA was included in the project along with PGIA.

* To achieve the desired increase in capacity and capability the decision was made to: (1) increase the size of the faculty and support staff, (2) Train the faculty so it could train students to the PhD level, (3) build and

renovate buildings on the campus, at Maha Illuppallamma, at the experiment station and on farms, (4) develop an adequate library, (5) increase and upgrade equipment (6) improve and expand the curriculum, (7) develop a research program, (8) increae outreach activities.

* Outputs necessary for achievement of the expansion and upgrading were: (1) an adequate number of trained faculty with PhD in every department (2) adequate facilites and modern equipment including library with adequate books and periodicals, (3) On going research program in the FA, (4) On going outreach program (5) An up to date curriculum at both the BSc and PG level.

* GSL agreed to:

  - Hire faculty upto 91 total
  - Build and remodel buildings at the campus, experiment station and farms.
  - Provide necessary operating budgets for FA and PGIA.
  - Provide managers for the experiment stationand farms.

* USAID inputs included:

  - Training 37 PhDs and 2 MScs for the faculty
  - 240 PMs of short and long term technical assistance.
  - Modern up to date scientific library and media equipment.
  - Books, periodicals and microfiche file.
  - Transportation equipment

* Inputs by other donors were expected to be:

  - Training 12 PhDs.
  - 7 PM's of Technical Assistance

* USAID contribution was 7.5 million US dollars, of which 1,143,796 was for equipment and vehicles and 375,000 for books, material and equipment for the library and 39,000 for miscellaneous.

* GSL building contributions were to be (for 1978 - 85)

  - Rs. 7,581,000 for PGIA.
  - Rs. 27,006,000 for FA.
  - Rs. 10,151,000 for additional on campus buildings and furniture.
  - 5,078,000 Rs. for additional demonstration farm facilities.
  - an undetermined amount for existing facilities.

* PhD training included MSc training and PhD course work in the US, return to Sri Lanka to gather data for thesis research, return to the US to analyze data, and write thesis.

Implementation Strategy

The goal of the implementation plan was to tie together the time phased inputs to produce the key outputs of the project to enable an orderly expansion in the number of BSc and Post-graduate students enrolled and graduated, thus achieving the purpose of the project.

* The schedule of increased enrollment and graduation of BSc's fell far behind specific targets set in the PP.

* PG students graduated fell far short of PP projections, too. They were scheduled to go from 24 in 1978 to 79 in 1985, but only 23 were actually graduated.

* The PP anticipated date of return of the participants was about 2 years earlier than actually realized. It took over 5 years to do a combined MSc, and PhD training instead of the 4 years estimated in the PP.

* The outbreak of civil strife in 1983 disrupted the usual rate of expansion in student numbers.

* One very important strategy was used in implementing this project. Departmental faculty and department heads were involved from the beginning. Together, they decided on which equipment and what books to order and what technical assistance they needed and wanted. This took a great deal of effort and time, but it was extremely productive, adding greatly to the quality of the project.

* The original length of the project was 7 years. Taking 39 students out of the small FA to do this left a big hole in the number of teachers. It also caused a grest deal of uneasiness and some tension when the young staff returned full of ideas about how to improve the FA.

Validity of Assumptions

ASSUMPTION	VALIDITY
1. That BSc and advanced degree holders will be employed in both the public and private sector firms or agencies which contribute to agricultural development.	1. Valid. Many government agencies have BScs at their entry positions. Almost all advanced degree holders are employed in the public sector and are deputed and supported to get their degree by their employing institution.
2. Personnel trained to the BSc and advanced levels are important to agricultural development.	2. Valid. Almost all go into one of the many Sri Lanka agencies created to develop, improve and manage agricultural production.
3. The agricultural development which does occur will benefit small farmers and the rural poor.	3. Valid. The dean FA, indicates that most of the rice production increases in Sri Lanka to date have been through high yielding varieties, easily adoptable by small farmers.
4. Dropout rates (of BSc's) will continue to be less than 5%.	4. Valid. This was true in spite of the internal strife from 1983 onwards.
5. Qualified applicants equal or exceed capacity. (for the PhD training program.)	5. This was not true. It was necessary to train participants to the MSc level before they could go on for the PhD.
6. Dropout rate is less than 10% (for participants in PhD training in US).	6. Normally this would be a valid assumption. However, due to the unforseeable political difficulties in Sri Lanka the dropout rate was triple this figure at 30%.
7. New recruitment as scheduled.	7. Valid. Additions of 48 people to the PGIA/FA staff was projected by 1985. This was carried out and the faculty was increased to 91 persons.
8 That it would take only 4 years to train a PhD.	8. This assumption was not correct. Average time required was over 5 years.
9. That major professors would spend at least one full month in Sri Lanka to help students design and organize their	9. Incorrect. Many only found time for 2 weeks in Sri Lanka.

thesis project.

10. That all trained PhD's would return to the FA/PGIA when they completed their degree.	10. Not a valid assumption. Due to the communal strife which flared up in 1983 plus better economic opportunities elsewhere, 14 trained students either did not return or left soon after returning.

Data for Monitoring

* Quarterly and Annual reports contained very detailed quantitave data and narrative reports on every element of the project including:

  - Postgraduate enrollment and graduation by Msc, MPhil and Phd.
  - Undergraduate enrollment and graduation.
  - The Research program of PGIA/FA
  - The outreach program
  - Status of building construction and improvement by department and location
  - Participant training, including departures, location status and estimated dates of completion, and examination and return dates - by individual.
  - Technical assistance, long term and short term by name, subject matter and date.
  - Library development, including books ordered, shipped, received and costs.
  - Comodity procurement, by value of equipment ordered, shipped, delivered, turned over to GSL - by department
  - Project administration and planning - completed action, problems and recommendations.
  - Project funding status by input.
  - Work planned during the next quarter (or year)

Other Reports included:

* End of tour reports by all consultants, with their recommendations.

* Special reports.

* Minutes of Annual Report of CAED annual meetings with the statusof all elements, problems, opportunities and work plans.

* The achievements associated with the output "Curriculum developed and utilized" were recorded only in a general way. A simple way to monitor changes of curriculum is to list courses added and dropped each year.

* An excellent way to monitor a research program is to:

a) Record the title, principal investigations and objectives and budget for each new project as it is approved.
b) Record a 1 paragraph summary of the findings of each project as of its completed date.

This was not done.

Sustainability of Benefits

* An overriding factor in sustainability of the benefits of the AED project was that much of GSL budget is now required for security against terrorist activity. This has caused budget cuts for University of Peradeniya.

* University of Peradeniya and GSL policy will probably continue to admit and graduate about 200 BSc students per year.

* Best indications are that at least 75 PG degrees will be granted each year at PGIA by 1990 including at least 10 PhD's.

* Salaries of returned PhD's (lecturers) are only about $ 1500 a year, too low to hold them at the FA.

* About 1200 books are being provided annually for the library by GSL and foreign donors. This is 800 less than is needed to keep the library current.

* Support for research from foreign donors and other ministries is inadequate.

* University of Peradeniya has a liberal policy for faculty growth and development through sabbatical leave every 7 years.

* The policy of the university FA to emphasize MPhil training at PU will result in a larger pool of research trained personnel who can qualify for overseas PhD training supported by USAID, and other donor programs.

Local Institutional Capability

* Administration of the PGIA is provided by:

a) Officers of the PGIA including:
   - Senior Assistant Registrar, to the University Registrar
   - Asst Bursar, to the University bursar
   - Asst Librarian, to the university librarian
b) A 19 member coordinating committee consisting of:
   1. Director PGIA

2. Dean FA
3. 2 members of board of study for each dept.
4. 3 other members of the FA.

c) A 7 member board of study in each department consisting of 4 departmental memebers plus 3 other members of the panel of teachers, with chairperson selected by the members of the board.

d) An advisory committee and senior advisor for each student.

* Administration of the Faculty of Agriculture is by:
  - Dean, FA, responsible to the Vice Chancellor.
  - Competent Department Heads.
  - Numerous faculty committees.
  - Necessary administrative support staff.

* There are numerous disciplinary gaps left by PhD's who did return to the faculty.

* Provisions for maintenance of capital equipment include: 1) A university maintenance and repair shop for all general items. 2) A few well trained, highly competent technicians to operate, maintain and do minor repairs on some technical equipment but not enough.

* Budgeted funds for replaceing and upgrading capital equipment and research consumables are almost non existent. The FA gets its funding for research through the University of Peradeniya. The university of Peradeniya is under the Ministry of Higher Education and almost all ofthe ministry's recurrent budget is for salaries with almost none available for research. Most funds for PGIA come from special grants and donors. The PGIA budget comes directly from UGC, not through the UGP.

Importance of Agricultural Education

* Half of the 16 million people of Sri Lanka are directly engaged in farming.

* The following circumstances all point to the need for high level manpower training in agriculture:

  a) The increasing food requirements of the growing population coupled with foreign exchange scarcities means that self-sufficiency in food production will undoubtedly remain as a long-term major development goal.
  b) The scarcity of mineral resources and the limited internal market which restricts industrialization signify that agriculture will continue for a long time to be a vital industry in the economy.
  c) The limited market for tea which accounts for 30

percent of total export earnings makes it necessary to diversify crop production.

d) The decreasing size of farm (average size, .5 acre) points to the urgent need for agricultural productivity to be greatly increased through improved yields, more intensive cropping techniques and integrated crop/livestock farming.

* The great diversity of ecological zones which present opportunities for cultivating a wide variety of crops will demand more research inputs than in a country where agro-climatic conditions are relatively more uniform.

* A prerequisite for acceleration of production of food and export crops is the modernization of agriculture through application of science and technology. To develop this science and technology requires a critical mass of highly trained manpower capable of developing and testing new varities, improving cultural practices, improving soil fertility (including micronutrients) and ways to control insects, pests and disceases. Similar lists apply to livestock production.

* To achieve a higher level of scientific manpower more and more people will have to be trained at Post graduate levels as follows:

  - PhDs to provide the knowledge and skill required for developing complex new technologies and training research scientists at the MPhil and PhD levels.

  - MPhils to teach in Colleges, conduct applied research, train technical government workers in various ministries - and to prepare for PhD training.

  - MSc (non thesis) - to make BSc's more productive in fields of agriculture requiring specialized knowledge.

* The agricultural manpower for Sri Lanka study by USAID in 1985clearlyfound a general increasein demand by various ministries for upgrading the level of training and knowledge of personnel associated with Agricultural Research Education and development. There are far fewer PhD's in the research and education system than are really needed. (see annex I).

Women and Development

* From its earliest years, about 20% of the students in FA were women - and more than 30% in 1986.

* Of the 89 faculty members listed in the 1985-88 prospectus for FA, 18 (20%) are women.

* Nine of the 39 faculty members trained under the AED program were women. All except one of them has returned and is serving on the faculty of Agriculture.

* Two participant's wives who received their MSc in the United States have been added to the Faculty of Agriculture, one in Crop science, and Animal Science.

* Of those enrolled for the MPhil and PhD in the PGIA in 1987, 30% are women.

* Part III of the project analysis as of 1977 stated that "18% of the present pool of graduate students and 24% of the faculty's undergraduate students are women".

* Admission into the undergraduate program of the FA is strictly competitive. All students who apply for admission are given the same examination. Those who have the highest test scores, are admitted regardles of gender. There are no quotas or special qualifications for either gender.

* The selection process for AED program participants was open to everyone on the faculty equally and the process of selection was strictly competitive.

Implementation Problems

Inflation and Underestimation of Requirements

Double digit inflation caused almost all costs to incrase more rapidly than PP estimate. About 25% more time was required to train participants to the PhD level than was originally estimated. Without an increase in the budget to offset problems the project inputs would have had to be cut back.

Action taken by USAID to solve this problem was to increase the USAID input from 6.0 million to 7.5 million. This allowed the project to provide almost all the inputs as originally planned.

Under estimation of time required to complete the Project

Due to the delay in start up of the project and additional time for completing PhD training it became impossible to complete the project by September 1985.

USAID extended the project for one year, which allowed all but 6 PhD students to complete their work. Of those 5 have now completed and the other will do so in 1977.

Delays caused by Internal Strife in Sri Lanka

Internal strife in Sri Lanka caused closing of the university for varying periods in 1983, 1984 and 1985 amd delays in construction of buildings.

Action taken with regard to PGIA was to continue the graduate teaching programs even though the university was closed down. GSL continued the building program as planned, but at a slower pace.

Not Enough PGIA Faculty Time to Assist Participants with Their Research

The shortage of faculty during the life of the project due to absence of faculty in training prevented some PGIA advisors from doing all they and students would have liked to help students with their thesis research. A consequence of this was that some of the participants did not receive adequate supervision and assistance while in Sri Lanka gathering data for their thesis research. Their time in Sri Lanka was not as well spent as it could have been.

No suitable course of action was found for this problem.

The Attrition Problem

* The largest and most serious problem was the failure of 14 of the students to return to or stay in their positions in the FA upon completion of their degrees. (see Annex H) Some of them finished their PhD program, passed their final exams then left for various places in the United States, Canada, Taiwan, etc. One came back to the food science faculty, told his department head one day that he was going home to his parents for a few days. When he didn't return after several weeks, it was found that he had moved out all his belongings and had gone to teach at a university in New Zealand.

* All the non returnees were tamils.

* The attrition problem deprived the FA/PGIA of the research services of 12 highly trained PhDs and one MSc. This reduced the PhD strength of the FA by nearly 1/3 as of 1986. The failure of these former FA faculty members to return is causing serious shortages in the FA. It:

  a) Leaves some specialized equipment without a user,

  b) Causes voids in teaching important subject matter areas and in research programs sorely needed in Sri Lanka.

c) Adds a large overload to returnees and other senior faculty members which, coupled with doubling the number of students to be taught will result in reduction in quality of teaching.

d) Reduces greatly the total research program aimed at helping farmers, and the people of Sri Lanka.

* Action taken by GSL

Preventive action to ensure that the students would return included:

1) Securing a written bond (equal to 1 1/2 years salary from each student that he/she would return to their posts for 5 years if they received an MSc degree and 10 years if they received a PhD.

2) Having 2 guarantors to agree that they would pay the bond if the students did not return for the required length of time.

b) Action taken by USAID and Contractor

(a) Meticulous monitoring of the dates of student completion and student whereabouts.

(b) Some students were actually escorted to the plane back to Sri Lanka after they took their final exams.

(c) USAID Mission Director immediately protested strongly to GSL and the Contractor and used every means within its power to secure return of the participants.

(d) USAID Mission, Sri Lanka decided to stop funding long term participant training unless GSL certified that Bonds were legally enforceable.

(e) Some PGIA/FA administrators believe attrition would hav been less if USAID had acted more vigorously when the problem was discovered.

c) Action taken by PGIA and GSL

University authoraties are proceding with legal action against all students who have not returned. No cases have actually gone to court.

d) Action taken by the US Universitites

No overt action was taken by the US universities except to keepthe AEDand USAID informed about student whereabouts, final examination dates etc. and cooperate

with them in whatever ways possible. Some returnees felt that non-returnees misled their US faculty advisors considering the seriousness of their plight, thereby eliciting help to get jobs so they would not have to return to Sri Lanka.

Lessons Learned

* Training students at different Universities: Originally it was planned to send all the students to be trained in one subject matter area to just one university. This plan was changed to send people in one discipline to more than one university.

* Training technicians for high tech, expensive pieces of scientific or other equipment: Only PhD training was included in the project. Later, it was decided to send a limited number of technicians for training to operate maintain and make minor repairs on specialized expensive equipment. This proved to be a highly productive investment.

* Student purchases of equipment Students were permitted to spend the excess funds budgeted for their research on equipment to take back with them to Sri Lanka. Many of them bought IBM personal computers. All are being extensively used. FA now is able to operate with state of art computer equipment.

* Sabbatic leaves for Senior Faculty UGC has in place a liberal sabbatic leave policy. After 7 years a faculty member can take a full year of leave at full salary. Transportation costs for both the faculty members and spouse are paid to and from foreign countries. During this project 2 senior faculty - (The Director of PGIA and Dean FA) each spent a sabbatical leave at US universities, working in exchange for their support while in the US.

Issue-Establishment of An Agricultural University

* One issue which has been raised is the establishment of an agricultural university along the lines of the Indian Agricultural Universities. In India, all the Agricultural Universities excep 1 (25 out of 26) have been separated from the "Multi Universities" and the decision has been made to separate that one.

* In discussing this issue, Dr. H P M Gunasena, former Dean of Agriculture has said "It is clear that the Faculty of Agriculture under the present framework within a

traditional university system, is not flexible restricts diversified training, research opportunities are limited and a mechanism for working in collaboration with other agricultural research institutions is not available. Also the mechanisms for working in closer collaboration with other Ministries dealing with Agricultural Research and Development hardly exists and no institutional framework is available for such collaboration. This could be mentioned as the major constraint facing the involvement of skilled manpower available in the Universities in national agricultural development programs." Dr. F S C P Kalpage, Secretary, Ministry of Higher Education and Chairman, University Grants Commission, in a meeting held with the Secretaries of five Ministries of Agriculture, on May 6, 1986 said "Faculties as you know have got to work within the University system where the Senate and the Council are the authorities that make the decisions that have to be made. The Faculty (of Agriculture) feels that it would be better if it was elevated either to the state of a separate campus or a separate University College. Some people even suggested that it should be a separte University. These are all matters that are at the moment being discussed at various levels, both in the University Senate as well as in the standing committee of the University Grants Commission."

CONCLUSIONS AND RECOMMENDATIONS

Accomplishment of Goals and Purposes

Conclusions:

1. Except for the attrition problem, this project met its basic purpose. In line with the project purpose it did double the capacity of FA to train BSc students with a higher quality program than when the project started in 1979.

   It also increased the capacity of the PGIA/FA to do quality research and provide excellent graduate level teaching. At the beginning of the project, 80% of the teaching for the PGIA was done by non members of the FA. In 1986, of the teaching panel of 92 in the PGIA, 48 (1/2) were from the FA and 70 - 80% of the PGIA teaching was by staff of the FA.

2. The outputs of the project will contribute to increases in domestic food production, expanded employment opportunities and improvement in the small farmer standard of living. All levels of graduates will enter research, extension and other programs which directly contribute to achievement of these goals. Many research projects of the FA and PGIA are already directed toward these ends.

3. Due to the increases in total numbers of BSc's trained at all three agricultural colleges (Peradeniya, Ruhunu and Batticaloa), the number of BSc graduates in agriculture will probabaly exceed the demand estimated in the manpower training study conducted by USAID in 1985.

4. Due mainly to a shortage of faculty in PGIA during the life of the project the purpose of achieving 3 times as many postgraduate degree students was not achieved by 1985. However, the capacity to train this number of PG students, including 10 PhDs per year, is now established.

Recommendations:

1. That USAID develop further projects to help achieve these urgent goals.

2. That USAID continue to support training of students by PGIA/FA in order to fully utilize this national resource. The split degree is one good model for this.

Correctness of Purpose Formulation

Conclusions:

1. Technically the specific statement of project purpose was unrealistic. i.e. to graduate 200 BSc's annually by 1985 compared with 100 in 1978 and grant 75 Postgraduate degrees in 1975 compared with 23 in 1978. The important outputs, capacity and capability, were achieved, however.

2. An alternative statement of purpose would have been "to build a sustainable capacity for the Faculty of Agriculture and PGIA to annually graduate 200 Bscs, 35 MScs, 30 Mphil and 10 PhDs." This would have placed emphasis on the heart of the project, capacity building, rather than on a set of numbers which were unachievable in the time frame of the project.

Recommendations:

1. For USAID to insist that care be taken in future projects to ensure that purpose statements are realistic for the conditions likely to exist during the life of the project.

Appropriateness, Adequacy and Quality of Outputs/Inputs

Conclusions:

1. With one exception the outputs and inputs of the project were appropriate and essentially adequate. The 22 PhDs and 3 MScs who returned, modern scientific equipment and an up to date library have provided the basics for a quality research and teaching programs, with a curriculum adequate for both undergraduate and graduate teaching. The comprehensive outreach/extension program described in the project plan never really materialized. The complete operating instructional media center is, however, a very valuable, and necessary input. A small but up to date computing center is an added bonus.

2. The quality of inputs was generally very high.

3. Having PhD students return to Sri Lanka to do their research greatly increased the qualtiy of PhD training by providing PhD students orientation to the problems of Sri Lanka and experience in overcoming the problems of doing research in Sri Lanka.

4. US major professors of Sri Lankan students should have spent at least 1 full month in Sri Lanka with the advisors.

Recommendations:

1. In future AED projects, include sections in the PP technical analysis on:

   a) Adequacy of the total output package in relation to purpose.
   b) Balance in the proportions of various outputs and inputs needed to most completely and effectively achieve the purpose(s).

2. In future contracts with universities involvingstudents returning to their home country for thesis work, include a provision that the major professor spend at least one month in the donor country.

Increase in Institutional Strength

Conclusions:

1. The increase in institutional strength of both the PGIA and the Faculty of Agriculture by this project was a major step forward.

2. Even though the FA and PGIA are vastly stronger that in 1978, they can only be classed as minimally adequate. They will need continued assistance just to retain the gains they have made and they still need to be further strengthened.

Recommendations:

1. That USAID offer to provide high level, qualified expertise from the United States to work with a blue ribbon committee of leaders in Sri Lanka to study and make recommendations concerning the future mission, responsibility and support of the FA/PGIA.

Effective Utilization of Inputs

Conclusions:

1. With few exceptions the inputs from this project are being very effectively utilized. Each piece of equipment ordered was requested by department heads and faculty with a specific person and purpose in mind. Most of it is being properly used and maintained.

2. The major exception to the effective use of the inputs of the project is the failure of 12 PhD students to return to Sri Lanka. Obviously they have deprived the FA and PGIA of their services in teaching and research.

2. The knowledge and expertise the trainees gained in the United States will be used for the next 30 years to develop new knowledge through research and train PhD level scientific manpower essential for agriculture. Many of them will provide leadership for the future development of agriculture in Sri Lanka. This is what occurred in India over the past 25 years as a result of a similar USAID AED program from the mid fifties to 1972.

3. Specific opportunities for young scientists to associate with their peers in other countries are necessary to help them continue to grow, develop and keep pace with new developments in scientific research for agriculture - to help them stay on the cutting edge of their discipline. This would help keep up their enthusiasm for staying at Peradeniya University despite the low salaries.

Recommendations:

1. For GSL to take necesary action to additional budgetary support for these scientists to keep them supplied with upto date scientific equipment and expendables for research. This is absolutely essential to make this high cost resource productive.

Appropriateness of Implementation Measures

Conclusions:

1. The contract/sub contract/consortium arrangements was an excellent way to provide a high level of competence for providing the wide range of training and the very large number of specialtie needed for quality technical assistance.

2. The administration of the project was outstanding. The decision to appoint two proven, highly competent, committed leaders as administrators of the project contributed tremendously to its success.

3. The "management style" of involving department heads and faculty in project administration ensured that project inputs would be put to their highest use.

4. The administration of this contract provides an excellent model for host country AED contracts.

5. The competitive, peer selection process used for selecting participants was superior and resulted in highly qualified candidates, - only one out of 38 proved to be inadequate academically.

6. The procedure followed in commodity procurement (including library books) was correct and effective.

Recommendations:

1. That USAID use this method of contracting for similar AED projects.

2. That USAID consider the administration of this contract as a model to be used in future host country AED projects.

Appropriateness of Universities Selected:

Conclusions:

1. The universities selected for this AED project were well qualified to provide the training of MSc and PhD students and technical assistance needed for building the graduate training and research capabilities of the PGIA and FA.

2. The personnel provided for the contract were competent, interested, committed and helpful.

3. By providing assistance beyond the formal contract, the universities demonstrated enthusiasm and committment to helping PGIA/FA and the people of Sri Lanka.

4. The mutual respect and strong desire to work together which has developed during the project provides a firm foundation for future cooperation between the 3 US universities, PGIA and FA, including a vast reservoir of knowledge and good will which could be used for the benefit of PGIA/FA and Sri Lanka - and for the US universities.

Recommendations:

1. That USAID, through BIFAD, meet with these universities to develop an agreement which will provide opportunities:

   a) oppourtunities for the staff of FA to spend time at US universities as visiting scholars, post doctoral students or visiting professors.

b) for faculty members of US universities to come to Sri Lanka to share their knowledge and expertise through seminars, short courses or visiting professorships.

2. That PGIA/FA invite the Deans of Agrriculture and other high level representatives of these universities to Sri Lanka to wrok develop concrete procedures for maintaining "University-to-University" linkages. This invitation is vitally important.

Project Design

Conclusions:

1. The overall design of the project and implementation strategy were very effective for achieving the project purpose. Goals, purposes, outputs and inputs were in the right relationship and proportions. The expressed purpose of tripling numbers of post graduate degrees granted from 1978 to 1985 was totally unrealistic, however. Buildings had to be renovated. Equipment had to be purchased overseas, shipped and installed. Books had to be purchased, catalogued and filed. 39 members of the faculty were away for training until 1985 or 1986. Likewise a major limiting factor for increasing BSc enrollment was first year facilities at Maha Illupallemma which became adequate for 200 students only in 1985. Capacity to handle new students in PGIA was limited to 25 per year in 1982, 1983 and 1984.

2. To achieve the purposes of the project it was necessary to build both the FA and PGIA. Even though these are separate entities, it takes their joint efforts and full cooperation to train post graduate students.

3. The decision to train 38 PhD's was crucial. This is the most scarce and most critical long run input for developing a science based agriculture for Sri Lanka.

4. Obviously the PI projected dates for achievement of the purpose of this project were unrealistic.

5. The life of this project was obiously 2-3 years too short to allow it to be implemented smoothly and without large disruptions in FA/PGIA.

Recommendations:

1. In future projects, make a careful estimate of the length of time required to develop institutional capacity before quantifying a schedule of outputs.

2. That USAID make AED projects which involve large amounts of PhD training and institution building 10 years in length to increase efficiency of implementation.

Validity of Assumptions

Conclusions:

1. Most assumptions were valid.

2. Incorrect assumptions concerning time required for training was serious enough to cause disruptions in the time schedule for implementing the project.

Recommendations:

1. For USAID to instruct project designers to make assumptions explicit about length of time requird for training and check them with universities where training might take place.

Adequacy of data for Monitoring

Conclusions:

1. Data regularly available for monitoring was basically adequate and clearly presented in quarterly, annual, end of tour and special reports.

2. Monitoring of the project would have been improved by an annual report onspecific curriculum changes, by departments, by listing courses added and dropped.

3. Monitoring of the project would have been improved by two types of reports on the research program. First - project title, investigators name, objectives and length of each new research project when it was started. Second - Short summary of findings of each research project when it was completed.

Recommendations:

1. That future AED projects which involve curricular development or research projects (programs) include specific monitoring data for this element.

Sustainability of Benefits

Conclusions:

1. Training of BSc's Agriculture in Sri Lanka will probably be 60 - 70% above the number 200 specified in the PP.

2. A "brain drain" is likely to occur as members of the faculty are able to find higher paying positions. A brain drain can also occur if faculty stay on at University of Peradeniya but spend a high percent of their time consulting outside the university.

3. Amount and quality of equipment is more likely to fall behind its 1986 levels than to improve.

4. New book purchases for the library may keep up with needs, but periodicals most likely will not.

5. GSL funding will probably not be available to provide PhD training for junior faculty of FA needed to replace faculty members who will move on to higher paying positions in the decade ahead.

6. Given the sabbatic leave policy at University of Peradeniya small amounts of support would enable faculty to go to US universities as visiting scholars with some of the best scientists and agricultural programs in the world.

7. Local institutional capacities for management of both the PGIA and Faculty of Agriculture budgets, personnel and programs are in place, well organized and effective. The excellent capabilities of this management system and team have been in evidence throughout this project.

8. Technical capabilities of the PGIA and FA are limited by the lack of personnel in key disciplines.

9. The number of trained technicians for operation, maintenance and minor repair of scientific equipment is inadequate.

10. Financial provision for replacement and upgrading equipment and for expendables for FA research are totally inadequate.

Recommendations:

1. That USAID consider a modest level of funding (2 to 3 PhD's per year + $100,000 for equipment and books) to sustain the EOP level of capability of the PGIA/FA for the next decade to ensure that:

a) The number of PhD's on the faculty of Agriculture with at least part of their training in the US is maintained and/or increased.
b) Modern scientific equipment is added each year to keep the PhD's productive and motivated to stay at PU and do good work.

c) The PGIA/FA library is adequately supplied with books and current periodicals for good research.
d) The PGIA/FA is able to publish results of thesis and other research work in usable form for other agricultural research workers and extension personnel in Sri Lanka.
e) Vehicles are available to transport faculty to research plots and the experimental forms at Dodangola and Mewatura.

2. For USAID to conduct a comprehensive impact evaluation of this project 5 years after EOP (1990). Purpose of this evaluation would be two fold;

a) to evaluate the level and quality of output of FA/PGIA.
b) to determine the impact of the PGIA/FA Faculty on the effectiveness of research, extension and other agencies serving Sri Lanka agriculture, on the productivity of agriculture and on the income and standard of living of small farmers.
c) to determine needs of FA/PGIA fo fulfilling their mission.

Importance of Agricultural Education

Conclusions:

1. Ever increasing amounts of science and technology will be needed to solve the problems of agriculture and increase the productivity and profitability of farming and to meet the needs of Sri Lanka for increased food production and export crops in the years ahead.

2. To develop the required science and technology for agricultural improvement will require continuing growth and improvement in both the quantity and quality of the scientific manpower base.

3. To develop and train the scientific manpower base requires an educational institution well staffed with PhD's in all scientific discipline including the newly developing ones in Biotechnology.

4. With the rapidly changing and developing research equipment and technology, specific programs need to be organized to keep scientists up to date in their discipline.

5. The most limiting factor to improvement in agricultural productivity in Sri Lanka is its ability to generate its own scientific manpower. To continue to generate it outside the country require, far more donor funding than providing Sri Lanka the resources at FA/PGIA to generate this manpower within the country.

Recommendations:

1. That USAID support training of additional faculty of FA/PGIA to the PhD level to ensure the capability of their institutions to train adequate numbers of PhD's for the Sri Lanka research/education system.

Women and Development

Conclusions:

1. GSL, Peradeniya University PGIA and FA policies and actions support the education of women in agriculture.

2. Women students have been a significant percentage of the student body of both FA and PGIA since their beginning.

3. Women students are a growing percentage of both undergraduates and post graduates enrollment.

4. The project design and implementation did adequately take into account the needs of both men and women in the FA/PGIA.

5. Equal opportunities was provided to both men and women in the design and implementation of this project.

6. The percentage of women on the faculty is growing.

Recommendations:

None.

Implementation Problems

Conclusions:

1. Problems encountered during this project were serious in nature but were handled very appropriately.

2. All possible action was taken and what was taken was appropriate.

Recommendations:

None.

The Attrition Problem:

Conclusions:

1. Securing bond by the student with a guarantor's agreement to pay it in the event the student did not return to his post was not effective even though the bond is equal to about 1 1/2 years salary of a lecturer in FA.

2. USAID Sri Lanka did everything within its jurisdiction and power to secure the return of the participants. However action taken to date has produced neither the return of students nor repayment of bonds.

3. The size of the bond has not reduced the attrition rate. If a trainee can get a foreign job, his/her increase in income per year will be many times the size of the penalty. Students who get foreign jobs can easily forefeight the penalty of only about 2,300 US dollars to free them from their obligations to GSL.

4. The majority of the trainees interviewed personally indicated strong moral obligation to live up to their contract with University of Peradeniya, GSL and the United States.

5. There appears to be simply too much flexibility in the passport system of GSL and visa system of the US to ensure the return of Sri Lankan students to their home country.

6. It should be noted that the attrition problem is a general problem. In this AED project, however, it was greatly accentuated.

Recommendations:

1. USAID and GSL should take strong action to reduce attrition rates in future projects. Possibilities include:

   a) Withhold the degree from the US university until the participant actually returns to his position in Sri Lanka. US universities withhold degrees pending settlement of obligations of US students, so there is precedent for this.
   b) Makeing the degree a joint degree between the US university and University of Peradeniya with coursework done in the United States and thesis in Sri Lanka for MSc. For the PhD, require coursework and prelims in the US and all thesis work in Sri Lanka, with joint final examination.

   d) Make the degree a split degree with coursework in the US and thesis work in Sri Lanka with, all final examination done in Sri Lanka and the degree from the University of Peradeniya only.

   e) Place more stringent limitation on Passports issued by GSL and visas issued by US government.

Lessons Learned

Conclusions:

1. Training various people in one discipline at several universities provides a broader knowledge base among people in their departments when they return home. It also avoids the tendency of faculty of a department to make it a carbon copy of the one in which they were trained.

2. The low cost of technician training (3 months) results in a more effective use of scientific and technical equipment, reducing down time and keeping equipment in good operating condition.

3. If students are permitted to use savings in their thesis research allowances to buy items which they will need on return to their home institution they will probably,
   1) use their support money more wisely and
   2) buy items which will be of high value in work back at their home institution.

4. There are many opportunities for FA/PGIA members to spend their sabbatic leave in US universities. With their level of training, they would be welcome to work with outstanding US Agr Research Scientists in their laborratory as visiting scholars. Since they make a valuable contribution to the research program, US scientists with large funding grants (and/or department heads) are often willing to pay them a living wage during

this period. 10,000 chinese scholars visit the United States on this same basis every year and take their new knowledge back to help the people of China. Both the Chinese and the US gain from this program.

Recommendations

1. That USAID adopt the policy for future AED projects to send students from one department in their home institution to several different departments in the US to provide a broader knowledge base for the trainees home department.

2. That all AID projects which provide major pieces of scientific equipment also include specialized training for technicians who will operate, maintain and repair it.

3. That permission be granted for students trained in the US to buy equipment with any savings from their allowances for thesis research.

4. For USAID, through BIFAD, to provide assistance in developing opportunities for faculty of FA/PGIA to spend their sabbatic leave with US scientists as visiting scholars.

Issues

Conclusions:

1. Leaders in Sri Lanka are not yet satisfied with the ability of FAand PGIA to adequately find and utilize the training and ability of the PhD's trained in the US and elsewhere.

2. Some modification is needed in the Sri Lankan institutional arrangement for indegenous training of scientific manpower needs for agriculture.

Recommendations:

1. That USAID offer assistance to GSL for analysis of alternatives for resolving the "Institutional Arrangement" issue as it did in India in the early 1950's.

Annex A

Logical Framework

A. Goal

Agricultural development that: 1) increases domestic food production; 2) expands employment opportunities; 3) improves the small farmers' standard of living.

Measures of Goal Achievement

1. Paddy production
2. Absolute and relative numbers of productively employed people in the agriculture sector
3. Small farmer incomes

Means of Verification

1. Bureau of Census and Statistics data
2. Ministry of Agriculture and Lands data
3. Food import figures
4. Central Bank data

Assumptions

1. B.Sc. and advanced degree holders will be employed in programs that contribute to agricultural development.
2. Personnel trained to B.Sc level and above are important to agricultural development.
3. Agricultural development will benefit small farmers and the rural poor.

B. Project Purpose

To double the annual number of indigenously trained B.Sc graduates and triple the annual number of indigenously trained postgraduates by 1985.

Beginning and end of Project Status

Beginning (1977-78)	Measures	End (1985-86)
414	B.Sc. Candidates enrolled	808
99	B.Sc. Degrees granted	200
26	M.Sc. Candidates enrolled	75
23	M.Sc. Degrees granted	67
10	M.Ph. Candidates enrolled (2 yrs. program)	22
1	M.Ph. Degrees granted	10

2	Ph.D. Candidates enrolled (3 yrs. program)	39
0	Ph.D. Degrees granted	10
20	% courses taught by Faculty	80

Means of Verification

PGIA and University of Sri Lanka records.

Assumptions for Achieving Purpose

Drop out rate continues to be less than 5%. Qualified applicants equal or exceed capacity.

C. Outputs	Magnitude of Outputs
1. Trained Faculty in six departments	Faculty consists of: A. Department of Crop Science: 14 Ph.D. degree staff 3 M.S. degree staff B. Department of Agricultural Biology: 13 Ph.D. degree staff 4 M.S degree staff 1 B.S. degree staff C. Department of Agricultural Chemistry: 12 Ph.D. degree staff 2 M.S. degree staff D. Department of Agricultural Economics and Extension Services: 12 Ph.D. degree staff 2 M.S. degree staff E. Department of Animal Husbandry: 13 Ph.D. degree staff 1 M.S. degree staff F. Department of Agricultural Engineering: 13 Ph.D. degree staff 1 M.S. degree staff
2. Adequately equipped facilities	2. Facilities consists of: A. Additional buildings and equipment for: 1. Agricultural Biology 2. Agricultural Chemistry 3. Animal Husbandry 4. Experimental Farms B. Renovated Buildings for: 1. Crop Science 2. Libraries

	C. Post Graduate Library with 18,000 books, 165 journal subscriptions 90 back files on filme/fiche functioning acquisition and cataloging system
3. Operating research/ outreach programs	3. Programs consists of: A. Staffed and equipped farms at Dodangolla and Meewatura B. All students have partial training at Farms C. Operating research/extension relationship with farm villages D. 56 students in graduate research programs E. All students involved in minor research programs F. Research results published and disseminated G. Research internally and externally coordinated
4. Curriculum developed and utilized	4. Curriculum developed for the following fields: A. Crop Physiology B. Genetics and Plant Breeding C. Undergraduate and Postgraduate Phytopathology D. Soil Physics E. Soil Microbiology Laboratory Procedures F. Rural Sociology G. Communications H. Rural Community Development I. Waste Management Research/ Environmental Control J. Advanced Water Management K. Advanced Quantitative Genetics and Animal Breeding

Means of Verification

Project Reports

Assumptions for Achieving Outputs

1. Drop-out rate is less than 10%
2. New recruiment as scheduled

D. Inputs	Objectively Verifiable Indicators
1. Technical Assistance	1. Expatriate Advisors A. AID 1. 43 short term people for total of 130 pm 2. 7 long term people for 204 pm cost = $ 2,533,420 B. Other Donors 1. 4 long term people for 48 pm costs $ 668.732
2. Training-long-term	2. Following staff trained to Ph.D_ level (not cumulative) A. AID 21 by 1983 17 by 1984 Cost = $ 1,867,894 B. Other Donors 3 by 1983 8 by 1984 1 by 1985
3. Commodities, Vehicles and Books	3. AID = $ 1,539,729
4. Local staff salaries and support	4. GSL 1978-1985 = PGIA = Rs.7,581,000 ($ 495,437) Faculty - Rs.27,006,000 ($ 1,473,812)
5. Facilities and Services	5. GSL A. Construction of 7 large buildings (78,000 sq ft) and renovation of 1 large and 1 small building = Rs.10,151,000 ($634,438) B. Construction of 16 smaller buildings (71,465 sq.ft) off campuses and Farm preparation = Rs.5,078,000 ($ 317,375)

E. Modifications of the Logical Framework

There were no modifications in the Goal, Purpose, Outputs or Inputs items. Two minor modifications were made in the magnitude of inputs. They were:

1. Technical Assistance -

   a) The PP stated that these were to be 2.8 person years of Technical Assistance.
   b) The contract stated that there would be 22 PGs.

c) PP supplement number and modified. This to 10 PGs.
d) The long term TA was reduced from 7 people to 3.

2. Number of PhD participants.

When one PhD participant was dropped from the program, one MSc participant was added to off set the "dropped" PhD.

Annex B

Scope of Work

A. Objective

The contractor shall undertake a through end-of-project evaluation of the AED project, reviewing achievements relative to planned outputs, purpose and goals, highlighting problems and lessons to be derived, and formulating recommendatins as appropriate.

B. Background

In 1978 USAID initiated a project with GSL Ministry of Higher Education to upgrade the capacity of the Faculty of Agriculture and Postgraduate Institute of Agriculture, University of Peradeniya, to provide quality agricultural education, particularly at the post-graduate level. The implementing institution for the GSL was the PGIA. The immediate purpose (per the Project Paper) was "to double the annual number of B.Sc graduates and triple the number of indigenously-trained post-graduates by 1985". This was to be accomplished through a program of faculty development, expanded and improved teaching and research facilities, and improved undergraduate curriculum. AID inputs (training, technical assistance, commodities, totalling $7.5 million) were all provided through a single AID direct contract with the Academy for Educational Development. Participant attrition was the major problem experienced in this project, Of the 39 participants sent to US for training 12 participants were lost to the program. (3 participants returned served for periods ranging from 6 months, - 3 years and left Sri Lanka. A further 6 participants did not return to Sri Lanka after completion of degree programs and three were dropped from project support.) 24 participants (22 Ph.Ds and 2 M.Sc) have resumed duties at the Faculty of Agriculture.

The project assistance completion date, which all AID-funded inputs must have been supplied, was September 30, 1986. The purpose of the end-of-project evaluation is to assess project performance relative to goals and purposes as well as output; it will have to consider the effectiveness of faculty trained, curricula developed and facilities provided under the project.

C. Purpose of the Evaluation

The purpose of this final evaluation is to examine the extent to which the project has met its purpose and objectives, the

appropriateness in restrospect of the project design, the performance of the main parties (the Contractor, PGIA, the Universities, and USAID) in managing the proejct and dealing with the participant attrition problem, and whether the benefits of the project will be sustained. The main uses of the report would be by USAID and other parties having documentation of the performance under AED project, by USAID and the GSL in dealing with long term participant training in agriculture or other sectors in the context of Sri Lanka's ethnic tensions, by USAID in reviewing whether additional assistnce in agricultural education is central to meeting mission strategic objectives in agriculture, and for the Agency in designing future projects dealing with agricultural education in Sri Lanka or other countries.

D. Scope of Work

One agricultural education specialist will be required to serve as team leader and carry out the evaluation. The evaluation team will review all background materials, project records, interview Higher Education and project staff, returned participants, USAID and others who have contributed towards the achievement of project goals. The evaluation will explicitly consider the following issues:

(a) Goal and purpose accomplishments relative to the project's logical framework matrix:

- Was the purpose achieved? What progress toward goal achievement can be documented?

- Was the project purpose correctly formmulated? If not, what are alternatives?

- Were the inputs and outputs (both quantity and quality) adequate and appropriate for achievement of project purpose(s), both explicit and understood?

- Has the institutional strength of PGIA been increased through the project? What evidence is there of this? Are the skills of returning faculty being fully used by PGIA (and/or the country), in teaching and research?

- Are the inputs being effectively utilized? If not, why?

- Were implementation measurs (contracting, administration, participant selection, monitoring, commodity procurement) appropriate? How might they have been improved?

- Was the design of the project and the implementation strategy a reasonable and effective way of achieving the project purpose. In retrospect, were there any ways the design might have been improved?

- Were the project assumptions (in logframe) valid? Were any important unstated assumptions highlighted during the implementation of the project?

- What data was regularly available for monitoring the project? Was data collected adequate for monitoring the achievement of the project purpose, as well as outputs? If not, can other readily collected data be suggested which could have helped the parties to monitor purpose level achievement?

(b) Sustainability:

- What project benefits are likely to be sustained after donor funding ends?

- What local institutional capacities (management, technical, financial, provisions for maintenance and the replacement of capital equipment) are being developed to continue project benefits: will they be in place once donor financing ends? What policy conditions are required to facilitate continued long-term impact?

- How important is agricultural education to achieving the Mission strategic objectives in raising national agricultural productivity and incomes? Are there major or minor remaining actions which need to be taken by the GSL, USAID, or other donors to optimize the impact of the agricultural education system on agricultural productivity and incomes?

(c) Women and Development:

- What gender-specific data are available onthe composition of the PGIA faculty and students in different departments? What isthe gender breakdown of participants trained under this project?

- Did the project design and implementation adequately take into account the needs of both men and women in the agricultural education system? What have been the impacts of the project on women's education and training?

(d) Major problems or issues, and lessons to be derived:

- What were major implementation problems? How were they addressed? Were the measures taken appropriate?

- What specific lessons can be derived from these problems or issues, how they arose, and how they were addressed?

- What impact did the participant attrition problem have on the overall project?

- What impact did the participant attrition problem have on the overall achievement of purposes?

- Were the actions taken by all concerned parties (PGIA, USAID, AED. etc) to deal with the attrition problem appropriate? Are there any other actions which could/should have been taken.

- Given the attrition problem, are there "lessons learned" on how the Mission can deal with participant training in other projects? i.e. on the one hand, the Mission intent is to make training opportunities accessible to all ethnic groups; yet in the context of the current ethnic conflict and economic situation, there are strong incentives for trained professionals to look outside for employment.

(e) Recommendations:

- What recommendations or conclusions can be reasonably drawn from the experience of this project, relative both to agricultural education development in Sri Lanka and to the broader AID context?

E. Outline of Report

1. Title page.

2. Table of contents

3. A basic project identification sheet (outline attached, attachment 5)

4. An executive summary (maximum 3 pages single space containing the elements required by the ANE Bureau as per attachment 6).

5. The body of the report (limit to approximately 30 pages with any special lengthy analysis or listing of data placed in the appendices).

6. Conclusions and Recommendations.

7. Any useful annexures or appendices (incluidng the evaluation scope of work, the logical frame work with indications of any modifications during the life of the project, the description of the methodology used in the evaluation and a bibiliography of written works consulted).

Thirty (30) copies of the final report will be prepared and submitted to USAID, Sri Lanka by the end of the sixth week, for distribution among GSL and USAID officials. The report should address all the issues (a through e) outlined under the Scope of Work.

Annex C

Evaluation Methodology

The first phase of the project was spent in gathering data for the evaluation. This included:

- interviews of former Chief of Party and USAID officials who had served in Sri Lanka, during project preparation and implementation.

- Securing primary data for the analysis on questionairs prepared for administration of the project, Returned Participants and Department heads in FA/PGIA.

- Personal interviews with Dirctor, PGIA and dean FA, department heads and returned participants.

- Personal visits to the experiment farms, library, computer lab, media center and various buildings and labs on the Campus and FA and PGIA.

- Review of Quarterly and Annual project reports, End of Tour reports, special reports, CAED meeting minutes PP, PP supplement No.1, first evaluation report (1982), Prospectus and Annual reports of FA and PGIA, Annual Budget for PGIA.

The second phase was analysis of the data and developments, findings, conclusions and recommendations.

The third phase was preparing the written report based upon all the information gathered.

The fourth phase was to submit the written report, to key people for review, and make necessary corrections.

The final phase was printing the report.

Annex D

QUESTIONNAIRE FOR RETURNEES PGIA/FA TRAINING PROGRAM
MAY 4-8, 1987

1. Name: _____

2. Ph.D from: Date Received: _____

3. Responsibilities:

   (a) Prior to Training: _____

   (b) Upon Return to Post: _____

   (c) Present: _____

4. What features of your training program did you like most (from the time you were selected until your return):

_____

_____

_____

_____

_____

5. What suggestions do you have for improvement of training programs such as you did for your Ph.D.:

_____

_____

_____

_____

_____

6. As you look towards your professional future, what do you want to do:

   (a) For your personal and professional fulfilment?

   _____

   (b) For the people of Sri Lanka?

   _____

   _____

E

Annex

QUESTIONAIRE FOR DEPARTMENT HEADS
PGIA/FA

1. Name of Department:

2. For each returnee, what new strengths has he/she demonstrated, in terms of:

   a) Leadership (administration, planning, program, other)
   b) Addition of new courses taught:

      (1) Undergraduate level
      (2) Graduate level

   c) Upgrading of old courses (in what way).
   d) Major advisor for graduate students.
   e) Initiation of new research project to help solve problems and improve agriculture in Sri Lanka.
   f) Securing donor funding for research.
   g) Publication of research findings (list).
   h) Organizing and Conducting specific outreach program activities.

3. Concerning Trainees -

   a) How many were sent from your department? _____
   b) How many returned? _____
   c) How many have left your department since returning?

   d) _____ What kind of organization did those who left go to and what kind of work are they doing?

4. What major curriculum changes did you make in your department from 1978 to 1985?

   a) What new curricula were added? what year?
   b) New courses added?, by year.
   c) Courses dropped?, by year.

5. Are there constraints which prevent you from making full use of your returning faculty? If yes, what are they.?

6. Please list increases in space available to your department since 1978 (square feet and percent)

Type of Space	Sq ft	Percent over 1978
Office		
Classroom		
Laboratory (for teaching or research)		
Green house or nursery		
Farm buidlings		

Land area
others

7. Do you now have adeqaute space for your program for the next 5 to 8 years? If no, what is needed?

8. Please list new items of Scientific equipment received by your department since 1978?

   a) Provided by USAID
   b) Provided by Government of Sri Lanka
   c) Provided by other donors

9. How do you rate the scientific equipment in your department in terms of adequacy to do first quality research and post graduate teaching?

   Superior
   More than adequate
   Adequate
   Less than adequate
   Poor

   If less than adequate or poor, what major items are needed.

10. Are there any pieces of equipment you are not ableto use effectively in your teaching research or outreach program?

11. How do you rate the library books and periodicals in relation to the needs of your department?

	Excellent	Good	Fair	Poor
a) for undergraduate teaching				
b) for postgraduate teaching				
c) for research				

   If fair or poor, please explain.

12. Are you able to provide adequate servicing, maintenance and repair to keep your scientific equipment in operation? If not, what is needed?

13. Please provide an evaluation of the benefits of technical assistance received in the following format:

Year	Person	Person months	Purpose	Benefits Received

14. Were adequate technical assistants provided to fillin for your faculty while they were on study leave?
    Please analyze

15. Whatis your evaluation of the procedure of trainees taking course work in the US, returning to Sri Lanka todo their thesisresearchand going again to the US to finish their training and thesis?

    a) what lessons have you learned from this procedure?

    b) what suggestions would you offer to improve this system in future projects.

16. Whatcontributionif any did the thesis research of the trainees make towards the improvement of Agriculture in Sri Lanka? Please list titles of thesis research done by each trainee.

17. What suggestions do you have concerning other aspects of the training program (from selections of students until they return?

18. What did you like most about the performance and contribution of the US Universities in relation to this project?

    a) What suggestions would you makefor improving this performance if the project were to be repeated?

19. With present levels of funding will you be able to:

    a) Take full advantage of the PhD training received by your faculty
    b) Adequately maintain and repair your new equipment
    c) Replace your new equipment when it wears out
    d) Continue to modernize your scientific equipment
    e) Provide computer hardware and software needed for teaching and research

20. Please add any comments you wish concerning any aspect of the Agricultural Education Development Project.

Annex F

Questionaire for Administrators
AED Project, PGIA and FA

1. What strengths did this project contribute to help improve the capacity of the University?

   a) For undergraduate Education
   b) For graduate education
   c) For research
   d) for outreach

2. Were the inputs and outputs appropriate for achievement of the purposes of the project? Were they adequate?

   Please see the attached sheet for a list of these Inputs and Outputs.

3. Please list problems you encountered in Administering the project. Were they serious? Were you able to resolve them satisfactorily? What resoution was reached?

4. If you were starting over, what would you have done differently in administering the contract?

5. Overall did the administration of the project go smoothly?

6. Howwould yourate theappropriatenessof project implementation measures?

	Totally Appropriate	Highly Appropriate	Acceptable	Inappropriate
Contracting				
Participant selection				
Monitoring				
Commodity Procurement				
Technical Assistance				

7. What problems if any, were encountered in implementing the contract? How was each problem addressed? if any

8. What suggestions would you have for improving each of the implementation measures?

9. Was the design of the project a reasonable and effectiveway to double the number of undergraduates, triple the number of postgraduate degrees and upgrade the capacity of the PGIA/FA to educate and train undergraduate and graduate students and increase the capacity for research and extension?

10. What would have been a more correctformulation ofthe project purpose(s)?

11. In retrospect, going back to 1978, how might the project have been designed to more effectively achieve: purposes, targets, outputs.

12. There are two parts to the attrition problem;

    - Trainees who did not return

    - Faculty moving to other assignments as soon as possible after their retun

        a) Please state the magnitudes of these problems as of September 30, 1986
        b) What was done beforehand to prevent this attrition?
        c) In retrospect, could anything else have been done to prevent it?
        d) Were actions of USAID and of the contractors and sub-contractors appropriate and adequate?
        e) What has GL (PGIA/FA) done to secure recompense from those who did not return or left the University after returning?
        f)What suggestionsdoyou havefor preventing attrition in future projects?

13. What was the net effect of the attrition problem capacity of the University to train PhDs and to do research?

14. What missions and purposes are assigned to the Post Graduate Institute of Agriculture and the Faculty of Agriculture by GSL or UGC?

15. Does the GSL or UGC provide adequate funding (for facilities, equipment, personnel, recurrent costs) to the PGIA or to the FA for :
    to conduct:

        a) Research
        b) Outreach
        c) Training government personnel

    If yes, how much?
    If no, how much should it be?

16. Do other Donor agencies provde any funding for items in question 15. If yes, what are the programs, how much funding is being provided and funding on a regular basis.

17. Are there any formal agreements between PGIA/FA and the Department of Agriculture (or other entity) concerning the conduct of:

        a) Research
        b) Outreach
        c) Training government personnel

18. What reports and data were regularly available and needed in monitoring the progress of this project? Would ithave been helpful to have any other reports on data? If yes, please describe.

19. Concerning the education of women by the PGIA/FA:

    a) What are the policies of GSL, PGIA/FA
    b) What was the enrollment of women in various departments in 1985 (total and a percent of total students)
    c) What has been the trend in enrollment of women in undergraduate education programs of FA and (2) PGIA program
    d) How many women are on the faculty of PGIA/FA, total and percent of total

20. Please outline what is planned for the future:

    a) To maintain the quality of education and research in PGIA/FA
    b) To expand the research and outreach functions to better serve farmers and the people of Sri Lanka
    c) Maintaining relationships with the members of the Consortium (AED, Penn State, VPI, Texas A&M)

21. What concrete actions have been taken to implement these plans by:

    a) PGIA/FA
    b) Government of Sri Lanka
    c) Department of Agriculture
    d) Members of the Consortium
    e) Others

22. Please make any other comments you feel would be helpful concerning the project, including:

    a) lessons learned (what was done that you would do differently or not at all)
    b) Further suggestions for the future

Annex G

Itinerarry and Schedule of Activities for the Evaluation

April 28, 1987	-	Arrived in Colombo
April 29	-	Briefing sessions with John Flynn, Sithy Thaha, Jan Emmert
	-	studied overall plans and implementation procedures
April 30 and May 1	-	Developed questionnaire for survey of returning trainees, department heads and administrators of the project.
May 2	-	Studied project reports
May 4	-	Travelled to Kandy. Met with Director Senanayake, PGIA and Dean Thenabadu, FA and interviewed two department heads.
May 5	-	Visited livestock farm at Mawela and the experiment station farm at Dodanagolla
	-	Interviewed two department heads and PhDs in Crop Science
May 6	-	Interviewed PhD's in Agricultural Economics and Extension
	-	Visited Media Center and interviewed Media Center technicians
May 7	-	Interviewed one department head and PhD's in Food Science, Soil Science and Agricultural Engineering
		In depth interviews with Director PGIA and Dean FA
May 8	-	Interviewed department head in Agricultural Biology, PhD's in Biology and Animal Husbandry and Technicians in Animal Husbandry
May 9	-	Travelled to Colombo
	-	Studied Prospectus, budgets and special reports on FA and PGIA.
May 11 - 13	-	Detailed study of PP, PP Supplement, quarterly, annual, end of tour reports, special reports and minutes of CAED meetings.

May 12	-	Met with Dr Senanayake in Colombo
May 14 - 20	-	Developed Preliminary Draft
May 20	-	Presented preliminary conclusions and recommendations to Gary Nelson, Deputy Mission Director, John Flynn, ADO and Sithy Thaha, Project Officer.
May 21 - 25	-	Revised draft. Sent copy of Preliminary draft to Dr Senanayake on May 21.
May 26	-	Distributed copies of revised draft to USAID Mission Colombo and Drs Senanayake, Thenabadu and Gunasena at Peradeniya.
	-	checked details of draft
May 27	-	Travelled to Peradeniya and returned. Checked reports with Drs Senanayake, Thenabadu and Gunasena
May 28 - 30	-	Revised report
June 1	-	Debriefing report for USAID mission personnel.
	-	Finalized report
June 2 - 3	-	Had report printed
June 4	-	Departed Colombo

Annex H

Particulars of Non Returnees

Agricultural Education Development Project (383-0049)

Name	University	Degree	Current Whereabouts
1. ASriskantha	Penn. State	PhD.in Virology	Returned to duty Nov. 1985 worked for 6 months and left Sri Lanka. Supposed to be in Japan.
2. Lionel Perera	Penn. State	PhS in Agronomy	Returned to duty in Jan. 1984 and resigned in June 1984. Currently in Japan.
3. K Kailasapathy	Penn. State	PhD in Agric Chemistry	Returned in Oct. 1982 and left Sri Lanka in June 1986 Supposed to be in New Zealand.
4. S Pararajasingham	Penn. State	Completed PhD in Stress Physiology after the PACD.	Did not return Supposed to be in Us.
5. P Puvirajasinghe	Texas A&M	PhD in Agro climotology	Did not return. Supposed to be in US.
6. S Prathapar	Texas A&M	PhD in Soil/Water Consevation	Did not return. Attached to Arizona University.
7. V Rajakulendran	Texas A&M	PhD in Etomology	Did not return. Supposed to be in US.
8. K Jegasothy	Texas A&M	PhD in Ag Economics	Vacated post after completion of training. Did not return. Supposed to be in Canada.
9. G Fernandez	Texas A&M	PhD in Pulse Breeding	Vacated post after completion. Did not return. Working in Taiwan.

10.K Navaratnam	VPI	PhD in Extension Education	Did not return. Supposed to be in Canada.
11.S Jeyanayagam	VPI	PhD in Ag. Engineering	Did not return. Supposed to be in Canada.
12.K Nadarajah	VPI	PhD. in Animal Genetics	Did not return. Supposed to be in Canada.
13.R Mills	VPI	Did not complete his PhD in Farm/Power Tillage	Did not return. Supposed to be in US.

Annex I

Table I - Functions of Agriculture, Agricultural Education, and Related Personnel by Training Level for 1985 and 1985*

Level/Year	Administration**	Teaching	Advisory	Production	Research	Extension	Sales**	Regulatory
Certificate								
1985	1071	8		102	104	3303	6	280
1995	1174	16		335	108	5131	6	294
Diploma								
1985	653	2015	258	383	94	1286	25	110
1995	1271	2759	283	545	144	1420	25	129
BSc (Agri)								
1985	429	104	64	30	373	203	23	13
1995	864	307	83	149	621	463	36	25
BA (AgEcon)								
1985					2			
1995					3			
Post BA								
1985	62							
1995	62							
Post Grad Dip								
1985		4						
1995		4						
MSc (course)								
1985	49	38	23	10	141	22		
1995	61	47	28	20	146	26		
MPhil								
1985	17	49	3	6	103	3		
1995	25	65	9	13	113	5		
PhD								
1985	40	55	4	0	38	2		
1995	79	128	16	4	132	2		

* The function figures do not tally exactly with the total number of employees because some institutions did not include everyone in that section.

** Almost all administrators and sales personnel also perform technical functions.

NOTE: Diploma level trained agriculture teachers are included in these counts; they appear primarily in administration and teaching.

Source: Supply and Demand for Technical and University personnel in Agriculture, Animal Science and Fisheries in Sri Lanka.

A report prepared for USAID, Sri Lanka, by Development Associates, Inc., San Francisco, California, July 1985.

Annex J

Reports and data reviewed for the Evaluation:

1. Project paper, Sri Lanka, Agricultural Education Development (AED)

2. Project paper supplement No.1, Sri Lanka, Agricultural Education Development

3. Report of Project Evaluation, AED project, December 1982

4. Final Report 1979 - 86 Sri Lanka AED project, Academy for Education Development, Washington DC, 1986

5. The Supply of and Demand for Technical and University personnel in Agriculture, Animla Science, Fisheries and Forestry in Sri Lanka, Development Associates, Inc, SF, Ca.

6. First through seventh Annual Field Officer Reports, AED project

7. End of tour reports of Chiefs of Party Howard Ray and Steve Martin

8. Quarterly project reports

9. Randomly selected End of tour reports of technical assistants

10. Prospectus, 1985 - 88, Faculty of Agriculture

11. Prospectus, 1986, PGIA

12. Annual Report 1986

13. Newletter, FA, July/December 1986

14. Annual Statement of Accounts, PGIA, 1986

15. Procedings, Scientific Manpower in Asia by Gunasena, HPM and Herath, HMG, University of Peradeniya, 1984

16. Future Development of the Faculty of Agriculture and the Post Graduate Institute of Agriculture, University Grants Commission, by Gunasena, HPM, May 1986

17. The complete file of letters, cables, telexes and minutes of meetings in USAID Sri Lanka office on the attrition problems

Annex K

List of People Interviewed

1.	Howard Ray	-	Academy for Educational Development, Washington, DC
2.	Marguerita Driscoll	-	formerly with Academy for Educational Development, Washington DC.
3.	Charles Antholt	-	ADO, USAID, New Delhi
4.	Michael J Korin	-	ANE/TR/ARD, USAID Washington
5.	Charles M Uphaus	-	ANE/TR/ARD, USAID Washington
6.	Y D A Senanayake	-	Director, Post Graduate Institute of Agriculture, University of Peradeniya
7.	M W Thenabadu	-	Dean, Faculty of Agriculture, University of Peradeniya
8.	H P M Gunasena	-	Head, Department of Crop Science, Faculty of Agriculture, University of Peradeniya
9.	A S B Rajaguru	-	Head, Department of Animal Science, Faculty of Agriculture, University of Peradeniya
10.	J M R S Bandara	-	Head, Department of Agricultural Biology Faculty of Agriculture, University of Peradeniya
11.	H M S Herath	-	Head, Department of Agricultural Economics and Extension, Faculty of Agriculture, University of Peradeniya
12.	K G A Goonasekera	-	Head, Department of Agricultural Engineering, Faculty of Agriculture, University of Peradeniya
13.	U Samarajeewa	-	Head Department of Food Science, Faculty of Agriculture, University of Peradeniya
14.	G Keerthisinghe	-	Head Department of Soil Science, Faculty of Agriculture, University of Peradeniya
15.	Miss Shyamalie Dissanayake	-	Former Administrative Assistant to the Chief of Party
16.	J V Fernando	-	Asst Librarian, PGIA
17.	Miss I Madanayake	-	Asst Librarian, PGIA
18.	Neil C Perera	-	Senior Technician - Media Center
19.	S B Wijeyaratne	-	Technician - Agricultural Engineering
20.	K Seneviratne Banda	-	Technician - Animal Science
21.	R S Rajapakse	-	Asst. Registrar, PGIA

Participants

22.	S L Ranamukaarachchi	-	Dept of Crop Science
23.	B C N Pieris	-	Dept of Crop Science
24.	D G A H Perera	-	Dept of Crop Science
25.	N C Rajapakse	-	Dept of Crop Science
26.	Mrs S Rajapakse	-	Dept of Crop Science
27.	R O Thattil	-	Dept of Crop Science

28.	Miss S Panditharatne	-	Dept of Anmial Science
29	Mrs. E R K Perera	-	Dept of Animal Science
30.	Mrs I P Wickremasinghe	-	Dept of Agricultural Biology
31.	Mr D C Bandara	-	Dept of Agricultural Biology
32.	V A D Sumanasinghe	-	Dept of Agricultural Biology
33.	L G Yapa	-	Dept of Soil Science
34.	C Bogahawatte	-	Dept of Agricultural Economics and Extension
35.	C Sivayoganathan	-	Dept of Agricultural Economics and Extension
36.	M W A P Jayatilleke	-	Dept of Agricultural Economics and Extension
37.	A V G Piyasena	-	Dept of Agricultural Economics and Extension
38,	S M M Zuhair	-	Dept of Agricultural Economics and Extension
39.	A R Ariyaratne	-	Dept of Agriculture Engineering
40.	Mrs A A Jayasekera	-	Dept of Agriculture Engineering
40.	D N Jayatissa	-	Dept of Agriculture Engineering

USAID Staff

41.	Robert C Chase	-	Director USAID
42.	Gary L Nelson	-	Deputy Director, USAID
43.	Jan Emmert	-	Evaluation Officer, USAID
44.	John B Flynn	-	Chief, Office of Food & Agriculture Development, USAID
45.	Mrs Sithy Z Thaha	-	Project Officer, USAID

Annex L

Acknowledgements

I wish to express sincere appreciation to all the people in USAID, the Post Graduate Institute of Agriculture and the Faculty of Agriculture for their wholehearted cooperation andhelpfulness in conducting this evaluation.

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Sithy Z Thaha	- Program Specialist, USAID, Sri Lanka
Jan Emmert	- Evaluation Officer, USAID, Sri Lanka
Y D A Senanayake	- Director, Post Graduate Institute, University of Peradeniya
HPM Gunasena	- Head, Crop Science Department, Faculty of Agriculture, University of Peradeniya
Veronica Lawrence	- Secretary, USAID Sri Lanka
Christine Rajaratnam	- Who provided very able secretarial assistance in preparing the report

John O Dunbar
Consultant
Devres, Inc.