Chapter 3. Implementation Plan

Chapter 3. Implementation Plan

3-1 Implementation Plan

3-1-1 Implementation Concept

This project will be carried out by Japan's Grant Aid Program, and after the decision to execute the project is made by the Government of Japan, University of Peradeniya, which is the executing agency, will collaborate with other concerned agencies in Sri Lanka such as the Ministry of Education and Higher Education in preparing and arranging for the Exchange of Notes to be signed by both governments. Based on Exchange of Notes, they will also make the banking arrangement, the tax exemption for procuring project equipment, and for Japanese engineers and technicians. University of Peradeniya, after the signing of the Exchange of Notes, must make necessary arrangements at its own expense, to hire the consultant company for the preparation of the detailed design and for supervision of installation. University of Peradeniya shall select the supplier (succesful tenderer) based upon a result of price and technical evaluation to his bidding and enter contract agreements to implement this project.

In consideration that this project is implemented by Japan's Grant Aid Program, the basic concept for the installation works is summarized as follows;

(1) Close cooperation shall be maintained between University of Peradeniya, the Consultant, and the Supplier so that the project shall be executed smoothly.

(2) In order to complete the work within a limited period of time, inland transportation from the cargo unloading site at the port of Colombo, Sri Lanka and to the site of installation shall be made under the responsibility and expense of the Supplier.

(3) Some of the equipment provided by the project requires assembling and installation work, and some requires a high level of technical accuracy in operation. Therefore, Japanese engineers and technicians shall be dispatched to supervise the opening of

cases, as well as handling, and installation of such equipment. They will also give advice in trial operations, adjustments, and maintenance work in order to prevent breakage and lowering of performances by incomplete assembling and adjustments. The equipment and the fields in which Japanese engineers are expected to play important roles are as follows:

Analyzing equipment	:	HPLC, GC, Atomic Absorption Spectrophotometer, Amino Acid Analyzer, Automatic C /S Analyzer, etc.
Machine tools	:	Metal / Wood working lathe, Milling machine, Metal bender, etc.
Audio visual equipment	:	Video projector system, Public address system, etc.
Printing equipment	:	Offset Press, Film Processor, etc.
Equipment for irrigation	:	Pump for deep well, Pipe, etc.
Equipment for Agriculture	:	Net house, Circular rearing tank, Grinder (chopper) for compost making, etc.

(4) In consideration of future operation and maintenance of the equipment, special attention must be paid to transfer technology during execution of the work.

3-1-2 Implementation Conditions

The following points need special attention in the execution of the project.

(1) Because of insufficient available space/warehouse for temporary storage of a large quantity of equipment around the facilities of the Faculty of Agriculture, it is necessary to secure a space within the campus with cooperation of University of Peradeniya.

(2) The equipment under this project shall be installed in the existing facilities of the Faculty of Agriculture. Therefore, installation work and its period should be carefully planned so that the work should not interfere with routine educational and research activities.

3-1-3 Scope of Works

For project implementation, the work items to be undertaken by the Government of Japan and the Government of Sri Lanka are summarized as follows:

Table 3-1 Division of Work between Governments

Work Item	Japan	Sri Lanka
1. Detailed design work and supervision of installation	○	
2. Procurement of necessary equipment	○	
3. Transportation of equipment to project site and insurance	○	
4. Tax exemption procedure and customs clearance at the time of unloading at the port in Sri Lanka		○
5. Dispatch of engineers to supervise installation and trial operation and to give technical guidance in operation	○	
6. Pertinent and effective management and maintenance work		○
7. Procurement and installation of furniture and other equipment not included in this grant aid assistance		○
8. Transfer of partition walls necessary for installation of procured equipment and modification work of primary side facility (water supply, electricity supply, and sewage)		○
9. Burying of underground irrigation pipes for Dodangolla Experimental Farm and manufacture of primary water reservoir		○
10. Ground leveling and foundation for net house at Dodangolla Experimental Farm		○
11. Bank arrangement with Japanese foreign exchange banks and payment of commission		○
12. Exemption or bearing of all internal taxes and levies imposed on the equipment, materials, and services to be procured in Sri Lanka by Japanese companies for this project		○
13. Making of arrangements to enter/depart Sri Lanka, for the convenience of those Japanese nationals whose services may be required in connection with the project and who must stay in the country to perform their assigned tasks		○

The estimation of the cost borne by the Government of Sri Lanka is shown in Appendix 5.

3-1-4 Consultant Supervision

(1) In the supervision of the installation and trial operations, coordination of technical matters, administrative matters, and installation work between the concerned Sri

Lankan and Japanese parties will be very important. Therefore, the consultant engineer who will be sent to and will stay in Sri Lanka should possess managerial skills and shall be qualified and capable of providing technical guidance.

The engineer will be present in Sri Lanka during the period of equipment adjustment and test operation and will remain until all equipment is handed over to the Faculty of Agriculture, University of Peradeniya. The person in charge to support the engineer's activities in Sri Lanka will be appointed in Japan. He shall keep close contact with the concerned parties in Japan in order to facilitate smooth progress of the project implementation.

(2) The major duties of the engineer are to;

- Prepare monthly reports
- Decide the layout of equipment.
- Promote the progress of work undertaken by the Government of Sri Lanka.
- Witness the trial operations.
- Witness the inspection and hand over of equipment to the officials of Sri Lanka.
- Hold periodic meetings to facilitate the smooth progress of implementation work.
- Prepare a comprehensive report.

3-1-5 Procurement plan

The basic policy is to procure equipment manufactured in Sri Lanka in order to reduce the cost of transportation and to contribute to the economy of Sri Lanka. However, equipment and machinery that are not available in Sri Lanka, that are available in Sri Lanka but not capable of meeting the required level of performance or that are simply more expensive in Sri Lanka should be procured in Japan.

The equipment covered by this project is largely divided into laboratory equipment, agricultural machinery, audio-visual equipment, printing machinery, office equipment, personal computers, glassware, and a mini bus. Most of these pieces of equipment are not manufactured in Sri Lanka, but some of the agricultural machinery, office

equipment, printing machinery and the mini bus are made in Japan or in the third countries and commercially available in Sri Lanka. Among these, pieces of equipment which are judged equal in quality and price to those available in Japan should be procured in Sri Lanka, because maintenance work for these should be made easier.

Major pieces of equipment to be procured in Sri Lanka and the justifications are as follows:

Personal computers, printers, and their accessories	: Ones made in third countries and that are equal in quality and price are commercially available in Sri Lanka. They are judged to be advantageous in terms of maintenance work.
Rotary press	: Same as above
PVC pipes	: The one made in Sri Lanka meets the necessary quality requirements and the price is lower.

The equipment sent from Japan shall be transported to the port of Colombo by container ship, and after unloading and customs clearance the containers shall be loaded onto trailers and transported to the project site. In this way, the equipment shall be protected from robbery and damage by adverse weather.

3-1-6 Implementation schedule

The project will be carried out under Japan's Grant Aid Program in accordance with the following schedule:

(1) The Exchange of Notes (E/N) concerned with the objectives and contents of the project, and payment amount of grant aid required for the project will be signed by representatives of the Government of Sri Lanka and the Government of Japan.
(2) In accordance with the E/N, the Government of Sri Lanka will make banking arrangements with a Japanese foreign exchange bank for transferring the money covered by Japan's Grant Aid Program.

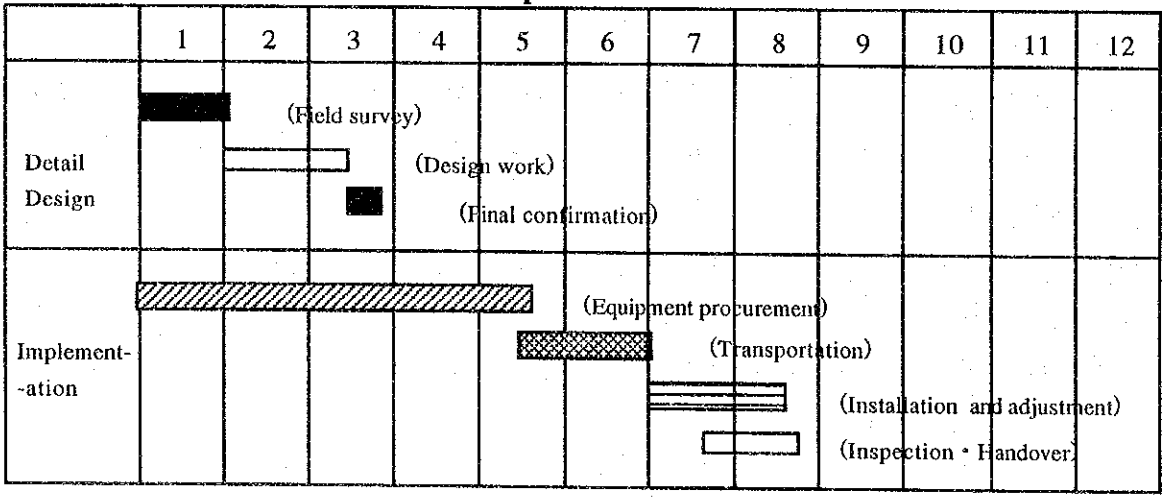
(3) The Government of Sri Lanka will enter a contract agreement with a Japanese consultant firm for the design and procurement services needed to fulfill the objectives of the project.

(4) The consultant shall carry out the field survey, and based on the findings, shall prepare the detailed design, tender documents with specifications of equipment, and obtain the approval of documents by the Governments of both countries.

(5) Public tenders shall be accepted from Japanese trading firms in the presence of representatives of concerned parties from both countries. The period between the time of the tender announcement and the time of concluding the procurement contract is expected to be about 1.5 months.

(6) The successful tenderer shall procure the equipment and materials required by the contract and deliver them to the Faculty of Agriculture, University of Peradeniya. The period between the signing of the contract and the time of completion of installation, adjustments, and handover of equipment to the Faculty is expected to be about 7.5 months.

Table 3-2 Implementation Schedule



3-1-7 Obligations of Recipient Country

The obligations of the Government of Sri Lanka are as follows:

(1) Tax exemptions and customs clearance procedures at the time of unloading the procured equipment at the port of Colombo in Sri Lanka.

(2) Appropriate and efficient operation and management of the procured equipment.

(3) Procurement and installation of furniture and other miscellaneous items not included in the grant aid assistance from Japanese government.

(4) Transfer of partition walls and modification work of primary facility (electricity supply, water supply, and sewage)

(5) Burying work of irrigation pipes and manufacture of primary water reservoir tank for Dodangolla Experimental Farm.

(6) Ground leveling and preparation work for the site of net house erection

(7) Banking arrangements with a Japanese foreign exchange bank and payment of commission.

(8) Tax exemption procedures or payment of taxes on the equipment, materials and services procured by Japanese companies in Sri Lanka for this project.

(9) Making arrangements for the convenience of the Japanese nationals arriving / leaving or staying in Sri Lanka in relation to customs and immigration procedures.

3-2 Operation and Maintenance Plan

The Faculty of Agriculture, University of Peradeniya shall be responsible for the operation and maintenance of the equipment procured and delivered under the project. Additionally, spare parts procured at the same time shall be stored and used properly under the control of the Faculty. After the spare parts are consumed, additional procurement will be borne by the Faculty.

The cost to be borne by the Faculty of Agriculture, University of Peradeniya for the operation and maintenance of the equipment is estimated as shown in Table 3-3.

Table 3-3. Annual Operation and Maintenance Cost

Item	Amount	Remarks
(1) Personnel cost	—	Operation and maintenance of the equipment under the project shall be managed by the present staff of the Faculty of Agriculture. No requirement for additional personnel is anticipated.
(2) Light and heat cost	—	Majority of the equipment will replace existing equipment. There are no particular pieces of equipment included in the project that require a large amount of heat or electricity.
(3) Expendables (Operation & Maintenance Cost)	Rs.900,000 (About ¥1.8 million)	1.5% of the cost of pieces of equipment that require expendables in operation such as analyzer, water distillation unit, etc.
(4) Maintenance Parts Procurement Cost (Maintenance cost)	Rs.180,000 (About ¥0.35 million)	0.2% of the cost of pieces of equipment excluding those mentioned in (3) above and those that will not generate expandable in operation.
(5) Maintenance Contract	Rs. 100,000 (About ¥0.2 million)	A contract for regular maintenance for computer units in the Faculty of Agriculture not including the cost of replacement parts.
Total	Rs. 1,180,000 (About ¥2.35 million)	

Note: Above-mentioned costs do not include procurement cost for additional equipment for the purpose of replacement.

Chapter 4. Project Evaluation and Recommendation

Chapter 4. Project Evaluation and Recommendation

4-1 Project Effect

4-1-1 Project Effect

When this project is implemented and completed, it will have a direct benefit on about 900 students in the Faculty of Agriculture and on its academic staff, numbering about 140. In addition, about 300 students enrolled in Postgraduate Institute of Agriculture (PGIA), who jointly uses the facilities and equipment of the Faculty of Agriculture, will also benefit similarly.

There are two sides of the effects of the project implementation.

① Micro side (short-term view) : Qualitative and quantitative improvement of educational equipment at the Faculty of Agriculture, University of Peradeniya

② Macro side (long-term view) : Modernization of agriculture and increase in agricultural production

The Former is the direct effect of this project. In comparison with the past, a higher level of quality education will be expected because students will be able to conduct experiments and research practically by themselves.

Many of the existing pieces of equipment at the Faculty were installed under assistance of the U.S. Government in 1979～85. In term of quality they are time worn and in terms of quantity there are many shortages. This has made it difficult for the Faculty to conduct education based on their curriculum.

According to present curriculum, first year and second year students should spend 40～50% of their lessons in experiments or practice. However, due to shortage of equipment, they rely on experiments/practice conducted by a demonstrator only and most of the experiments/practice are substituted by lectures. Consequently,

achievements in nurturing quality engineers with practical knowledge have been poor. There are considerable obstacles to conducting experiments and preparing graduation theses, where experiments by individual students or small groups of students are necessary. The students must rely on experiments conducted in research organizations outside the University, and even when the students can use the equipment in the Faculty, time permitted for their use is very limited.

If equipment of minimum requirement for each department were to be installed under the project, students would be able to perform many practical tests and experiments themselves. It is expected that the results and effect of study will improve greatly.

On the other hand, although agriculture is important as the base of economy in Sri Lanka, productivity of food crop is relatively low compared with that of other southwest Asian countries. Productivity has been affected by changes in weather, and a large quantity of food is imported into this country. Thus, it is widely recognized that production is frail and unstable at the same time.

Given this background, the Faculty of Agriculture, University of Peradeniya is experiencing difficulty in performing positive education based on practical agricultural technology, due to its outdated equipment and lack of equipment. With this project and the accompanying improvement in equipment, students by themselves shall be able to learn positive and scientific research methods in the fields that will meet the needs of the times.

At present, about 200 students graduate from the Faculty every year. Further, there are about 100 graduate students from three faculties in other universities, making a total of 300 students who receive higher education in agricultural field. It has been pointed out that this number is too small to serve as an adequate supply source of manpower to carry out development of agriculture, the key industry of this country. In order to cope with this, the government has been studying means of increasing the number of students in each university or establishing a new agricultural university. However, these means have not yet materialized. The Faculty of Agriculture, University of

Peradeniya has been strongly requested by the government to increase the number of students from 200 at present to 300 by the year 2000. This plan has not yet made any progress, mainly because of insufficient educational equipment. However, if the obstacle were to be removed by this project, the plan to increase the number of students should proceed smoothly, this is heartily expected to contribute to the increase in agricultural production of this country.

As to the latter goal, it is expected that the implementation of this project will accelerate the nurturing of skillful agricultural engineers. Further, development and extension work of agricultural technologies to be undertaken by these agricultural engineers in various fields of society in Sri Lanka will help promote agricultural modernization and increase agricultural production. Agriculture, forestry, and fishery are the key industries in Sri Lanka; accounting for about 20.3% of her GNP and about 36.8% of total labor population. In addition, if food security is taken into consideration, the indirect effect of this project should extend to all of the people of Sri Lanka. As to the effects of increasing agricultural production, there should be higher foreign currency earnings due to the improvement of estate agriculture, as well as higher savings of foreign currency presently spent on importing food due to the improvement of productivity of food crops such as rice and beans. The increase in agricultural production is further expected to contribute toward increasing and stabilizing farmers' incomes by diversification of farmers' agriculture and to increase income sources through promotion of vegetable, fruit, livestock, and fishery production. There is a possibility that the increase in production will lead to activation of the markets for agricultural products, development of rural industries and processing industries, and subsequently to export promotion.

Equipment covered under the project will be installed in various departments of the Faculty and will be used in extensive fields of study such as agriculture, forestry, horticulture, fishery, livestock, and their sub sectors. In such wide fields, the equipment can contribute to agricultural production by technical renovations such as;

- Improvement of varieties in agriculture, forestry, fishery, and livestock, as well as improvement in their cultivating methods
- Increase of land utilization through extending irrigated fields, soil improvement, etc.

- Improvement in farming system by technical transfer from extension workers
- Improvement in agricultural inputs (fertilizer, chemicals, machinery, etc.)
- Stabilization of farmers' living through diversification of agriculture
- Increase of farmers' incomes through development of processed food and its market.

Agricultural productivity is accelerated when these improvement measures are put into joint practice by organic and mutual cooperation of agricultural research organizations and extension offices. Nationwide effects of such improvement are expected.

4-1-2 Verification on Propriety

About 70% of all students who receive higher agricultural education in the country are enrolled in the Faculty of Agriculture, University of Peradeniya. The Faculty plays an important role not only as a supply source of manpower to the agricultural sector of Sri Lanka but also as a "Mother Institute" to contribute to the establishment and development of the faculties or departments of agriculture at other universities in this country.

Agriculture is the key industry in Sri Lanka; its sound development is indispensable to the stability of Sri Lanka's economy and her people's lives. From the viewpoint of nurturing manpower needed for agricultural development, the necessity of this project is judged to be very high.

This project is evaluated to have sufficient propriety and is worthy of grant aid assistance due to the following reasons:

① The purpose of the project is the nurturing of manpower, which is indispensable for agricultural development of Sri Lanka. Its effect will extend to the entire country once the overall objectives have been achieved.

② The project conforms to the present number of students and academic staff of the Faculty of Agriculture. It is judged that operation, maintenance, and management

are possible within the scope of the present technical and budgetary level of the Faculty.

③ The project coincides with the target of "nurturing of manpower" mentioned in the 14th Five-year Programme of Investment of the Government of Sri Lanka.

④ The project is not related to profit earning activity in the aid recipient country and there is no fear of adverse effect on the environment.

⑤ There is no particular problem or difficulty in carrying out this project under Japan's Grant Aid Program.

4-2 Recommendation

Presently there is no special hindrance to the implementation of the project with regard to the implementation system and the management capacity of the Faculty of Agriculture, University of Peradeniya. However, there are some points that should be taken into consideration, and the tasks that should be tackled by the Faculty at an early date as mentioned in the following items. After these matters are adequately addressed, implementation work should proceed more smoothly and after completion the result of operation should be more effective.

(1) Ensuring Proper Budget

As most of the equipment planned in this project is to replace existing equipment, it is expected that the present level of budget in University of Peradeniya should be able to cover the increase in recurrent expenses even when the increase in experiment frequency is taken into account. Further, as to the increased expense, the University Grant Commission, Ministry of Education and Higher Education expressed its opinion that there should be no problem in securing the budget if University of Peradeniya takes proper procedures. It is recommended that University of Peradeniya take proper and timely action in reference to the progress of the project implementation work.

(2) Proper Equipment Maintenance

At present, equipment maintenance records are prepared in the form based on annual

government inspections. Although present maintenance work seems generally good, in order to improve the quality of the maintenance work in the future it is recommended that both operational records and maintenance records be kept in order to monitor operating conditions and to prevent any serious accident or deterioration in quality .

(3) Joint Use

In this project joint use of equipment, mainly precision analyzing equipment, shall be practiced to the extent possible, in consideration of the frequency of use, location of equipment, etc. In actual practice, sharing of expenses for reagent, consumables, etc. and the cost for repair should be decided clearly and in detail.

Appendices

Appendix 1. Member List of the Survey Team

Name	Assignment	Organization
Mr. Nobuhide Sawamura	Team Leader	Senior Program Officer Grant Aid Project Study Department JICA
Prof. Dr. Miyoji Sugiura	Technical Advisor	Professor, Faculty of Agriculture (Director, Institute of Tropical Agriculture) Kyushu University
Mr. Makoto Yamada	Chief Consultant / Equipment Planner I	Chief Technical Advisor Consultant Department Overseas Merchandise Inspection Co.,Ltd. (OMIC)
Mr. Hiroshi Abo	Equipment Planner II	Consultant Department Overseas Merchandise Inspection Co., Ltd. (OMIC)
Mr. Yoshihiro Ban	Equipment Planner III	Consultant Department Overseas Merchandise Inspection Co., Ltd. (OMIC)

Appendix 2. Survey Schedule

No.	Data & Day		Team Leader and Techinacl Advisor	Chief Consultant / Equipment Planner I	Equipment Planner II	Equipment Planner III
1	8/ 11	Sun	Narita/Fukuoka12:00 (SQ997/SQ989) to Colombo 22:25	← ditto	← ditto	← ditto
2	12	Mon	Courtesy call on the Ministry of Education and Higher Education, Ministry of Finance and Planning Meeting with Embassy of Japan(EOJ) and JICA Sri Lanka Office	← ditto	← ditto	← ditto
3	13	Tue	Courtesy call on the University Grants Commission (UGC) Colombo to Peradeniya Explanation of contents and tentative schedule of the study to Faculty of Agriculture,University of Peradeniya (FAUP)	← ditto	← ditto	← ditto
4	14	Wed	Site survey and discussion with FAUP	← ditto	← ditto	← ditto
5	15	Thu	Site survey and discussion with FAUP	← ditto	← ditto	← ditto
6	16	Fri	Site survey and discussion with FAUP	← ditto	← ditto	← ditto
7	17	Sat	Team meeting and examination of data	← ditto	← ditto	← ditto
8	18	Sun	Peradeniya to Colombo	← ditto	← ditto	← ditto
9	19	Mon	Report to Ministry of Education and Higher Education, Ministry of Finance and Planning. Signing of the Minutes of Discussions	← ditto Colombo to Peradeniya	← ditto	← ditto
10	20	Tue	Report to EOJ and JICA Sri Lanka Office	Site survey and discussion at FAUP	← ditto	← ditto
11	21	Wed	Colombo 03:00 (CX700) to Bangkok 07:20	Site survey and discussion at FAUP	← ditto	← ditto
12	22	Thu	Bangkok 08:40 (JL734) to Narita 20:20 Bangkok 10:15 (TG648) to Fukuoka 17:35	Survey and discussion at Dodangola Farm	← ditto	← ditto
13	23	Fri		Technical survey at Institute of Fundamental Studies, Kandy	← ditto	← ditto Techinacal survey at AV Center, DOA, Gannoruwa
14	24	Sat		Examination of data	← ditto	← ditto
15	25	Sun		Team Meeting and examination of data	← ditto	← ditto
16	26	Mon		Site survey and discussion at FAUP	← ditto	← ditto
17	27	Tue		Site survey and discussion at FAUP	← ditto	← ditto
18	28	Wed		Site survey and discussion at FAUP	← ditto	← ditto
19	29	Thu		Site survey and discussion at FAUP	Data collection for cost estimation	Data collection on maintenance survices
20	30	Fri		Discussion on the equipment with FAUP	← ditto	← ditto
21	31	Sat		Examination of data	Peradeniya to Colombo	Examination of data
22	9/ 1	Sun		Examination of data	Examination of data	Peradeniya to Colombo
23	2	Mon		Supplemental data collection	Techinacal survey at University of Moratuwa	Market survey
24	3	Tue		Supplemental data collection	Techinacal survey at University of Colombo	Market survey
25	4	Wed		Peradeniya to Colombo	Market survey	Data collection for transportation & port handling
26	5	Thu		Data collection at UNDP, USAID	← ditto	Data collection for cost estimation
27	6	Fri		Report to Ministry of Education and Higher Education, Ministry of Finance and Planning, UGC Report to EOJ, JICA Sri Lanka Office	← ditto	← ditto
28	7	Sat		Colombo (SQ401) 00:55 to Singapore 06:15 Singapore (JL712) 08:05 to Narita 15:55	← ditto	← ditto

Appendix 3. Member List of Party Concerned in the Recipient Country

Sri Lanka Side

Ministry of Education and Higher Education

Mr. M.D.D. Pieris	Secretary
Mr. C. Abeygunawardena	Additional Secretary - Higher Education

Ministry of Finance and Planning, Department of External Resources

Ms. D.D.J. Kudaligama	Additional Director General

Ministry of Policy Planning and Implementation, National Planning Department

Ms. P. Alailima	Director

University Grants Commission

Prof. S. Tilakaratna	Chairman
Prof. S. Pathmanathan	Vice-Chairman
Mr. R.H.M. Piyasena	Additional Secretary - Academic Affairs

University of Peradeniya

Prof. C.M. Madduma Bandara	Vice-Chancellor

University of Peradeniya, Faculty of Agriculture

Dr. M.W.A.P. Jayatilaka	Dean
Mr. U. Atukorala	Assistant Registrar
Prof. R.O. Thattil	Head/Dept. of Crop Science
Dr. H.N.P. Wijegunasekara	Head/Dept. of Agric. Biology
Dr. A.N. Jayakody	Head/Dept. of Soil Science
Dr. (Ms.) D.C.R. Illeperuma	Head/Dept. of Food Science & Technology
Dr. H.W. Cyril	Head/Dept. of Animal Science
Prof. C. Bogahawatte	Head/Dept. of Agric. Extension
Dr. H.V.A. Wickramasuriya	Acting Head/Dept. of Agric. Economics
Dr. A.R. Ariyaratna	Head/Dept. of Agric. Engineering

University of Agriculture, Postgraduate Institute of Agriculture (PGIA)

Prof. Y.D.A. Senanayake	Director

Japan Side

Embassy of Japan

Mr. Fumihiro Kawamura	Second Secretary
Mr. Yasuhiro Morimoto	Second Secretary

JICA Sri Lanka Office

Mr. Yoshikatsu Nakamura	Resident Representative
Mr. Takahiro Morita	Assistant Resident Representative
Mr. Shinji Yoshiura	Assistant Resident Representative

Appendix 4. Minutes of Discussions

MINUTES OF DISCUSSIONS
BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF EDUCATIONAL EQUIPMENT FOR THE FACULTY OF AGRICULTURE, UNIVERSITY OF PERADENIYA IN THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA

In response to a request from the Government of the Democratic Socialist Republic of Sri Lanka, the Government of Japan decided to conduct a Basic Design Study on the Project for the Improvement of Educational Equipment for the Faculty of Agriculture, University of Peradeniya (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Sri Lanka a study team, which is headed by Mr.Nobuhide Sawamura, Second Project Study Division, Grant Aid Project Study Department, JICA, and is scheduled to stay in the country from August 11 to September 6, 1996.

The team held discussions with the officials concerned of the Government of Sri Lanka and conducted a field survey at the study area.

In the course of discussions and field survey, both parties have confirmed the main items described on the attached sheets. The team will proceed to further works and prepare the Basic Design Study report.

Colombo, August 19, 1996

Mr. Nobuhide Sawamura
Leader
Basic Design Study Team, JICA

Mr. M.D.D. Pieris
Secretary
Ministry of Education and Higher Education

Witness of:

Prof. S. Tilakaratna
Chairman
University Grants Commission

Mrs. D.D.J. Kudaligama
Additional Director General
Department of External Resources
Ministry of Finance and Planning

Prof. C.M. Madduma Bandara
Vice-Chancellor
University of Peradeniya

ATTACHMENT

1. Objective

The objectives of the Project are: 1) to upgrade the educational quality, 2) to strengthen the research activities of students and 3) to enhance the current and future contribution to national agricultural development, through improving educational equipment for the Faculty of Agriculture, University of Peradeniya.

2. Project site

The site of the Project is located in Faculty of Agriculture, University of Peradeniya.

3. Responsible Ministry and Executing agency

3.1 Responsible Ministry : Ministry of Education and Higher Education
3.2 Executing Agency : University of Peradeniya

4. Items requested by the Government of Sri Lanka

After discussions with the Basic Design Study Team, the items as in ANNEX I were finally requested by the Sri Lanka side.

However, the final components of the Project will be decided by the Basic Design Study Team after further studies in Japan on the basis of the scope of the Project under the Japan's Grant Aid.

5. Japan's Grant Aid system

1) The Government of Sri Lanka has understood the system of Japan's Grant Aid explained by the Team (ANNEX II).
2) The Government of Sri Lanka will take the necessary measures described in Annex III for smooth implementation of the Project on condition that the Grant Aid assistance by the Government of Japan is extended to the Project.

6. Schedule of the Study

1) The consultants will proceed to further studies in Sri Lanka until September 6, 1996.
2) Based on the Minutes of Discussions and technical examination of the study results, JICA will complete the final report and send it to the Government of Sri Lanka by the end of February, 1997.

7. Other relevant issues

1) On condition that Japan's Grant Aid is extended to the Project:
   a) University of Peradeniya will provide necessary personnel and budgets for effective operation and maintenance of the equipment and apparatuses procured under the Project.
   b) University of Peradeniya will conduct necessary renovation of facilities of the laboratories to meet the requirement for the equipment and apparatuses procured under the Project.
   c) in connection of a) and b) above, University Grants Commission, Ministry of Education and Higher Education will secure necessary budget to be allocated for the Project.
2) Both sides agreed to place higher priorities on the basic equipment used for undergarduate students.

3) The following criteria will be applied for selection of the final components for the Project:
   a) relevance of curriculum
   b) relevance of facility
   c) priority and urgency of the equipment
   d) operation and maintenance cost
   e) environmental hazards

ANNEX I

Major items requested by the Government of Sri Lanka

Department and Category	Item	Priority
AGRICULTURAL BIOLOGY		
	Water still	A
	Amino acid analyzer	(C)
	Growth cabinet	A
	Cold room, Cabinet type	A
	Deep freezer	A
	Electrophoresis equipment with cuvettes	A
	UV scanning densitometer & computer interface	A
	Fume Hood	A
	Spectrophotometer, UV	A
	DNA Synthesizer	B
	Microplate reader	A
	Cold room or chamber	A
	Microscope, Inverted	A
	Oven, Chromatography	(C)
	Centrifuge	A
	Photosynthesis meter, Portable	A
	Cold room	A
	Microscope, Polarizing	A
	Infra red gas analyzer, Portable	C
	Thermocouple Psychometer	A
	Porometer	A
	Spectro photometer	A
	Gas Chromatograph	(C)
	Quantum Radiometer Photometer	A
	MicroScope, students	A
	Lamina flow	A
	Public address system	B
	PCR Thermocycler	B
	Dewar flasks	B
	Vortex Rotamix	B
	Sonicator	B
	Microscope Polarizing	C
	Gel tank Pharmacia	B
AGRICULTURAL ENGINEERING		
	Tractor, 4 Wheel	A
	Trailer	A
	Chroma meter	A
	Environment control chamber	A
	Metal Working Lathe	A
	Milling Machine	A
	Wood Working Lathe with Copying attachment	A
	Tenoon Cutting Machine	A
	Shaping Machine	A
	Hand tool set	A
	Metal Bender	A
AGRICULTURAL ECONOMICS		
	Car, 4WD Double Cab for Research data collection	C
	Computer	A
	Paper cutter, Electric (36")	C
AGRICULTURAL EXTENSION		
	Video Camera	A
	Video Editing system (A/B Roll Component w/ Special effects generator)	A
	Digital Audio Field Recorder	A
	Video Projector	(C)
	Direct Projector	B
	Satellite Antenna	C
	Color Slides Processor for E-6 processing	C

Department and Category	Item	Priority
	Audiovisual Van	B
	FM Transmitter (2 KW)	C
	FM Transmission Antenna	C
	DAT(Digital Audio Tape) Editing system	B
	Computer, w/ Desk top publishing	A
	Digital Duplicator (Risograph)	A
	Roneo Machine	A
	Color photocopier	C
	Vehicle	C
ANIMAL SCIENCE		
	Spectrophotometer with UV	A
	Fibertec	A
	Kjltec	A
	Bomb Calorimeter	A
	Herbage Dryer	A
	Blood cell counter, Semi Automated differential	A
	Centrifuge, Bench top refrigerated w/ accessory	A
	Automatic gamma counter	C
	Scintillation counter, Liquid	C
	Centrifuge, Butyrpmeter	A
	Incubator, Reach in	A
	HPLC	A
	Atomic absorption spectrophotometer	A
	Pilot meat product processing pla n	A
	Tenderometer	A
	Croma colour meter	A
	Cold room	A
	Fume cupboard	A
	High speed (15,000rpm) refrigerated centrifuge and accessories	B
	Freeze dryer	B
	Phase contrast Microscope with monitor projector accessories	B
	Pastturizer	B
	Flame Photometer	B
	Microscope camera system and accessories	B
	Butter churner	B
	Maturation chamber	B
	Grass harvester	C
	Hay bailing machine	C
CROP SCIENCE		
	Irrigation equipment for 10 Ha	B
	Tractor, 4 Wheel w/ trailer and all implements	A
	Tube well - Deep water	B
	Plant/glass house w/ shade control	B
	Water pump, Irrigation	B
	Leaf area meter, Complete leaf area unit	A
	Light quantum meter	A
	Greenhouse equipment, Complete set	A
	Environmental chambers, Complete set	A
	Germination cabinet, Automatic daylight model	A
	Pulverizer	A
	Microtome, Precision Rotary Microtome	A
	Distillation unit, Complete unit	A
	Porometer	(C)
	Scholander Pressure bomb	A
	Kjeldahl unit, Micro	A
	Spectrophotometer	A
	Flamephotometer w/ filters for K, CA & Mg Analysis	A
	Field weather station, complete set	A
	Illuminated growth unit, Complete set	A
	Fume cupboard	A
	Scintillation counter, Liquid, 14C Analysis	C
	Laminar flow, Purifier class II safety cabinet	A
	Deepfreezer (20 cu.ft.)	(C)

Department and Category	Item	Priority
FOOD SCIENCE AND TECHNOLOGY		
	Gas Chromatograph System	A
	Fume cupboard	A
	Centrifuge. Bench top	A
	Laminar flow cabinet	A
	Brabender Visco-Amylograph	C
	HPLC	A
	Amino acid analyzer	A
	Fluorometer	A
	UV Spectrophotometer. Double beam with kinetics	A
	Centrifuge, Refrigerated	A
	Extruder	C
	Atomic absorption spectrophotometer	A
	Internal communication system	C
SOIL SCIENCE		
	Fume cupboard	A
	Oven. Large laboratory	A
	Permeameter	A
	Pressure plate apparatus	A
	UV Spectrophotometer	A
	Automatic titrator (potentiograph)	A
	Automatic Analyzer	A
	Automatic C-Analyzer	C
	Automatic N-Analyzer	C
	Combined C & S-Analyzer apparatus	C
	Atomic absorption spectrophotometer	A
	HPLC	A
	ICPA	C
	X-ray defractometer	B
	Spectrophotometer. Emission. 15N	C
	Scintillation counter	C
	Geiger counter	C
	Neutron probe (for soil water)	C
	Radio Isotope fume hood	C
	Gas Chromatograph	A
	4WD-Double cabin field vihicle	C
	Computer set (complete)	A
	Restructuring material for green house	B
AGRICULTURE LIBRARY		
PRINTING UNIT	Offset Press and relevant equipment	B
LIBRARY	Security System	C
	Computer	B
	Photocopier	A
	Overhead Projector	A
AUDITORIUM	Stage curtaining	C
	Seat	C
	Public Address System	A
	Video Projector	A
	Film Projector	B
GENERAL		
	Computer for copmuter unit	B
	Computer Network System	B
	Mini-bus 20 seater	C
	Public Address System for class rooms	A
	Overhead Projector	A
	Steel locker	C
	Pickup Truck for Mahailluppallama	C
	Car for deans office	C

Remarks : A ; High, B ; Medium, C ; Low, (C) ; Joint use

ANNEX II

Japan's Grant Aid Scheme

1. Grant Aid Procedures

1) Japan's Grant Aid Program is executed through the following procedures:

Application	(Request made by a recipient country)
Study	(Basic Design Study conducted by JICA)
Appraisal & Approval	(Appraisal by the Government of Japan and Approval by Cabinet)
Determination of Implementation	(The Notes exchanged between the Governments of Japan and the recipient country)

2) Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using (a) Japanese consulting firm(s).

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Program, based on the Basic Design Study report prepared by JICA, and the results are then submitted to the Cabinet for approval.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes signed by the Governments of Japan and the recipient country.

Finally, for the implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

2. Basic Design Study

1) Contents of the Study

The aim of the Basic Design Study (hereafter referred to as "the Study"), conducted by JICA on a requested project (hereafter referred to as "the Project") is to provide a basic document necessary for the appraisal of the Project by the Japanese Government. The contents of the Study are as follows:

a) Confirmation of the background, objectives, and benefits of the requested Project and also institutional capacity of agenciesconcerned of the recipient country necessary for the Project's implementation.

b) Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.

c) Confirmation of items agreed on by both parties concerning the basic concept of the Project.

d) Preparation of a basic design of the Project

e) Estimation of costs of the Project

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of Japan's Grant Aid Scheme.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

2) Selection of Consultants

For smooth implementation of the Study, JICA uses (a) registered consultant firm(s). JICA select (a) firm(s) based on proposals submitted by interested firms. The firm(s) selected carry(ies) out a Basic Design Study and write(s) a report, based upon terms of reference set by JICA. The consulting firm(s) used for the Study is(are) recommendedby JICA to the recipient country to also work on the Project's implementation after the Exchangeof Notes, in order to maintain technical consistency and also to avoid any undue delay in implementation should the selection process be repeated.

3. Japan's Grant Aid Scheme

1) What is Grant Aid?

The Grant Aid Program provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economicand social development of the country under principles in accordance with the relevant laws and regulations of Japan. Grant Aid is not supplied through the donation of materials as such.

2) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with Notes exchanged by the two Governments concerned, in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

3) "The period of the Grant Aid" means the one fiscal year which the Cabinet approves the Project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding contracts with (a) consultant firm(s) and (a) contractor(s) and final payment to them must be completed. However in case of delays in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

4) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.

When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country.

However the prime contractors, namely, consulting constructing and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

5) Necessity of "Verification"

The Government of recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability to Japanese taxpayers.

6) Undertakings required of the Government of the Recipient Country

In the implementation of the Grant Aid project, the recipient country is required to undertake such necessary measures as the following:

(1) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the construction.

(2) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites.

(3) To secure buildings prior to the procurement in case the installation of the equipment.

(4) To ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid.

(5) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts.

(6) To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the Verified contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.

(7) "Proper Use"
The recipient country is required to maintain and use the facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

(8) "Re-export"
The products purchased under the Grant Aid should not be re-exported from the recipient country.

(9) Banking Arrangements (B/A)

a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts.

b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an authorization to pay issued by the Government of the recipient country or its designated authority.

ANNEX III

Necessary measures to be taken by the Government of Sri Lanka in case Japanese Grant Aid is executed.

1. To undertake renovation work on the facility of buildings contemplated to install the equipment:
   1) Electric work for receiving, transforming and distribution of electric power to the designated laboratory/room.
   2) Water supply, drainage and sewage works.
   3) Electric lighting work.
   4) Interior work.
   5) Air conditioning work, if necessary.
   6) General furniture such as curtains, tables, chairs and others.
2. To undertake relocation work of the existing equipment.
3. To bear commissions to the Japanese foreign exchangebank for the banking services based upon Banking Arrangement.
4. To exempt taxes and to take necessary measures for customs clearance of the equipment and materials brought for the Project at the port of disembarkation.
5. To secure yard for stocking equipment and materials at the Project site.
6. To accord Japanese Nationals whose services may be required in connection with the supply of products and the services under the verified contract such facilities as may be necessary for their entry into Sri Lanka and stay therein for the performance of their work.
7. To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in Sri Lanka with respect to the supply of the products and services under the verified contracts.
8. To maintain and use properly and effectively the equipment purchased under the Grant.
9. To bear all the expenses, other than those to be borne by the Grant, necessary for the Project.

Appendix. 5 Cost Estimation Borne By the Recipient Country

The project cost as borne by the Government of Sri Lanka is estimated to be Rs. 1,864,000.

1)	Modification works for building and facility	Rs.1,515,000 (Approx.¥3 million)
2)	Commissions for banking arrangements (0.1% of E/N)	Rs. 331,000 (Approx.¥0.655 million)
	Total :	Rs. 1,846,000 (Approx. ¥3.655 million)

Conditions for the estimate are:

Time of estimate	:	December 1996
Exchange rate	:	1 US$ = ¥110 1 US$ = Sri Lanka Rs 55.69
Period of work	:	Within one fiscal year. The time taken for detailed design and procurement of equipment is as shown in Table 3-2 in Chapter 3.
Others	:	The project shall be executed under the system of the Grant Aid Program of the Government of Japan.

Appendix 6. References

No.	Title	Issued by	Year of issue
1	Univerity of Peradeniya	University of Peradeniya	1991/1992
2	Faculty of Agriculture, PROSPECTUS 1991 -1995	University of Peradeniya	1996
3	Three Year Development Plan for The University of Peradeniya 1994-1996	University of Peradeniya	Jan. 1994
4	Jubilee Year Publication, Faculty of Agriculture and Postgraduate Institute of Agriculture, "Education for Wisdom" 1942 -1992	University of Peradeniya	July 1992
5	*Statistical Hand Book 1992, University of Peradeniya*	Statistical Unit, University of Peradeniya	*June 1994*
6	The University System of Sri Lanka, Vision and Reality (ICES Sri Lanka Studies Series)	International Centre for Ethnic Studies, Kandy	1995
7	Proceedings of the Annual Staff Research Sessions 1993	Faculty of Agriculture, University of Peradeniya	1993
8	Third Annual Staff Research Sessions 1994	Faculty of Agriculture, University of Peradeniya	1994
9	Fourth Annual Reserch Sessions 1995	Faculty of Agriculture, University of Peradeniya	1996
10	*University of Peradenia Programme Budget 1996*	*University of Peradeniya*	*1996*
11	Research Directory 1942-1992	Faculty of Agriculture, University of Peradeniya	1993
12	Abstracts -Final Year Research Projects 1992	Faculty of Agriculture, University of Peradeniya	1994
13	Research Interests	Faculty of Agriculture, University of Peradeniya	Nov. 1995
14	Postgraduate Institute of Agriculture -Theses in Agricultural Sciences 1988-1993	University of Peradeniya	Oct. 1994
15	Prospectus 1994 - 1996, Postgraduate Institute of Agriculture	PGIA, *University of Peradeniya*	*1996*
16	Postgraduate Institute of Agriculture, A Decade of Research (PGIA Occasional Publication No.1)	PGIA, University of Peradeniya	Oct. 1988
17	MORE OPEN THAN USUAL, An Assessment of the Experiment in University Education at Peradeniya and its Antecedents	University of Peradeniya	1992
18	Agricultural Education System in Asia, Sri Lanka	Asian Productivity Organization	1996
19	Agricultural Education Development Project, Final Report 1979-1986 (Main Report)	USAID	Sep. 1986
20	Agricultural Education Development Project, Final Report 1979-1986 (Annex 1 - 7)	USAID	Sep. 1986
21	CIDA PROGRAMS IN ASIA : SRI LANKA	Canadian International Development Agency, Asian Branch	June 1993
22	*Development Co-operation, 1994 Report*	*UNDP*	*Dec. 1995*
23	Development Co-operation, 1993 Report	UNDP	March 1995
24	Central Bank of Sri Lanka, Annual Report 1995 (latest issue)	Central Bank of Sri Lanka	April 1996
25	Economic & Social Statistics of Sri Lanka - 1994 (latest issue)	Central Bank of Sri Lanka	Dec. 1995
26	National Accounts of Sri Lanka -1994 (latest issue)	Department of Census and Statistics, Ministry of Finance	
27	Quartely Report of the Sri Lanka Labour Force Survey, First Quarter 1995	Department of Census and Statistics, Ministry of Finance	
28	Statistical Abstract - 1994 (latest issue)	Department of Census and Statistics, Ministry of Finance	
29	Statistical Hand Book 1991	Division of Planning & Research, Univeresity Grants Commision	1992
30	Statistical Hand Book 1994	Division of Planning & Research, Univeresity Grants Commision	1995
31	Public Investment 1993-1997	*Department of National Planning,* Ministry of Policy Planning & implementation	1993
32	*National Policy Framework Agriculture, Lands and Forestry*	Ministry of Agriculture, Lands and Forestry	*1995*
33	National Workshop on Higher Education Policy	National Education Commision 1995	1995
34	Policy Paper for Change and Development in Higher Education	*United Nations Educational, Scientific* and Cultural Organization	1995