

**The Democratic Socialist Republic
of Sri Lanka**

**The Preliminary Survey Report
of
the Technical Cooperation on
the Agricultural Development Center Project**

March, 1980

Japan International Cooperation Agency

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PREFACE

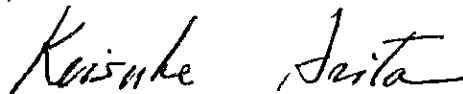
In response to the request of the Government of the Democratic Socialist Republic of Sri Lanka, the Japanese Government decided to conduct a preliminary survey for the technical co-operation on the Agricultural Development Centre Project and entrusted the survey to the Japan International Cooperation Agency. The J.I.C.A. sent to Sri Lanka a survey team headed by Mr. Shigeru Tamesue from November 24 to December 9, 1979.

The team exchanged views with the officials concerned of the Government of Sri Lanka and conducted a field survey in Mahaweli development area, in Sri Lanka. After the team returned to Japan, further studies were made and the present report has been prepared.

I hope that this report will serve for the development of the Project and contribute to the promotion of friendly relations between our two countries.

I wish to express my deep appreciation to the officials concerned of the Government of Sri Lanka for their close cooperation extended to the team.

March, 1980

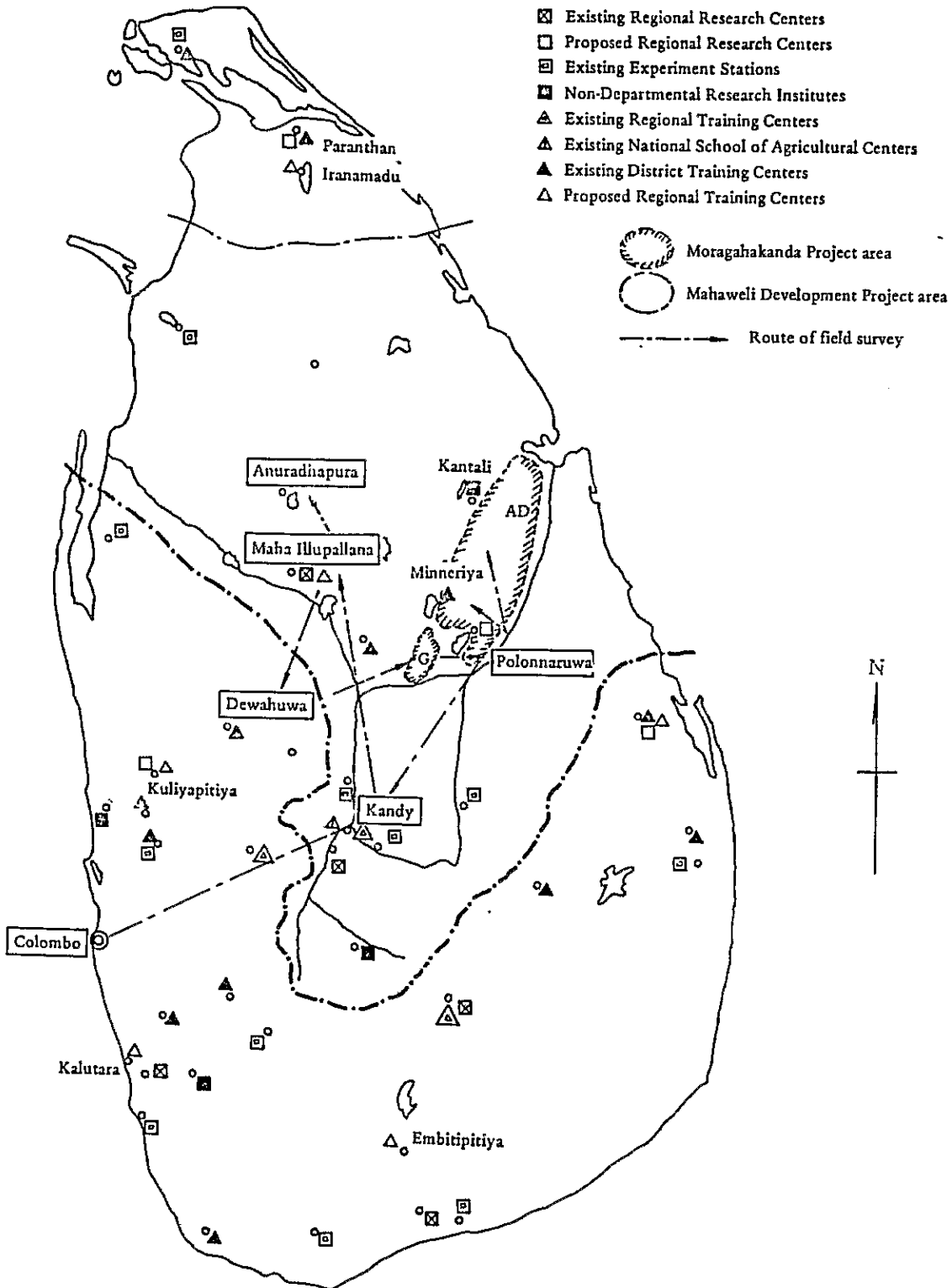


Keisuke Arita

President

Japan International Cooperation Agency

The locations of institutes of agriculture research and training
and the route of field survey



CONTENTS

Preface

I.	Introduction	1
II.	The Outline of the Survey	2
II-1	Preparation	2
II-2	Identification of the Request from Sri-Lankan Authorities	2
II-3	Field Survey	3
II-4	Needs for Technical Cooperation	9
II-5	Exchange of Views with the Government Authorities	11
III.	Interim Report	13
IV.	Recommendations on Future Technical Cooperation	13
IV-1	Development after Departing Sri-Lanka	13
IV-2	Recommendations on Future Technical Cooperation	14
Annex:		
I.	Member List of Preliminary Survey Team	16
II.	Record of Itinerary	17
III.	Letter of Request of Technical Cooperation from the Government of Democratic Socialist Republic of Sri Lanka	19
IV.	Draft Outline of Operation Plan of Japanese–Sri Lanka Technical Cooperation Project on Agricultural Development Center Prepared by the Preliminary Survey Team	20
V.	Interim Report on the Preliminary Survey Team	25
VI.	Letter from Mr. N.G.P. Panditharatne, Director-General, Mahaweli Authority of Sri Lanka	31
VII.	Letter from Mr. S. Tamesue, Leader of the Preliminary Survey Team	32
VIII.	Summary of Interview with Farmers	34

I. INTRODUCTION

Early in 1978, the Government of Sri Lanka requested the Government of Japan to extend cooperation in conducting a feasibility study on the Moragahakande Agricultural Development Project. Having priority over other national development projects, this is one of the most important projects in the Sri Lanka government's overall Mahaweli River Development Program to harness the Mahaweli River for irrigating the dry zone in the northern part of the country.

In response to this request, in 1978 and 1979, the Government of Japan conducted a feasibility study on construction of the Moragahakande Dam and subsequent agricultural development in the lower basin of the Mahaweli River. A report of this study, titled "Feasibility Report on Moragahakande Agricultural Development Project" was submitted to the Government of Sri Lanka in November 1979.

To carry out the comprehensive Mahaweli River Development Program, including the Moragahakande Dam and subsequent irrigation work, the pertinent hardware, improvement of cultivation techniques for rice and upland crops, agricultural economics, marketing system, farmer's organization and management of farms, and so forth must organically be undertaken and combined for integrated agricultural development.

In July 1979, the Government of Sri Lanka requested the Government of Japan to extend a technical cooperation in the down-stream area of Moragahakande Dam, which aims at rural development through introducing improved systems of agricultural technology, establishing an agricultural development center (training center) and demonstration farms (pilot projects) (See ANNEX III).

On 24 November 1979, the Government of Japan dispatched the preliminary survey team (hereinafter referred to as "the team"), headed by Mr. Shigeru Tamesue, Deputy Director of the International Cooperation Division, Economic Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries, to Sri Lanka for 15 days in order to confirm details of the request mentioned above to collect the first hand information about the needs of the technical cooperation through field survey and to discuss the possibility to formulate a technical cooperation project with the Sri Lankan officials concerned. (See Annex I and II)

During its stay in Sri Lanka, the team had satisfactorily conducted the survey and exchange of views with Sri Lankan officials. Accordingly, they had got a lot of knowledge and information of the agriculture relevant to the possible project.

In the present report, however, the data and information on policies and current situation of Sri Lankan agriculture are mostly omitted, because most readers of the present report are probably Sri Lankan officials who know them well. But they are compiled in the report in Japanese.

II. THE OUTLINE OF THE SURVEY

II-1. Preparation

After having examined carefully the request from the Sri Lankan government on the technical cooperation of the agricultural development in the downstream area of the Moragahakande Dam, the team formulated a draft operation plan of the technical cooperation (See Annex II) based on the request, for the convenience of understanding the way of technical cooperation project of the Japanese Government.

II-2. Identification of the Request from Sri-Lankan Authorities

After arrival in Colombo, the team called on the Ministry of Finance and Planning, Ministry of Mahaweli Development, Ministry of Agricultural Development and Research and Ministry of Land and Land Development (See Annex II) to have knowledge of the details of the request and to exchange views on the matters as follows;

- (1) The background and the contents of the requested technical cooperation given by the Ministry of Mahaweli Development are summarized as follows:
 - a. As concluded in the feasibility study for the Moragahakande Project and its downstream development in System D and G, the downstream development covers, besides irrigation facilities, the settlement of about 54,000 acres of new land. In order to implement successful settlement and rural development program in these areas, it is essential to establish a training centre and pilot project for field level personnel, i.e. agricultural extension workers, supervisors of water management, other officials at village level and farmers and farm youths. It is also stressed that, at first, farmers should apply the most suitable technology including water management to their farming, secondly, processing and marketing of their products should be supported by agro-based industry and thirdly, community development should not be neglected for the integrated rural development in the Moragahakande downstream area.
 - b. The Government of Sri Lanka has, therefore, submitted the request of the Technical Cooperation Project for realizing the program stated above, and would appreciate it if the Government of Japan could consider commencing implementation of this project in System D of the Mahaweli Development area as soon as possible. In addition, a grant aid from Japanese Government is most desirable for providing the building, related facilities and infrastructures necessary for implementation of the above Technical Cooperation Project.
 - c. Since agricultural extension works and training activities are under the system of the Ministry of Agricultural Development and Research and irrigations are under the Ministry of Land and Land Development, a coordination among the Ministries concerned is essential for realization of cooperation for this program. The Mahaweli Authority will play the role of coordinator under the Mahaweli Authority of Sri Lanka Act.

- (2) The team clarified and made comments on certain points stated above besides explaining the team's idea for the possible Technical Cooperation Project based on the Draft Operation Plan (ANNEX IV).
- a. Some adaptive research works and trial activities are indispensable for agricultural training and extension works in order to find the most suitable system of technology to the region concerned.
 - b. For successful implementation of this project, a step-by-step approach might be more useful instead of a too ambitious one in the scope of activities. In addition, it would be wise to train officers like Community Development Officers by local arrangement, because of the difference of cultural backgrounds and customs between Sri Lanka and Japan.
 - c. It would, therefore, be a practicable way to concentrate the training into the middle-level technicians such as K.V.S.s, A.I.s and Irrigation Officers at field level in the project.
 - d. The coordination among the Ministries concerned is a prerequisite to discuss the possibility of formulating the project so that a Ministry would be designated to have direct responsibility for it.
- (3) The official of the Ministry of Agricultural Development & Research stated that the Ministry was willing to cooperate in materialising this project, provided that researchers and instructors to be attached to the project from the Ministry will not be transferred to other organizations, after hearing the team's explanation. He confirmed to the team that there would be no problem of duplication between this project and the project of the World Bank in adaptive research and agricultural training because there would not be a regional research and training centre in the Polonnaruwa District under the World Bank Project.
- (4) Officials of the Ministry of Land and Land Development told the team that the construction work of water channels and land consolidation in System D would be done by the Ministry and afterward the Ministry of Mahaweli Development would take it over for the settlement project.

II-3. Field Survey

- (1) Research and Training Institutions
- During the field survey, the team visited to various agricultural research and training institutions as follows:
- a. The Central Agricultural Research Institute (CARI)
The CRIA was founded in 1969 with the assistance of Australia.
It seemed that there had been less significant changes in the CARI in the past 11 years, according to Mr. Imai, a member of the team who worked once as a resident researcher for the CARI for 2 years.
The researchers at the CARI are energetically conducting researches and studies

relevant to the Mahaweli River Development Programme. The researches and studies cover a wide range of subjects, including rice and other agricultural crops, though their activities are restricted because of scarce budget.

Due to a time limitation, the team could not collect detailed information about the activities of the CARI; however, the general impression is that the laboratory equipment and facilities of the CARI are rather insufficient compared with similar institutes in other countries such as Thailand, Malaysia and the Philippines.

b. In-service Training Institute (ITI: Gannoruwa)

This Institute is one of the largest of its kind in Sri Lanka and is located in Gannoruwa near by the CARI. There are many applicants for admission, but reportedly, only 60 % of them are accommodated.

The trainees at the ITI come from a wide range of professions related to agriculture, including farmers but few. The instructors there consist of one agricultural officer who manages all training activities, two paddy farming experts, one agricultural machinery expert, and one vegetable farming expert. For other fields of agriculture, instructors are temporarily recruited from the University of Sri Lanka and the CARI. The total area of the premises is 17 acres, 12 acres of which are farms. The ITI has a jeep and a minibus which are used for study tours of trainees and for transportation of goods. The audio-visual teaching aids available include projectors, object scopes, and a cinema projector, all of which are fairly antiquated, with only two of them being usable. The facilities in the ITI like the library and cooking facilities especially were felt to need improvement. Despite these circumstances, the active mind and behavior shown by the chief instructor won the respect of the team.

c. School of Agriculture (Kundasale)

The School of Agriculture in Kundasale, offers 2-year courses, and many of the graduates begin their careers as Agricultural Instructors (A.I.; Senior agricultural extension worker). The courses are paddy farming, pomiculture, olericulture, and house management, and the number of students is about 200. The school is coeducational, and youths aged 17 to 25 years who have graduated from high school or who have worked in private industry are eligible for enrollment. It is said that enrollment is highly competitive. The school has a well equipped library which is much better than that of the ITI. A term-end examination was approaching at the time of the teams visit and the students were studying hard at the library. Their notebooks were not too much high quality, but were filled out neatly in the vernacular language. Pressed for time, the survey team was unable to talk with the students in detail, but got the impression that though they had retained the lessons taught, they were in need of more training to put their knowledge into practical use.

d. Regional In-service Training Center (Maha-Illuppallama)

The Regional In-service Training Center, located in Maha-Illuppallama, is one of the three largest training institutes in Sri Lanka. One of the other two is in Peradeniya which offers training in general fields of agriculture, and the other is in Bandarawewa which specializes in olericulture. This Training Center offers across-the-board courses in dry zone-oriented agriculture. The building facilities are fairly old, and it is about

one-third in size of the ITI. Located at the yard of the Regional Agriculture Station, the Regional In-service Training Center, like the ITI, is well staffed and has experimental farms. Observing by the illustrations on the walls, the level of the training appears to be not higher than those in the agricultural high schools in Japan. With the support of New Zealand, the dining hall was about 70 % completed.

e. Regional Agriculture Station (Maha-Illuppallama)

The Regional Agricultural Station, located in Maha-Illuppallama is chiefly engaged in agricultural research in the arid zone. When Mr. Imai, of the team, worked here 11 years ago, there were only two warehouse-like research buildings. Now, two-story buildings symbolize the agricultural development in the dry zone, but the equipment needs improvement. The activities of the laboratory, though not so brilliant as to attract public attention, have done much credit to the Station in practical fields. Many new varieties of capsicum, legumes, and so forth, now cultivated by the farmers, were disseminated from this Station.

At present, along with the Mahaweli River Development Program, the Station is engaged in (a) establishment of a cultivation system for the effective use of reservoir water; (b) soil management for shifting cultivation; (c) reaction of new varieties of paddy to fertilizer under sufficient supply of water; (d) salt injury. The amount of budget for the Station is a little in contrast with the massive research works being undertaken.

(2) The Interviews with the Farmers

The team conducted interview with farmers in the course of field survey in the area of system G, D and D₁. The farmers were questioned about 25 topics related to their farming and management in order to know the needs of possible cooperation project. The farmers were selected at random, and only those of their answers judged to be given correctly are enumerated in Annex VIII; comments on other topics are given in the "Remarks." A summary of the survey results follows:

a. Homesteaders

A small number of homesteaders were interviewed, and it was found that many came from the overpopulated wet zone, that their ages ranged from 18 to 30 years when settled, and that their former occupations were not directly related to agriculture.

b. Relations between Farmers and Extension Workers

The table shows that there are close and friendly relations between the farmers and extension workers. Asked how often the extension worker came around, many farmers answered that he came at least once a week.

Considering the work load and the transportation of the extension worker, he would probably have difficulties in making one visit a month.

About this discrepancy, the survey team gave some guess that the farmers might be used to speak well of the extension workers taking thought for their position.

c. General Problems in Agriculture

The major concern of almost every farmer is centered on economic affairs as shown by agricultural loans, how to purchase tractor, and so forth. This is probably due to

the fact that, though actual agricultural situation in Sri-Lanka is still being stagnant, and on the other hand, people, ever in countryside being faced to upsurges of modernization and farmers are eager to apply modern technology as much as possible.

d. Agricultural Technology

As can be seen the friendly relations between the farmers and extension workers, improved agricultural techniques well understood by the farmers and this fact was more than our expectation. A combination of farmers who have no traditional agricultural technique and extension workers with no practical farming experience might be undermining the correct application of the improved technology.

Significant efforts should be made to teach the methods of chemical application and fertilization in practical farming. Serious outbreaks of blast disease and brown plant hopper were considered to have been caused probably by over-fertilization, the characteristics of new varieties, and improper application of chemicals.

The training centers are currently facing the challenge of these problems.

e. Rice Planting

The farmers are well aware that transplanting can increase rice yields by 20–30 %, but they have no alternative to sowing rice directly because of soaring wage of farm labors, unstable timing of tractor plowing, insufficiency of irrigation water while they want subsidies for chemicals (disinfectants, insecticides, and herbicides).

Development of direct-sowing technology that will produce a yield competitive to transplanting is an important item for future study.

(3) Proposed site for Agricultural Development Center (ADC)

a. Outline

Because of the shortage of Government-owned land, the Ministry of Mahaweli Development has proposed for the use of ADC which is the nucleus of this technical cooperation project, a newly developed site in the system D1 below the Moragahakande Dam. The survey team, however, made a reconnaissance study over a wide range in search of promising sites in addition to the site recommended by the Ministry. Briefly, Kandy and its environs are not suitable for technological development and training for the dry zone because of climatic incompatibility. Maha-Illuppallama is suitable climatically, but has been preempted by many donors such as the USA and New Zealand for various technical assistance activities, and is therefore not considered suitable because of problems involved in intergovernmental coordination, and so forth. Finally, it was thought that the system D near Plonnaruwa is the practicable site for Japan's technical cooperation.

The system D is not only accessible to Moragahakande Dam, but is also desirable from the standpoint of effective combination of financial and technical cooperation. For this reason, the team studied the Government-owned farms such as the Seed Centers. According to the results of this study, the Hingurakgoda Seed Center is relatively good from the viewpoint of location, topography, soil conditions, environment and related matters.

b. Hingragoda Seed Center (Agricultural Station Hingragoda)

This station, bordering the Hingragoda urban area, is distributing high-quality rice and upland crop seeds to the settlers in the system D2 of Mahaweli area. Its profile is as follows:

a) Number of employees

Officials : 30, including a Director
Full-time workers : 600 (approx)

b) Machinery

Tractors (4-wheeled) : 20
Trucks : Several
Others : Agricultural machinery and implements

The facilities include silos, warehouses, motor pool, administration office, guesthouse, accommodations for officials, and so forth

c) Farmland area

- o 750 acres : Irrigated
- o 400 acres : Dry fields
- o 331 acres : Building lots and wilderness

d) Cultivation plan for 1979–80

(1) Paddy rice

BG11-11	232 acres
BG400-1	15 acres
H4	80 acres
BG94-1	40 acres
BG34-6	40 acres
BG34-8	200 acres
BG276-5	40 acres
Total	647 acres

(2) Upland crops

Soybeans	50 acres
Maize	3 acres
Sorghum	3 acres
Groundnuts	1 acre
Millet	1 acre
Mustard	5 acres
Cow peas (M135)	20 acres
Red pepper (M11)	5 acres
Total	38 acres
Grand total	685 acres

e) Terrain features and use of farmland

Generally, the farmland is flat; the northern part is slightly elevated and the southern part is low. An unpaved road runs east to west from the main gate straight through the farmland to the postern gate. There are facilities alongside this road. To the north of the road, the lowlands are planted with rice and the highlands

with upland crops such as soybeans. To the south, the lowlands are used for paddy and offices are located along the road in the highlands or are covered with secondary growths or shrubs.

The Director of the Station stated that there are 100 acres of unused land 10 acres of which are usable as paddy field. According to the site survey, a considerable area is judged to be usable. For mechanized farming, some leveling work may be necessary.

(4) Amenities for Japanese Experts

a. Kandy

Colombo has a population of about 3 million, and is impeccable as a place for the experts and their families to live from the viewpoint of amenities, including educational opportunities.

Outside the city, however, the living infrastructure for Japanese experts is considered somewhat unsuitable.

Kandy is the second largest city in Sri Lanka, and has a population of about 1.3 million. As a city Kandy has all the necessary functions, however, there is much to be desired from an educational viewpoint as the schools for the Japanese and the Americans are all in Colombo; commutation to Colombo takes about 4 hour by train or 2 hours by car. The researchers from the Tropical Agriculture Research Center of the Japanese Ministry of Agriculture, Forestry, and Fisheries, have been busy. They come to the CARI in Kandy on Monday and go back to Colombo on Friday.

b. Hingurakgoda Seed Center (Polonnarwa)

The most promising site for the ADC is adjacent to the Seed Center in Hingurakgoda. An outline of Hinguragoda city follows:

a) Housing

There is no furnished housing available for the experts.

b) Hospital

Available, but uncertain about the level of medical services.

c) Schools

For Sri Lankan only.

d) Market

Slightly inferior to that in Kandy, but food provisions are plentiful.

e) Stores

There are electrical appliances, watches and jewelry, haberdashery, grocery, refrigerator sales, chophouse, food store, bakery, barber, and others.

f) Service station

Service station for tractors and vehicles are available.

g) Hotels

There are two large hotels in Polonnarwa within a 10–15 minute car ride from Hingurakgoda. There is a guesthouse where Queen Elizabeth stayed, shortly after the independence of Sri Lanka, but it is not so good facilities at present. The Seed Center has a guesthouse.

h) Roads

There are an asphalt road and a railway from Colombo to Hingurakgoda and there is also daily bus service between Hingurakgoda and Colombo; one-way fare is 10 rupees and the trip takes 6 hours.

There is rail service once a day to Colombo; one-way fare is 12 rupees and the trip takes 7 hours.

i) Health situation

The northern part is said to be infected with malaria. An official announcement says that at present there are 20,000–30,000 malarial patients, or slightly less than 0.2 % of the total population.

There were no malarious persons in the settler's families interviewed.

Polonnarwa is the civic center, but is somewhat inferior to Hingurakgoda in terms of urbanity and urban facilities.

II-4. Needs for Technical Cooperation

As a result of the field survey, the team has got the opinions and the impression of the needs for technical cooperation as follows:

(1) Agricultural Technology

a. Direct Sowing Cultivation of Rice

The farmers are well aware that transplanting yields more than direct sowing. But the farmers prefer direct sowing to transplanting because high wages preclude the hiring of laborers for transplanting and because the supply of irrigation water is precarious. (About 60 % of rice production come from the direct sowing method.)

It is therefore recommended that research on direct sowing technology be conducted along with a study for mitigating labor shortage for transplanting.

b. Fertilizer and Agricultural Chemicals

Oversupply of nitrogen increases susceptibility to pests. Subsidies are available for fertilizer alone, and the farmers are forced to pay by themselves for chemicals (though loans are available). Agricultural chemicals are expensive, so that the farmers face hardships in pest control. High-yield technology is an intergration of soil, fertilizer, variety, application of chemicals, water management, and proper farming operations at the right times. Thus, it is desired to guide the farmers along these systems of modern technology.

c. Breeding of Paddy Variety

It is necessary to develop high-yield varieties, but breeding is a long-term, expensive, and painstaking work. Thus, the Government of Sri Lanka is expected to secure the necessary personnel and investment to the work over an extended period.

d. Upland Crops

To increase the effectiveness of land use and amplify the agricultural land in the arid zone, the Government of Sri Lanka is promoting the production of upland crops. As the achievements of the settlers show, the use of dry fields is not sufficient, partly

because of a poor marketing system and partly because of precarious water supply. The layout of the homestead is poor. For efficient farming operations, the layout of settler's house area should be improved to have stockyard and orchards around the farmhouse and vegetable garden on the outer periphery. Raising small- to medium-size animals and cultivating vegetables is highly realizable and can improve the financial standing of the farmers especially in cash income. Thus, raising livestock and growing vegetables should be studied. Large animals can be used as a draft animal, and also their waste can be used as manure.

e. Marketing and Farm Management

As regards rice, the price-supporting policy of the Government appears to have worked well. But for other upland crops, more Government efforts are desirable. To increase production of upland crops, streamlined Government policies and efforts to explore a possibility of cooperative marketing measure of products in farmers side will be necessary. In addition, guidance for efficient farming operations should be extended.

(2) Agricultural Implements and Machinery

In the farming area, seasonal labor shortage is a major problem. The shortage of labor during the transplanting season is acute. Accordingly, introduction of agricultural machinery should be studied. However, in the introduction of machinery, the employment situation, the social code, farm economy, cultivation method, variety of paddy should take into account. Tilling machines, threshers, weeder, pumps, rice-huller, sprayer can be introduced immediately without any problems; however, their type, ways of use, and modification if any should be studied.

(3) Agricultural Extension Work

- a. AI and KVS (field extension worker) should always endeavor to assimilate new knowledge and technology (particularly practical ones) to keep abreast of the current improvement in agriculture. To this end, training of extension workers, and information services should be stepped up.
- b. As the extension work is so important, the number of extension workers should be increased for improved extension services to the farmers.
The new agricultural development area is particularly extension workers short.
- c. For efficient extension activities, teaching materials and audio-visual teaching aids for extension work should be provided. More vehicles should be available for the extension workers for better service mobility.
- d. So that the extension worker can dedicate his efforts to extension work, he should be free from other some odd jobs.
- e. The extension service for livestock farming is under jurisdiction of the Ministry of Agro-Industry. Their major extension activities include preventive injections against infectious disease. The livestock farming is very important, and it's extension activities should be considered to be integrated with other agricultural extension system.

II-5. Exchange of Views with the Government Authorities

After about a week long survey, the team met with the officers of the Ministry of Mahaweli Development, the Ministry of Agricultural Research and Development and Mahaweli Authority to discuss the survey findings. The team explained the result of field survey and asked them to comment on the draft operation plan of the project which team had carried from Japan.

(1) Report on the field survey from the team

The survey team conducted an extensive field survey by visiting many agricultural research and training institutes, and by meeting many agricultural specialists and officials, extension workers (AI and KVS), and farmers, particularly in the development area of the System D, and had the following impressions:

- a. By virtue of the agricultural extension services system, almost every farmer was well aware of the methods of solving technical matters concerning fertilizer, varieties of plants, blast disease, damage by blown plant hoppers, and so forth. But they said they could not follow the recommendations fully for lack of funds.
- b. There is a serious labor shortage during the transplanting season, and labor wages are very expensive. As a result, many farmers are forced to sow paddy directly while they recognize that transplanting will yield more than direct sowing.
- c. The extension workers make rounds of farmers occasionally for guiding them. While it is appreciated that their knowledge is wide and sound, they need in-service training so that they can teach the farmers more practically and effectively and upgrade and expand their technical levels as middle class technician.
- d. Concerning the project site, the team, at first, gave the first priority to the site near large cities, such as Colombo, in consideration of the project activities and the living convenience of Japanese experts and their Sri Lankan counterparts. The system, which seemed most promising, has already been preempted by other donors such as the World Bank, and the system D, originally suggested by the Government of Sri Lanka, was selected for major survey area and was studied at several places. As a result, the Government-owned seed center in Hinguragoda was found to be suitable for the agricultural development center of this possible technical cooperation project. It was also found that one place in the proposed development area in the system D1 and another near the urban area of Polonnarwa may be suitable for the pilot farms (including demonstration farms) for intensive extension services to the farmers. As the survey was conducted in the rainy season, it will be necessary to make another survey to clarify water availability and cultivation conditions in the dry season. Regrettably, Hinguragoda and Polonnarwa have no living quarters suitable for the Japanese experts. If the project is implemented, the Government of Sri Lanka will have to construct well-furnished quarters not only to accommodate the Japanese experts but also to attract capable Sri Lankan counterparts.

As regards technical problems, blast disease and brown plant hopper is a global matter, not a local matter. Thus, if the possible project would tackle them experts of international repute may have to be dispatched from Japan to Sri Lanka. At the same time, Sri Lanka should provide sufficiently capable counterpart specialist.

(2) Ministry of Mahaweli Development (Secretary)

The Secretary of the Ministry of Mahaweli Development was anxious to realize the in-service training center for the agricultural extension workers in the system D and to have expectant young extension workers trained on a long-term basis (1 year for KVS; 2 years for AI).

As regards the living quarters for the Japanese experts and counterpart specialists, he understood the Japanese Government's policy, but would like the Japanese Government to construct them as part of financial aid i.e. a grant aid to the project because of tight budgetary situation in Sri Lanka, and asked the team to convey a message to that effect to the Japanese Government.

As regards capable counterpart specialists, he hoped to be able to assign as many capable technicians as possible to the Japanese experts, but observed that because of a shortage of capable specialists, the number of fully experienced specialists available would be one or two at best and that young agronomists who have experience after graduated from university for only 2 or 3 years would fill the rest.

While appreciating the opinions and requests of the Secretary, the team stated its views that the training course for the extension workers would be worthy of attention if the graduates of the course are certified to be extension workers, but that the accommodation capacity would be 10 to 20 trainees at best as the size of the center from practical view point. As to the grant aid for the project, the team stated that it would convey the request to Japanese authorities because it was not authorized to discuss that matter.

(3) Ministry of Agricultural Research and Development (Additional Secretary)

Upon hearing the survey team's report, the Additional Secretary promised to spare no effort to realize the project. But he added that he had no intention of transferring the officials of his Ministry to other Ministries even when the project came into a reality.

(4) Mahaweli Authority (Director-General, Secretary, Agriculture Director and staffs)

After hearing the result of survey, the Director General stated that the Board was given broad powers under a special law to undertake coordination among various activities concerning the Mahaweli Development, that the Board would make coordination among the authorities and donors concerned for husbanding resources and for efficient administrative operations, and that the Board would submit a project proposal based on the results of discussions within the Government of Sri Lanka over the present possible cooperation project to the Japanese Government by 15 January 1980.

III. INTERIM REPORT

Before leaving Sri Lanka, the survey team prepared an interim report summarizing the field survey findings and the discussions with the Government of Sri Lanka and submitted it to the secretary of the Ministry of Mahaweli Development. (See Annex V)

IV. RECOMMENDATIONS ON FUTURE TECHNICAL COOPERATION

IV-1. Developments after Departing Sri Lanka

After returning home, there was an exchange of letters between the Director-General of the Mahaweli Authority and Mr. Tamesue, head of the team, as follows:

- (1) After returning to Japan, Mr. Tamesue, head of the survey team, acknowledged a letter, dated 17 December 1979, from the Director-General of the Mahaweli Authority to the following effect. (See Annex VI)
The Mahaweli Authority would like to make the following three comments relating to the draft operation plan suggested team:
 - a. We request the Japanese Government to dispatch experts specializing in upland crops, in addition to paddy experts.
 - b. We would like the Japanese Government to train more extension workers necessary for the Mahaweli Development.
 - c. We shall be pleased to learn your views about the possibility of modifying the draft operation plan suggested.
- (2) As the Government of Sri Lanka is supposed to hand over its official and comprehensive proposal to the Japanese Government via the Japanese Embassy in Sri Lanka. It is not clear whether the letter was the formal proposal based on results of through discussions among the Government of Sri Lanka concerning the possible technical corporation project. But the team sent a reply (Annex VII) on 25 December 1979 via the Japanese Embassy in Sri Lanka as follows:
 - a. We are ready to discuss your proposal as soon as the official proposal of the Government of Sri Lanka arrives.
 - b. Our opinion about your comments follows:
 - a) There are few, if any, upland crop experts in Japan, and it is uncertain whether experts on soybeans and cotton can be obtained for Sri Lanka.
 - b) For the increasing the number of extension workers to be trained, the contribution by the Japanese Government will have certain limit.
 - c. Our draft operation plan is not an official statement of the Japanese government, but a basis for discussion between us. When your Government submits its proposal to the Japanese government, we will discuss it and prepare a final plan for the project.

IV-2. Recommendations on Future Technical Cooperation

- (1) Before considering whether this technical cooperation project should be furthered, we should make the following conditions clear:
- a. Sri Lanka's proposal concerning the project
As stated in the foregoing, the Government of Sri Lanka is supposed to submit a proposal to the Japanese government via the Japanese Embassy in Sri Lanka as agreed on with the team.
We should wait and see whether the proposal is submitted by the Government of Sri Lanka and the proposal, if submitted, is generally in agreement with the way of approach of the Japanese government.
 - b. Relationship with the Moragahakande Dam Project
The technical cooperation project under discussion was formulated and requested as a result of a feasibility study on the Morangahakande Agricultural Development Project, and is closely related to the Moragahakande Dam project since the technical cooperation project would cover downstream of Government of Sri Lanka gave its assent to the NEDECO report which has declared the Moragahakande project to be "non-urgent," and notified to Japanese Government postponement of commencing the Moragahakande Dam Project.
This situation gives rise to a problem on how to deal with the technical cooperation project.
This matter may be discussed from both aspects diplomatic and technical.
Since authors are not in the position to discuss diplomatic policy we would like to point out technical matters that even if the Moragahakande project postponed, the irrigation water necessary for the possible technical cooperation project may be secured by existing reservoirs and chanel. At any rate, a dry-season survey will be required to make sure the availability of water for the project.
 - c. Reformation of Mahaweli Development Board
When the team was in Sri Lanka, it was reported that the laws were being amended in an attempt to divide the Mahaweli Development Board into two public corporations, one undertaking civil works and another undertaking the settlement probably by 1 April, 1980.
The latter corporation would become the major implementation body for the project, and there is nothing to do but to watch future developments.
 - d. Construction of Buildings and Facilities
Even when the conditions above are fully met, there still remains the matter on the possibility of the agricultural development center and related facilities (including accommodation quarters for the experts and counterparts, etc.) to be constructed under the responsibility of the Government of Sri Lanka.
Considering the antecedents that the Government of Sri Lanka has asked the Japanese government for grant aid as they are unable to provide sufficient funds for this purpose, much cannot be expected of the Government of Sri Lanka, and whether the project is realized may well hinge on whether the Japanese Government grants financial aid.

So far as all other conditions are met, the survey team hopes that the Japanese government will step up its efforts to promote the project and consider the construction of the buildings and facilities through grant aid or other suitable means in lieu of the Government of Sri Lanka in response to its request.

(2) Future Measures and Actions

In case future developments favor the project, it is recommended that a small survey team (one or two members) or short term experts (one or two) be dispatched for further study on water supply situation in dry season and so forth. If the survey results warrant the project, measures and actions to initiate the project can be proceeded.

Annex I Member List of Preliminary Survey Team

Assignment	Name	Position
Leader	Shigeru TAMESUE	Deputy Director, International Cooperation Division, Ministry of Agriculture, Forestry & Fisheries (M.A.F.F.)
Agronomy	Takanori IMAI	Senior Researcher, First Research Department Tropical Agriculture Research Center, M.A.F.F.
Irrigation & Drainage	Nobuyoshi SAKINO	Chief Engineer, First Engineering Division, Water Resources Development Public Cooperation
Agricultural Extension	Kikuo BANJA	Section Chief, Agricultural Extension Division, HOKURIKU Regional Agriculture Office, M.A.F.F.
Coordination	Nobuo MIYASHITA	Deputy Chief, Technical Affairs Division, Japan International Cooperation Agency

Annex II Record of Itinerary

24 Nov.		Departure from Tokyo
25 Nov.		Arrival in Colombo
26 Nov.	10:00 a.m.	Embassy of Japan
	11:30 a.m.	External Resources Department Ministry of Finance & Planning
	2:00 p.m.	Ministry of Mahaweli Development
27 Nov.	11:00 a.m.	Ministry of Agricultural Development and Research
	2:00 p.m.	Irrigation Department Ministry of Land & Land Development
28 Nov.	9:30 a.m.	Mahaweli Development Board Ministry of Mahaweli Development
	3:30 p.m.	Ministry of Finance & Planning
29 Nov.		Research Div. Department of Agriculture, In-service Training Centre, Central Agricultural Research Institute, Gannoruwa
		School of Agriculture, Kundasale
30 Nov.		Polgolla Dam Ukuwela Hydro Power Station
		Agricultural Research Station, Maha Illupallama, System H (Project Centre and Farm)
1 Dec.		Agricultural Machinery Training Centre, Anuradhapura, Regional Training Centre, Maha Illupalama, Dewahuwa Project and Farms

2 Dec.		Elahera Project, System G and Farms System D2 and Farms
3 Dec.		System D1 and Farms and proposed sites Government Seed Farm, Hingurakgoda
4 Dec.		District Office, Polonnaruwa Government Seed Farm, Polonnaruwa Livestock Farm, Polonnaruwa
5 Dec.	4:00 p.m.	Pelwehera Farm (Government Seed Farm) Department of Agriculture, Peradeniya Ministry of Mahaweli Development
6 Dec.	9:00 a.m.	Ministry of Mahaweli Development
	11:00 a.m.	Mahaweli Authority
	3:00 p.m.	Ministry of Agricultural Development and Research
	4:30 p.m.	Mahaweli Authority
7 Dec.	4:30 p.m.	Ministry of Mahaweli Development
8 Dec.		Departure from Colombo
9 Dec.		Arrival in Tokyo

Annex III Letter of Request of Technical Cooperation from Government of Sri Lanka

D/E.R.,

Moragahakande Project
Training Centre and Pilot Project

The feasibility studies for the Moragahakande Project and the downstream development on D1, D2 and G are being carried out under technical assistance by the Government of Japan. The interim feasibility report has been issued and the feasibility report is expected in the course of August. The downstream development covers the provision of irrigation facilities for agricultural development and settlement for an approximately 54,000 acres of new lands and improved irrigation for agriculture for an additional 99,000 acres of existing lands.

In order to try out the proposed irrigation and agricultural systems on a pilot basis and train the field level personal is necessary to implement the downstream development at a later stage it is necessary that a training centre and pilot project and an integrated rural development programme covering about 3,000 families, should be carried out immediately. Discussions were held with the Mission from JICA in May 1979 and they indicated that the Government of Japan would favourably consider a request for this project. The training centre will provide training for about 120 young men in a 100 acre farm in paddy and subsidiary crops and methods of organising all agricultural input services and marketing. The training will be residential and cover both theory and practical aspects needed for an all-purpose field level extension worker. The pilot project attached to the training centre will in addition provide date for farmer training. The integrated rural development programme cover about 2000-3000 farmer households in existing areas, will serve as a model for building up farmer organisations and rural institutions and improving water management and agricultural productivity.

I shall be grateful if accordingly a request is officially made to the Government of Japan for assistance for setting up the training centre pilot project and integrated rural development programme.

Secretary.

FOR DISCUSSION USE ONLY

OUTLINE OF OPERATION PLAN
OF JAPANESE – SRI LANKA TECHNICAL COOPERATION PROJECT
ON AGRICULTURAL DEVELOPMENT CENTER
IN THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA

(Draft)

I. Objective

The goal of this project is to contribute to promotion of agriculture in Mahaweli Basin, through development and extension of improved agricultural producing technology and effective farm management in the area to be irrigated in the Mahaweli Ganga Development Program in the Democratic Socialist Republic of Sri Lanka.

To this end, the project aims at finding appropriate system of producing technology for rice and subsidiary crops in the region and disseminating the improved technology and farm management to farmer's level through upgrading and training agricultural extension workers.

II. Scope of Activities

The project consists of Agricultural Development Center and Pilot Farms described below:

1. Agricultural Development Center (A.D.C.)

The A.D.C. will be established with adequate facilities, equipment and trial fields and located at

The activities at the A.D.C. are:

- 1) To review and evaluate prevailing producing techniques including water management, post harvest treatment and farm management at farmer's level for rice and subsidiary crops.
- 2) To make applicable research and trial in order to find improved system of technology including farm management suitable for extension works.
- 3) To improve agricultural machinery and implements and method of farm management to be used in the improved system of technology mentioned above.

- 4) To train agricultural extension workers by using the improved system of technology.
- 5) To improved method and materials of extension work.
- 6) Other necessary activities.

2. Pilot Farms

Pilot Farms will be designated at () places , , in the region and be about () ha, respectively.

Each Pilot Farm has a demonstration pilot of about () ha, to which intensive guide will be given by extension workers assigned in the area and trainees in the A.D.C.

Activities at the Pilot Farms are:

- 1) To apply, at farmer's level, the improved system of technology found at the A.D.C. through extension activity.
- 2) To give practical training to the trainees in the A.D.C.
- 3) To demonstrate the improved system of technology to farmers.

III. The Japanese Experts

Category	Field
1. Team Leader	
2. Experts	<ol style="list-style-type: none"> (1) Agronomy (2) Irrigation (3) Soil and Fertilizer (4) Extension (5) Farm machinery (6) Animal Husbandry (7) Agricultural Processing (8) Agricultural Cooperative and Marketing
3. Liaison Officer	

Note: The experts in the fields referred to in 2, (6) through (8) above, will be dispatched at express on short term assignment not exceeding twelve months.

IV. The Articles to be provided by the Government of Japan

1. ADC

- 1) Agricultural Machinery and implements, laboratory equipment and their spare parts, and materials including fertilizer and agricultural chemicals.
- 2) Teaching materials including fertilizer and agricultural chemicals.
- 3) Equipments, materials and spare parts for extension work.
- 4) Equipments, tools and materials for repair work.
- 5) Vehicles.

2. Trial Field Attached to A.D.C. and Pilot Farms

Construction machinery and their spare parts for land consolidation of the field and farms.

3. Other necessary equipment, material and facilities to be mutually agreed upon between the authorities concerned of the two Governments.

V. Granting Fellowship of Training in Japan

Under the Technical Cooperation Program, the Government of Japan might offer granting of fellowship for training of Sri Lankan counterparts of Japanese Experts in the field of agronomy, irrigation, soil and fertilizer, extension, farm machinery, animal husbandry, agricultural processing, and agriculture cooperative.

A duration of training in Japan will be 3 – 6 months for a trainee.

VI. The Sri Lankan Counterpart Officials and Other Personal

Category	Field
1. Director of the Agricultural Development Center	
2. Technical Staff	Two technical staff attached to each of Japanese experts
3. Liaison Officer	
4. Clerical and Service Personal	
5. Labours	

VII. The Land, Buildings and Operation Cost of the Project to be provided by the Government of the Democratic Socialist Republic of Sri Lanka

1. Land:

Land for the Agricultural Development Center and attached field.

2. Building:

- 1) Main Building (including the Director room, Instructor rooms, Teaching rooms, Laboratory, Hall, Library, etc.)
- 2) Dormitory and other facilities
- 3) Shed for machinery and implements
- 4) Warehouse for farm
- 5) Workshop
- 6) Garage
- 7) Farm office building

3. Operation Cost

- 1) Agricultural Development Center (including fuel oil and lubricants necessary for vehicles which provided by the Government of Japan)
 - 2) Pilot Farms
4. Other necessary land, building and operation cost of the project to be mutually agreed upon between the authorities concerned of the two Governments.

VIII. Duration of the technical cooperation will be expected for five years.

IX. The Composition of the Joint Committee

1. Sri Lankan Side

2. Japanese Side

Team leader
Experts
Liaison officer
Representative of Japan International Cooperation Agency

Note: An official of the Embassy of Japan may attend the meeting of the Joint-Committee as an observer.

Annex V

INTERIM REPORT ON THE PRELIMINARY SURVEY FOR THE
TECHNICAL COOPERATION ON THE AGRICULTURAL DEVELOPMENT CENTRE

7th December 1979

SHIGERU TAMESUE
Leader
Japanese Preliminary Survey Team
for Technical Cooperation on
Agricultural Development Centre

7th December, 1979, Colombo

Mr. T. Sivagnanam
Secretary
Ministry of Mahaweli Development
Democratic Socialist Republic of
Sri Lanka

Dear Mr. Sivagnanam:

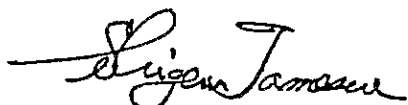
It is my pleasure to enclose herewith the Interim Report on the Preliminary Survey for the Technical Cooperation on Agricultural Development Centre which is the fruit of our survey activities for the last two weeks on a provisional basis.

All the members of the team wish to thank you and your colleagues in the Ministry for warm hearted hospitalities, effective arrangements and collaborations for our survey activities.

The team is especially in debt to Mr. Sivasubramaniam and Mr. Magodaratna who accompanied us on the field survey and they worked hard not only in guiding the team to sites but in really assisting us on various aspects of the survey in a constructive manner.

Once again, thank you for your cooperation.

Sincerely yours,



SHIGERU TAMESUE
Leader
Japanese Preliminary Survey Team
for Technical Cooperation on
Agricultural Development Centre

C.C. Mr. N.D.P. Pandi thoratne

Director General
Mahaweli Authority.

Dr. A.S. Kunasingham

Additional Secretary
Ministry of Agricultural Development
and Research.

Mr. R.U. Fernando

Director of Irrigation Department
Ministry of Land and Land Development.

INTERIM REPORT ON THE PRELIMINARY SURVEY
FOR THE TECHNICAL COOPERATION
ON THE AGRICULTURAL DEVELOPMENT CENTRE

I. INTRODUCTION

In response to the request made by the Government of Sri Lanka in August 1979, concerning a technical cooperation project which came out from the feasibility study on the Moragahakanda Project, the Government of Japan has despatched to Sri Lanka the JICA Preliminary Survey Team (hereinafter referred to as "the Team") for the technical cooperation on the Agricultural Development Centre, from November 25 to December 8, 1979, in order to collect the first hand information and to discuss the possibility to formulate this Technical Cooperation Project with the Sri Lanka officials concerned (see Annex I).

The team had a series of discussions with officials of Ministries concerned in Colombo and took a week long field trip to visit various institutions for agricultural research and training and settlement projects in the Mahaweli Basin.

In accordance with the terms of reference, the team will report to the Japanese Government all the information and data collected and results of the discussions between the team and Sri Lankan officials during the course of survey activity for the purpose of facilitating consideration whether the Government could initiate the Technical Cooperation Project requested.

We are pleased to express our gratitude and appreciation to all officials who provided us with kind and effective facilities during our stay in Sri Lanka as we would not have been able to attain the objective without this assistance.

II. RESULTS OF DISCUSSIONS

1. The team received the explanation of background and desirability of the requested technical cooperation from officials of the Ministry of Mahaweli Development which is summarized as follows:
 - 1) As concluded in the feasibility study for the Moragahakanda Project and its downstream development covers, beside irrigation facilities, the settlement of about 54,000 acres of new land. In order to manage a successful settlement and rural development program in these areas, it is essential to establish a training centre and pilot project for field level personnel, i.e. agricultural extension workers, supervisors of water management, other officials at village level and farmers and farm youths. It is also stressed that, at first, farmers should apply the most suitable technology including water management to their farming, secondly, processing and marketing of their products should be supported by agro-based industry and thirdly, community development should not be neglected for the integrated rural development in the Moragahakanda downstream area.
 - 2) The Government of Sri Lanka has, therefore, submitted the request of the Technical Cooperation Project for realizing the program stated above, and would appreciate it

if the Government of Japan could consider commencing implementation of this project in System D of the Mahaweli Development as soon as possible. In addition, a grant aid from Japanese Government is most desirable for providing the building, related facilities and infrastructures necessary for implementation of the above Technical Cooperation Project.

- 3) Since agricultural extension works and training activities are under the system of the Ministry of Agricultural Development and Research and irrigations are under the Ministry of Land and Land Development, a coordination among the Ministries concerned is essential for materialisation of cooperation for this program. The Mahaweli Authority will play the role of coordinator under the Mahaweli Authority of Sri Lanka Act.
2. The team clarified and made comments on certain points stated above besides explaining the team's idea for the possible Technical Cooperation Project based on the Draft Operation Plan (Annex IV).
 - 1) Some adaptive research works and trial activities are indispensable for agricultural training and extension works in order to find the most suitable system of technology to the region concerned.
 - 2) For successful implementation of this project, a step-by-step approach might be more useful instead of a too ambitious one in the scope of activities. In addition, it would be wise to train officers like Community Development Officers by local arrangement, because of the difference of cultural backgrounds and customs between Sri Lanka and Japan.
 - 3) It would, therefore, be a practicable way to concentrate the training into the middle-level technicians such as K.V.S.s, A.I.s and Irrigation officers at field level in the project. If a diploma for K.V.S.s and A.I.s is given to graduates from the training institute in the project, appropriate attentions could be paid to training youths for one and two year courses.
 - 4) The coordination among the Ministries concerned is a prerequisite to discuss the possibility of formulating the project so that a Ministry would be designated to have direct responsibility for it.
 - 5) As to the grant aid from Japanese Government for the project, the team is not authorized to discuss it but will convey the request to Japanese authorities concerned.
 3. The official of the Ministry of Agricultural Development & Research stated that the Ministry was willing to cooperate in realizing this project, provided that researchers and instructors to be attached to the project from the Ministry will not be transferred to other organizations, after hearing the team's explanation about what was discussed between the team and officials of the Ministry of Mahaweli Development. He confirmed to the team that there would be no problem of duplications between this project and the project of the World Bank in adaptive research and agricultural training because there would not be a regional research and training centre in the Polonnaruwa District under the World Bank Project.

4. Officials of the Ministry of Land and Land Development told the team that the construction work of water channels and land consolidation in System D would be done by the Ministry and afterward the Ministry of Mahaweli Development would take it over for the settlement project.
5. After clarifying some points with the team, as the coordinator, officials of the Mahaweli Authority stated that they would try to manage to realize this project in consultation with the Ministries concerned and a detailed proposal in writing on this project would be submitted to the Government of Japan, hopefully in January 1980.

III. FINDINGS OF FIELD SURVEY

1. Besides visiting various agricultural institutions, the team interviewed Agricultural Instructors, K.V.S.s and farmers in System D (see Annex II) and formed the following impressions:
 - 1) With the efforts of the agricultural extension system, most of the farmers know how to solve agricultural technical problems such as rice blast, brown plant hoppers, and so on. But they cannot follow the K.V.S.s recommendations mainly due to lack of available funds.
 - 2) In the area, significant labour shortage and hence sharp labour costs hike were seen specially in paddy land preparation and transplanting season. Some farmers could not help returning to direct sowing from transplanting from which higher yields could be expected.
 - 3) Which agricultural instructors and K.V.S.s visiting farmers many times have enough knowledge to teach farmers, it would be useful to grade up their capacity to deal with some questions in the applicable technology aspect through in-service training.
 - 4) There might be possibilities to devise a system of technology for instance, to save funds and labour as much as possible at the same time to increase farm productions even in the Polonnaruwa District where we saw high productivity in paddy and subsidiary crop cultivation.
2. So far as project sites are concerned, the team thought a closer location to urban area would provide more convenience to the activities of the project as well as the living of the staff of the centre. It was, however, a fact that the team was not able to find a suitable place at closer location to Colombo and Kandy since the System H was fully occupied by other donors for their technical cooperation program. The team, therefore, investigated several places in the Polonnaruwa District in order to select the most suitable location for A.D.C. The team had an impression that the Government-owned seed farm at Hinguragoda would be listed up as a recommendable site with careful consideration of many factors. Having observed sufficient water supply of irrigation to the site at Hinguragoda as well as other sites investigated, the team felt a need to grasp the water supply situation in dry season.

IV. CONCLUSION

1. As the result of this survey, the team has had a clearer picture about details and background of the request the Sri Lanka Government as well as proposed locations for establishing the centre, so that the team will duly report in to the authorities of the Japanese Government for their consideration.
2. In order to expedite consideration on the Japanese side it is desirable that the Sri Lankan side makes confirmation on the following points which would become pre-requisites when this project could be realized:
 - 1) A Ministry should be designated to have a direct responsibility for the implementation of this project.
 - 2) Sufficient counterparts in number as well as in qualification should be provided by the Sri Lankan side.
 - 3) In order to cope with inconveniences to be caused from the location of the project in the Polonnaruwa District, well furnished housing accommodations and related facilities should be provided under the responsibility of the Sri Lankan side for Japanese experts and their counterparts.

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 } அமைச்சர்
Minister
- 33640 } තීරණය කළ ඇමතිතුමා
 } தீர்மானம் செய்த அமைச்சர்
Deputy Minister
- 34528 } ලේකම්
 } காரியதரிசி
Secretary
- 33380 } පුද්ගලික ලේකම්
 } சொந்தக் காரியதரிசி
Private Secretary
- 20877 } කාර්යාලය
 } அலுவலகம்
Office



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 மகாவலி அபிவிருத்தி அமைச்சு
~~MINISTRY OF MAHAWELI DEVELOPMENT~~
 MAHAWELI AUTHORITY OF SRI LANKA

ඔබේ අංකය } MA/SG/44
 எனது இல. }
 My No. }
 ඔබේ අංකය }
 உமது இல. }
 Your No. }

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 P. O. Box }

500, ටී. ඩී. ජයා මාවත
 500, தி. டி. ஜயா மாத்
 500, T. B. JAYA MAWATHA

කොළඹ 10/கொழும்பு 10/Colombo 10.
 17th December 1979

Mr. S. Tamesu
 Team Leader
JICA

Dear Mr. Tamesu,

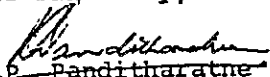
We thank you for the opportunity we had recently to discuss your suggestions regarding the Agricultural Development Centre and the Pilot Farms in System D of the Accelerated Mahaweli Programme. We have carefully considered your draft proposal and make the following observations for your consideration:-

In addition to your expertise in the cultivation of paddy on ill-drained soils, we would like to make use of your expertise in the cultivation of subsidiary food crops such as Soya bean, cotton, ground nut and vegetables on the well-drained soils. There is less information on the cultivation of these subsidiary food crops under irrigation in Sri Lanka. Great importance can be attached to a Pilot Project which studies these problems.

We are of opinion that a Training School would have to be put up for a large intake of students to meet the needs of the Accelerated Mahaweli Programme. This Training School may be set up within the Mahaweli Authority Project Area or outside it, where the prime requisites for a large Training School such as laboratory facilities are readily available.

We would like to know whether it would be possible to re-formulate the proposals on these lines, in keeping with the requirements of the Accelerated Mahaweli Programme.

Yours sincerely,


 N.G.P. Panditharatne
 Director-General
 Mahaweli Authority of Sri Lanka

- cc. to:- S/Mahaweli Development
- :- Director, Irrigation Department
- :- Chairman, M.D.B.

December 25, 1979

Hon. Mr. N.G.P. Panditharatne
Director-General
Mahaweli Authority of Sri Lanka

Dear Mr. Panditharatne,

In reference to your letter MA/SG/44 dated December 17, 1979 concerning the Agricultural Development Centre and Pilot Farms Project, I have the pleasure to inform you following points for your consideration:

1. We are prepared to discuss your proposal on the Project for the purpose of re-formulating the proposal according to our rules of procedures of technical cooperation program as soon as your proposal arrives through normal channel i.e. Embassy of Japan in Colombo. It would be appreciated if you could provide us with your detailed proposal on the Project which may include your requests referred in the letter such as the additional expertise in the subsidiary crops cultivation and enlarging intake of students to the training institution (school).

2. I believe, however, that it would be useful to indicate our problems at this moment in connexion with your suggestion.

1) Expertise in subsidiary crops

We are not sure to recruit sufficient Japanese expertise in subsidiary crops such as cotton and soya bean since there is a limited availability of human resource in these fields in Japan.

2) Enlarging intake of students to the training institution

A capacity of the training institution depends on its scale of facilities and number of instructors and staffs. While there would be a certain limitation of Japanese contribution for this purpose, it would be possible to enlarge the capacity if you have a intention to operate the training institution substantially by local arrangement.

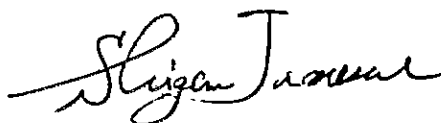
3) Location of the training institution

We are of the same opinion as yours that the training institution should be attached to some laboratory facilities. In our idea, therefore the A.D.C. is envisaged as a complex of laboratory, training facilities and trial field. Although we might examine a closer location of the A.D.C. to Colombo instead of Hinguragoda, Polonnaruwa District, it is not our idea that the training institution would be separated from the A.D.C.

3. I may add that our Draft Plan of Operation is not approved by Japanese authorities as an official document. We have handed it to you as an informal working paper for our discussion use only in order to facilitate your understanding in general on what we could make.

So that we could formulate a new project proposal taking your proposal on the Project into consideration and discuss it with your side in future.

Sincerely yours,



Shigeru Tamesue
(Team Leader)
Deputy Director
International Cooperation Division
Economic Affairs Bureau
Ministry of Agriculture, Forestry
and Fisheries

c.c. Mr. T. Sivagnanam
Secretary, Ministry of Mahaweli Development

Dr. A.S. Kunasingham
Additional Secretary,
Ministry of Agricultural Development and Research

Dr. D.D.G.P. Ladduwahetty
Chairman, Mahaweli Development Board
Ministry of Mahaweli Development

Mr. R.U. Fernando
Director of Irrigation Department
Ministry of Land and Land Development

Annex VIII

Table (1)-1 Summary of Interviews with Farmers

Farmer's Number		1	2	3	4	5
Place of Interview		Elahera	Elahera	Elahera.	Bakamune	Bakamune
Name and Age		VISHVAKATNE (40)	A.G. KARATNE (55)	KIRIBANDA (43)	BINISARAT (31)	(46)
Year of Settlement (Status)		1964 (illegal)	1951 (illegal)	1950 (legal)	1943 (legal)	1933 (legal)
Family Size (Children)		7 (5)	9 (7)	-	-	
Acreage	Paddy, Maha (Yala)	3 (-)	10 (-)	5 (-)	5 (5)	
	Upland crops, Maha (Yala)	- (3)	- (5)	- (5)	- (-)	
Rice Yield (unhulled)	ton/ha, Maha (Yala)	8.2	4.9	4.9	8.2 (5.8 ~ 6.6)	
	bushell/acre, Maha (Yala)	100	60	60	100 (70 ~ 80)	
Planting Method, Maha (Yala)		Transplanting	Direct Sowing	Transplanting	Transplanting	
Type of fertilizer		Chemical fertilizer and Urea	Chemical fertilizer and Urea	Chemical fertilizer and Urea	Chemical fertilizer and Urea	
Fertilizer application		as directed by the extension worker	as directed by the extension worker	as directed by the extension worker	applied heavily because of poor soil condition	
Insecticide (Brand)		- (-)	- (-)	- (-)	- (-)	
Disinfectant (Brand)		- (-)	- (-)	- (-)	- (-)	
Herbicide (Brand)		- (-)	- (-)	- (-)	- (-)	
Rice Variety, Maha (Yala)		BG11-11, BG34-8,	H4, BG11-11, BG34-8,	BG34-8,	BG34-8,	
Seed bushell/AC Maha		2 (16)	-	-	-	
" " " Yala		-	-	-	-	
Updating of Seed		-	-	-	-	
Seed Source		from own farm				
Transplanting labor, (Men/AC)						

Table (1)-2 Summary of Interviews with Farmers

	1	2	3	4	5
Farmer's Number					
Transplanting wages (Rupees/Man)	Male 15, Female 10 (with a meal)	Male 15, Female 10 (with a meal)	—	60 bushell/AC.	
Tilling force	own 4-wheeled tractor	leased tractor, buffalo	own 2-wheeled tractor	Joint use 2-wheeled tractor	
Frequency of Extension worker's visit	twice a week	once a week	occasionally	once or twice a week	
Requests of Extension workers	—	Ready to follow the directions if money is available	Nothing	—	
Size up of extension service	excellent	excellent and impartial	excellent	excellent	
General matters concerning agriculture	in need of water in yara period	too much rent for tractor, in need of water in yara period.	—	costly agricultural chemicals	
Matters concerning agricultural technology	—	—		Control of blast disease	
Remarks	Four 4-wheeled tractors and two 2-wheeled tractors are available for 800 households. Owners of the tractors are hired by neighbors who have no tractors. The hire cost is high. Farming was quite new to him, but he mastered in 2 to 3 years.	They came from Naranda. H4 is a long stem variety that controls weeds. A shortage of labor dedicates direct sowing. Transplanting period is unstable.	Three 4-wheeled tractors and two 2-wheeled tractors are available for 160 households.	BG 11-11 was given up because of vulnerability to blast disease. Blast disease occurred recently. His family has a small store which gives 4 times the return of paddy farming. The cost for hiring a 4-wheeled tractor is 500 rupees/AC. He hopes the government mill provide measure to buy a tractor at a low cost.	Our affluent and convenient living is a far Cry from the past. Everything is perfect if electricity is available. He is a smallish gentle mannered man.

Table (2)-1 Summary of Interviews with Farmers

Farmer's Number		6		7		8		9		10	
Place of Interview		D2 district		D2		D2		D2		D2	
Name and Age		JAMANE (57)		PIYASENA (28)		BISIETUN GARACHI (31)		G.R. HERATBANDA (31)		B.G. HEEN BANDA (40)	
Year of Settlement (Status)		1947 (legal)		1968 (illegal)		1976 (legal)		1974 (illegal)		1968 (legal)	
Family Size (Children)		8 (6)		4 (2)		6 (4)		3 (1)		5 (3)	
Paddy, Maha (Yara)		5 (5)		3 (-)		2 (1)		2 (1)		2 (1)	
Upland crops, Maha (Yara)		3 (3)		- (3)		1 (1)		1 (1)		1 (1)	
Rice Yield ton/ha, Maha (Yara)		4.9 ~ 6.6 (4.1 ~ 5.8)		6.6		6.6 (4.1 ~ 4.9)		6.2 (4.1)		4.9 (3.3)	
bushell/acre, Maha (Yara)		60 ~ 80 (50 ~ 70)		80		80 (50 ~ 60)		75 (50)		60 (40)	
Planting Method, Maha (Yara)		Transplanting		Transplanting		Transplanting (Direct sowing)		Transplanting (Direct sowing)		Transplanting (Direct sowing)	
Type of fertilizer		as directed by the extension worker		as directed by the extension worker		as directed by the extension worker		as directed by the extension worker		as directed by the extension worker	
Fertilizer application		do		do		do		do		do	
Insecticide (Brand)		-		Endrex		Asodorin, Fradan,		Asodorin, Fradan, Demexin, Endrex.		-	
Disinfectant (Brand)		-		-		Benlate		-		-	
Herbicide (Brand)		-		-		MCPA		34-DPA		34 DPA	
Rice Variety, Maha (Yara)		H4 (BG34-8)		BG11-11		BG11-11 (BG34-8)		BG11-11 (BG34-8)		BG11-11 (BG34-8, BG34-6)	
Seed bushell/AC Maha		1 (8)		1 (8)		2 (16)		1 (8)		1.5 (12)	
" " Yara		-		-		2.5 (20)		2 (16)		1.5 (12)	
Updating of Seed		--		every 2 or 3 years		every year		every two year		-	
Seed Source				from own farm		from agricultural cooperative		-		from own farm	

Table (2)-2 Summary of Interviews with Farmers

Farmer's Number	6	7	8	9	10
Transplanting labor, (Men/AC)	—	26	15	25	16
Transplanting wages, (Rupees/Man)	12 ~ 15 (20 without meal)	Male 15, Female 12 (with a meal)	same as on the left	same as on the left	same as on the left
Tilling force	leased tractor (400 Rupees/AC)	buffalo	4 buffaloes	—	—
Frequency of Extension worker's visit	once a month	once a week	whenever problems arise	occasionally	—
Requests to Extension workers	Nothing	Nothing	Nothing	Extension workers is always ready to come whenever problems arise.	—
Size up of extension service	praiseworthy because problems are solved through meetings	excellent	excellent	respectable	—
General matters concerning agriculture	in need of variety immune to blast disease and stem borer	costly agricultural materials	in need of water in yara period	in need of labor force in yara period	—
Matters concerning agricultural technology	Last year the drought reduced the yield to 18 bushels/AC. H4 is manageable because of it's high resistance against blast disease and stem borer. It grows quickly and is less affected by weeds.	If agricultural materials could get cheaper than now. The agricultural cooperative plays upon us, and is untrustworthy. We learn agricultural technology over the	Chemicals work well, but are too expensive for us. In need of pump and chemical applicator. Building materials are available free of charge if a house is built in a model housing area.	Direct sowing because of water shortage. The shortage of labor in yala is despairing. Blast disease has been chronic in recent years.	Building materials force 17 x 18 ft. house are available free of charge. Manioc and castor beans in yara. Debt; 1,600 rupees to agricultural coopera- tive, 490 rupees to radio store.
Remarks					

Table (2)-3 Summary of Interviews with Farmers

Farmer's Number	6	7	8	9	10
Remarks	Own consumption 40 bushels. In busiest farming season 15 bushels. Annual average consumption 230 bushels.	radio, and often work away from home.	Same applies to the construction of a well. Fretted by frequent occurrence of blast disease. Yala cultivation includes chili, bananas, cowpeas and manioc.		

"legal" refers to a person who settled after due formalities.

"illegal" refers to a person who squatted without going through formalities.

"Maha" means rainy season.

"Yala" means dry season.

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