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

170p

PROJECT PAPER

Proposal and Recommendations
For the Review of the
Development Loan Committee

SRI LANKA - Paddy Storage and Processing Loan

AID-DLC/P-2178

UNCLASSIFIED

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

UNCLASSIFIED
AID-DLC/P-2178
June 17, 1976

MEMORANDUM FOR THE DEVELOPMENT LOAN COMMITTEE

SUBJECT: Sri Lanka - Paddy Storage and Processing Loan

Attached for your review is the recommendation for authorization of a loan to the Government of Sri Lanka ("Borrower") of not to exceed Five Million, Four Hundred Thousand (\$5,400,000). The proceeds of this loan will be used to finance the foreign exchange costs of commodities and technical assistance to aid in the improvement and expansion of the processing and storage paddy.

This loan is scheduled for consideration by the Development Loan Staff Committee on Wednesday, June 23, 1976 at 2:30 p.m. in Room 3886 New State; please note your views are requested by close of business on Monday, June 28, 1976. If you are a voting member a poll sheet has been enclosed for your response.

Development Loan Committee
Office of Development Program Review and
Evaluation

Attachment:
Summary and Recommendations
Project Analysis
Annexes

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT PAPER FACESHEET

TO BE COMPLETED BY ORIGINATING OFFICE

1. TRANSACTION CODE
(X) APPROPRIATE BOX

ORIGINAL CHANGE
 ADD DELETE

PP

DOCUMENT
CODE
3

2. COUNTRY/REGIONAL ENTITY/GRAantee
Sri Lanka

3. DOCUMENT REVISION NUMBER

4. PROJECT NUMBER
383-T-017

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A. SYMBOL A B. CODE 2

6. ESTIMATED FY OF PROJECT COMPLETION

FY 81

7. PROJECT TITLE - SHORT (STAY WITHIN BRACKETS)

Paddy Storage and Processing

8. ESTIMATED FY OF AUTHORIZATION/OBLIGATION

MO. YR.
A. INITIAL 6/76 B. FINAL FY 81

9. SECONDARY TECHNICAL CODES (MAXIMUM SIX CODES OF THREE POSITIONS EACH)

10. ESTIMATED TOTAL COST (\$000 OR EQUIVALENT, \$1=Rs 12.7)

A. PROGRAM FINANCING	FIRST YEAR			ALL YEARS		
	B. FX	C. L/C	D. TOTAL	E. FX	F. L/C	G. TOTAL
AID APPROPRIATED TOTAL	5,400	0	5,400	5,400	0	5,400
(GRANT)	(0)	(0)	(0)	(0)	(0)	(0)
(LOAN)	(5,400)	(0)	(5,400)	(5,400)	(0)	(5,400)
OTHER 1.	0	0	0	0	0	0
U.S. 2.	0	0	0	0	0	0
HOST GOVERNMENT	0	0	0	0	5,591	5,591
OTHER DONOR(S)	0	0	0	0	0	0
TOTALS	5,400	0	0	5,400	5,591	5,591

11. ESTIMATED COSTS/AID APPROPRIATED FUNDS (\$000)

A. APPRO-RIATION ALPHA CODE	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE	FY 76		FY 77		FY 78		ALL YEARS	
			D. GRANT	E. LOAN	F. GRANT	G. LOAN	H. GRANT	I. LOAN	J. GRANT	K. LOAN
			0		0	0	0	0	0	
			0		0	0	0	0	0	
			0		0	0	0	0	0	
			0		0	0	0	0	0	
			0		0	0	0	0	0	
			0		0	0	0	0	0	
			0	5,400	0	0	0	0	0	5,400
TOTALS			0	5,400	0	0	0	0	0	5,400

12. ESTIMATED EXPENDITURES 0 0 0 1,452 0 1,594 5,400

13. PROJECT PURPOSE(S) (STAY WITHIN BRACKETS)

CHECK IF DIFFERENT FROM PID/PRP

1. Increase the efficiency of paddy procurement, storage, and processing.

2. Increase storage and milling capacity.

14. WERE CHANGES MADE IN THE PID/PRP FACESHEET DATA NOT INCLUDED ABOVE? IF YES, ATTACH CHANGED PID AND/OR PRP FACESHEET.

Yes

No

15. ORIGINATING OFFICE CLEARANCE

SIGNATURE

Jonathan R. McCabe

TITLE

Deputy Director, ASIA/PD

DATE SIGNED

MO. DAY YR.
06/04/76

16. DATE RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION

MO. DAY YR.
06/04/76

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Definitions of Rates, Weights and Terms

Currency: U.S. Dollar - \$1.00 = 12.7 Rupees

Weights:

1 bushel paddy	=	46 pounds paddy
1 million bushels paddy	=	20,575.7 long tons paddy
1 bushel paddy	=	31.28 pounds rice
1 million bushels paddy	=	13,964.28 long tons rice
1 long ton	=	2,240 pounds
Rs 33/bushel paddy	=	Rs 717/lb. paddy = \$.056/lb. paddy @ Rs 12.7 = \$1

Acronyms:

ADB	Asian Development Bank
AID	U.S. Agency for International Development
APC	Agricultural Productivity Committee
CC	Cultivation Committee
FAO	United Nations Food and Agriculture Organization
FF	Ford Foundation
IRRI	International Rice Research Institute
MASI	Multinational Agribusiness Systems, Inc.
MPCS	Multi-Purpose Cooperative Society
PMB	Paddy Marketing Board
UNDP	United Nations Development Program

Acknowledgment

Preparation of this project paper reflects full cooperation between the staff of the Paddy Marketing Board, IRRI/FF, and the AID Project Development Team. Each group produced drafts for different elements of the paper which were then exchanged for discussion and comment. Special note is made of the extensive contributions made by the Chairman of PMB, Mr. M. J. Perera, particularly regarding the background material dealing with the place of paddy in the economy, the role of the ration, the paddy procurement and processing system and previous studies completed; the efforts of PMB's General Manager, Mr. D.H.J. Abeyagoonasekera, in preparing a social analysis and the synopsis of an implementation plan; the work of the Chief Storage Manager, Mr. V.E.A. Wikramanayake, on the technical analysis and training program; in particular the untiring efforts of James Wimberly, FF/IRRI Advisor to PMB, on every aspect of project preparation and analysis; and the assistance of the staffs of both PMB and IRRI/FF for the many hours they took to prepare various tables and charts and type drafts of many sections of the paper. Without the full participation of all of the above, it would have been impossible to prepare the Project Paper in the time frame available.

PART I - PROJECT SUMMARY AND RECOMMENDATIONS

1. Borrower: The Government of Sri Lanka
2. Implementing Agency: Paddy Marketing Board
3. Loan Amount: \$5,400,000 (Five Million Four Hundred Thousand)
4. Loan Terms: Repayment of principal and payment of interest within 40 years, including a 10-year grace period of repayment of principal, with interest at two percent (2%) per annum during the grace period and three percent (3%) thereafter.
5. Borrower's Contribution: Rs 71,000,000 (= \$5,591,000 @ Rs 12.7 = \$1.00)
6. Description of Project: Proceeds of the loan will be used to finance the foreign exchange costs of importing complete units or components for approximately 3,500 paddy cleaners, 900 paddy dryers, 3,100 moisture meters, 10 2TPH rice mills, and 40,000 tons of bulk storage all under the auspices of PMB, as well as \$832,000 of imported equipment for modernizing private sector mills. The loan will also finance approximately 77 mm of technical assistance.
7. Purpose of the loan: To increase the efficiency of paddy procurement, storage, and processing and increase the capacity for paddy storage and processing in Sri Lanka.
8. Summary Findings: The project is technically and financially sound and within the capacity of the Paddy Marketing Board to implement. The significant benefits it will provide to all segments of the population will be of relatively greater importance to the poorer population, though initially some aspects of the paddy procurement program may result in smaller payments to paddy farmers as moisture and impurity content are eliminated from weight. The Mission endorses the proposed loan and it meets all statutory criteria (Annex 4).
9. Recommendation: Authorization of a loan in the amount of \$5,400,000 on the terms and conditions as stated in the draft Loan Authorization attached in Annex 4.
10. Project Development Team: Chairman: Jeffrey W. Evans, ASIA/PD/SA
Agricultural Economist: Charles Antholt, ASIA/TR

11. Project Issues: The issues raised during PRP review have been resolved as follows:

A. The review surfaced the need for an assessment of both PMB's management capability and a requirement for technical assistance. While PMB has strong management, it was found that additional technical assistance was required and this assistance has been included in the project.

B. During the review a number of questions were raised regarding the justification for the size mills proposed, implementation procedures for importing and fabricating equipment, operating and maintaining mills, and meeting construction schedules. Two ton/hour mills are justified in the technical analysis and implementation plans are outlined in the implementation section of this PP. Training has been included to insure mill operation and maintenance. Cost estimates and designs have been reviewed and were found reasonable. No problems are foreseen in meeting construction schedules.

C. The review highlighted the need to assess the status of the private sector and the economic return to private millers that would justify an investment in modernization. While additional information regarding the status of the private sector was collected following presentation of the PRP, a specific plan of assistance must be prepared prior to initial disbursement under the loan. Information on the private sector is included in Part 3A.6. While specific efforts under the project will be addressed only to quota millers whose numbers may drop from 500 to 300 (as 200 millers shift to solely private milling), increased domestic manufacturing plus recognition by the GSL of the important role of the private sector should benefit all millers. Small millers will not go out of business since additional paddy will be available for all millers.

D. The review expressed concern over the adequacy of price relationships to provide incentive for modernization and production. PMB/GSL regularly review the procurement price to insure PMB competitiveness with the free market price. The existence of a free market for movement and sale of paddy has resulted in the guaranteed price being a floor price rather than a ceiling price. The guaranteed price has been raised three times in the past five years. The current price of Rs 33 bushel still appears adequate. The pricing system will be analyzed during evaluation of the pilot project for upgrading procurement procedures.

PMB intends to evaluate milling hire rate paid to private millers during preparation of the implementation plan and throughout implementation of this phase of project. PMB recognizes increases in the rate are probably necessary as part of a general program to upgrade the quality of milling by quota millers.

PART II - BACKGROUND AND DETAILED DESCRIPTION

Introduction

Domestic paddy production in Sri Lanka falls short of requirements necessitating the import of approximately 300,000 tons annually. Rice reaches the consumer both through a free market and a ration system which provides 95% of the population with both a free and fixed price quantity of rice. Paddy destined for the free market is milled solely by private millers. Paddy destined for the ration is procured under the auspices of the Paddy Marketing Board (PMB) and is milled in both PMB and private ("quota") mills under allocations from PMB. Inefficient procurement procedures and outdated mills have resulted in considerable losses of rice during processing and a product generally judged inferior by consumers and the Government of Sri Lanka (GSL). Projected increases in paddy production will require additional storage and milling capacity.

Over the past five years, the GSL has increasingly focused attention on upgrading and expanding procurement, storage, and milling capacity. The proposed project provides assistance in these areas and was developed by the Paddy Marketing Board based on studies by PMB and a variety of expatriate advisors.

A. Background

1. The Role of Paddy in Sri Lanka: Rice is the staple diet of the entire population of Sri Lanka. Deficits in production are met by small quantities of other cereals, particularly Kurakkan and Meneri, the traditional millets, manioc and sweet potatoes, as the major starch crops, supplemented by fruits like jak and breadfruit. Recent additions to this list are maize and lately sorghum. Small quantities of cow-pea and green gram are also grown. Since World War II, the most important item that has assisted the consumer in Sri Lanka is wheat flour, which has to be imported.

During ancient times, particularly up to the end of the 12th century, paddy production in the country was a major undertaking of the rulers and eloquent testimony to this is provided by the large number of reservoirs that have survived to date. In addition to the major reservoirs, almost every village in the dry zone had its own small reservoir, which formed a water supply base to the village community to irrigate their crops and to supply domestic needs. During the decline of the Sinhala Kingdom from the 12th to the 18th centuries, these reservoirs were neglected and paddy production suffered. Due to generally poor conditions in the country, the population had also dwindled to very small numbers by the time the Portuguese arrived in the 16th century. Agricultural development took place under colonial governments, mainly during the British period, but those administrations decided to develop plantation agriculture, based on perennial export crops, viz: tea, rubber and coconut. The village

communities continued to cultivate small extents of paddy for their day-to-day needs and the British Government commenced importing rice from Burma, India and Thailand to feed the large indentured labor force working on the plantations during the 150 years of their rule. However, the country was surveyed in detail during this period and most of the old reservoirs were rediscovered and some Governors took the initiative to get some of them restored. But it was only after Sri Lanka received a certain quantum of internal self-government in 1931 that a major effort was made to restore the ancient works and develop paddy cultivation as a major activity. Even then, this progressed slowly and the importance of developing local resources to the maximum became clear only during WW II when imports were threatened and indeed, supplies from Burma and Thailand were interrupted. New major irrigation works, in addition to a more rapid program of restoration of ancient reservoirs were instituted. The Gal Oya reservoir and the Walawe reservoir are two such major schemes and the on-going multi-million dollar project of diverting the water of the Mahaweli River to the dry north and northeast is the highlight of this program.

Sri Lanka received independence in 1948 and the succeeding ministries of agriculture have each in turn devoted a great deal of attention to developing water resources for irrigation purposes, to extending the areas under paddy and to increasing production on such lands with the ultimate goal of self-sufficiency. The colonial period saw the establishment of well-staffed and well-equipped research institutions for the development of the three major crops--tea, rubber and coconut. But research into the increase in the production of rice gathered momentum only after independence. Paddy research stations were opened up in various parts of the country and breeding programs to produce higher yielding varieties were instituted. A number of new strains of paddy were released by the Department of Agriculture from time to time and some of these varieties such as H4 are still in use.

The period between 1960 and 1970 is particularly significant in this development. While the International Rice Research Institute in the Philippines was conducting research, local scientists were working independently, and about the same time as the first IRRI high-yielding seed of IR-8 variety was released, Sri Lankan scientists released varieties such as BG-11-11 and LD-66, followed by more new varieties right up to the present. The production of high-yielding varieties goes on now at a more rapid pace because of international cooperation.

The use of chemical fertilizers for paddy was almost unknown up to about 30 years ago. The only manure applied in addition to green leaf and farm refuse was bone meal. With the introduction of new varieties of seed, the Department of Agriculture recommended the use of chemical fertilizers and now every farmer in the country who can afford it applies these fertilizers instead of the routine material used before. This necessitated the introduction of a large program of importing fertilizers and the government set up its own fertilizer corporation for this purpose.

Mechanization of farm activities also began about the same time and a large number of four-wheel and later two-wheel tractors were introduced in the dry zone.

Because the farmers needed assistance to undertake the improvement of agricultural practices the Government instituted through the Department of Agrarian Services a system of agricultural credit under which loans were given to farmers in cash at the beginning of the season to meet their preharvest expenditure. These loans have to be repaid after the disposal of the harvest.

Paddy cultivation in Sri Lanka is on the whole an activity of the small farmer. The distribution of holdings indicate that over 88% of the cultivation is done on extents below five acres per farmer. Even in areas where State land was allocated to landless people under major irrigation schemes, the maximum extent given to each family was five acres, out of which only three acres were for paddy cultivation. Hence, even today, paddy cultivation remains a small-farmer activity with 1.4 million acres being farmed by over 800,000 persons. As a result of all the activities mentioned above: better irrigation facilities, high-yielding varieties of seed, fertilizer available freely and under a subsidized scheme, and agricultural credit, there has been a phenomenal increase in the yield per acre, and therefore, in the total production. Weather of course plays a very important part and while occasional drops in production occur during years of insufficient rainfall, the pattern of increase remains. The yield per acre has not yet risen to standards in countries where more intensive cultivation systems are used and therefore, if such improvements are effected by the farmers the potential for yield per acre remains much higher. Therefore, the goal of self-sufficiency that has eluded the country for years is now within sight.

TABLE I

PADDY LAND HOLDINGS BY SIZE

Source: Census-1963

<u>Size class of Holding</u>	<u>No. of Holdings reporting paddy</u>
Under $\frac{1}{4}$ acre	567,653
$\frac{1}{4}$ acre to under $\frac{1}{2}$ acre	3,150
$\frac{1}{2}$ acre to under 1 acre	12,940
1 acre to under $2\frac{1}{2}$ acres	51,540
$2\frac{1}{2}$ acres to under 5 acres	179,230
5 acres to under 10 acres	173,131
10 acres to under 25 acres	111,761
25 acres to under 50 acres	28,438
50 acres to under 100 acres	4,766
100 acres to under 250 acres	1,243
250 acres to under 500 acres	863
500 acres and over	269

2. The Ration: Rice rationing was introduced in Sri Lanka during WW II when imports were severely limited. Each household was permitted to purchase a specified quantity of rice each week. A ration has continued up to the present as the Governments that succeeded each other felt that this was the best arrangement under which imports of rice could be controlled. This served both as an impetus for local production and to ensure that all the people were served with a minimum quantity, which was distributed fairly through a large network of Co-operative societies. At the best of times the weekly ration was kept at two measures (four pounds) of rice per head for adults and one measure (two pounds) for children under 12 years of age. No ration of rice was allowed for children under one year. This ration has been changed from time to time to meet with special situations that arose due to either increases of prices of imported rice or shortages of supplies from abroad.

A major change in the rationing scheme was introduced in December 1966 under which the ration itself was reduced to one measure per head and this was given free to consumers. Since then, a part of the ration being free for the poorer sections of the population has remained a part of the rationing scheme. The current ration per week is $1\frac{1}{2}$ measures (three pounds) per head of which $\frac{1}{2}$ measure (one pound) is given free to nonincome tax payers. (See Annex 1 changes in the Rice Ration System.)

The rationing scheme brought into being a further concession to consumers and this was the supply of rice at a subsidized price. The subsidy scheme was the responsibility of the Food Commissioner, who imported rice from abroad as well as collected the local rice from the institutions in charge of Government paddy purchases and was in charge of the entire rationing scheme.

With the introduction of the Scheme to give part of the ration free, the subsidy for the current financial year amounts to Rs 840 million. The Government has made an attempt to reduce this subsidy as far as possible by gradually increasing the sale price of rice.

So long as the Government of Sri Lanka has to import rice even to maintain the present low ration of $1\frac{1}{2}$ measures per head, it is necessary to maintain a rationing scheme to ensure a fair distribution and, therefore, there has so far never been a demand to scrap this scheme. Such a situation will arise only when local production increases to such a level that there will not only be self-sufficiency, but some amount to spare to be kept as a buffer stock.

3. Paddy Procurement and Processing: The Government of Sri Lanka commenced purchasing paddy from farmers as a part of the strategy to meet the food requirements during the War. Initially, this program was called the "Internal Purchase Scheme," and under special powers made available

to Government Agents during the War period, farmers were compelled to sell to Government all surplus after a basic allowance was given per family. Soon after the War, the compulsory purchase of paddy was abandoned, but the Purchasing Scheme continued to function under the Department of Agricultural Marketing. This responsibility passed on to the Department of Agrarian Services in 1953. The Agrarian Services Department functioned under the Ministry of Agriculture and its major responsibility was the administration of the Paddy Lands Act. It also supervised granting loans to farmers and the distribution of fertilizer. Purchasing of paddy was at this time referred to as the "Guaranteed Price Scheme" because under Guaranteed Price Act the Government had the power to lay down floor prices for a large number of agricultural products, including paddy, which were guaranteed by the Government. The responsibilities of the Commissioner of Agrarian Services in relation to paddy purchase started increasing along with the improvement in the production of paddy in the country and the generation of a substantial marketable surplus for the producers.

After 1966, since the introduction of the high-yielding varieties and the Government taking a major interest in increasing food production, the situation became even more demanding and a great part of the energies of the Department had to be spent on paddy purchasing. Since this was now becoming a major commercial activity, the Government decided in 1970 that there should be a separate organization to handle the subject of purchasing of paddy, its proper storage, conversion of it to rice and finally the handing over of that rice to the Food Commissioner to be fed into the Rationing Scheme. At the same time Government felt that this could be best handled by a Government-instituted corporation so that as a marketing organization it would be relieved of the involvements with Government administrative and financial regulations and would then be free to make quick decisions and attend to this very widespread operation in a more business-like manner. This proposal was accepted by the Government and the Paddy Marketing Board was the resultant organization. It was set up under an Act of Parliament which came into law in March 1971.

The objects of the PMB as laid down in the Act are mainly:

(a) To carry on the business of purchasing, selling, supplying and distributing paddy and rice; and

(b) To carry on the business of hulling, milling and processing of paddy and rice.

In order to carry out these two functions, the Act provided for the PMB to employ other agencies as its Authorized Purchasers or Authorized Millers. The situation therefore in the country did not change much from what it had been under the Agrarian Services Department which also purchased paddy through agents and got the milling done mainly through private millers. The system was that Cooperative Societies which are scattered throughout the country were in the main the Authorized Purchasers, and a large number of private millers were in the main the millers.

However, there is provision in the Act for the PMB if the need arises, to do both these jobs with its own personnel. The cultivation of paddy being an island-wide activity, the PMB felt it was not possible for it to get into the business directly with the farmer and therefore decided that the continuance of the Agency Scheme using the Cooperative Societies was the best arrangement. This continues even now. Cooperative Societies who are appointed Authorized Purchasers under guidelines given by the PMB are paid a commission, transport charges, handling charges and other incidental overhead expenditures that occur. The People's Bank provides marketing loans to Cooperative Societies to pay the value of the paddy purchased direct to the farmers. They obtain reimbursement from the Banks on the production of documents from the PMB (Goods Received Notes) certifying that the quantity of paddy specified has been delivered at a PMB store. The PMB in turn settles these accounts with the People's Bank on receipt of money from the Food Commissioner as payment for rice delivered to him.

The process is, the farmer brings the paddy to the Coop Society; the Coop Society pays cash to the farmer and delivers the paddy to the PMB store; the Store Officer of the PMB gives a Goods Received Note; the Coop Society submits this to the People's Bank and obtains money to purchase paddy. The marketing loan obtained initially by the Society is settled at the end of the season with the Bank.

Once the paddy is taken over in the PMB store it is kept in storage for issue to millers. At the time PMB took over the responsibility of paddy purchasing from the Agrarian Services Department, there were nearly 1,000 private millers registered to receive quotas. This was in 1971. However, since 1972, the production fell off and as there was not enough paddy to be issued to so many millers a number of them have either given up milling or mill solely as private custom millers. The number of quota millers in operation in 1975 was about 500.

A miller to be entitled to be registered to receive quotas has to give a bank or cash guarantee to cover the cost of the paddy he takes over for milling and then, within a specified period has to process the paddy into rice and deliver a specified out turn to a specified food commissioner's store. On receipt of a certificate of such delivery the miller is paid a milling hire and transport charges. The PMB submits a bill to the food commissioner monthly for the value of rice delivered during the period and obtains payment. This is the source of income to the PMB. The price at which rice is purchased by the Food Commissioner is fixed in relation to the cost of paddy, handling charges, cost of milling, overheads to the PMB and a very small margin of profit, which at present is half-cent per measure of rice. (See Annex 1 GSL Paddy-Rice Flow Diagram.)

The Agrarian Services Department owned 17 rice mills which were taken over by the PMB in July 1971. These consisted of four classical type mills, three of three-ton per hour capacity and one of one-ton per

hour capacity; eight Japanese-built Cecoco mills and five huller-type mills. The capacity of 14 of these was about one-ton per hour. Only the four classical mills were generally suitable for commercial milling. The total rated annual capacity of these 17 mills is only 73,260 tons of paddy. About 90% of the procurement had to be distributed among the private millers. The private milling sector had grown without any plan and consists mostly of huller-type mills with a capacity of about 400 tons per week. They are scattered all over the country with a high concentration in the major purchasing areas, like Polonnaruwa and Ampare. They have, in spite of the low capacity and inadequate machinery, accomplished the required milling over the years, although in general, the quality of rice supplied is of a poor standard. However, due to the fall-off of the number of such millers over the last two-four years, and due to the fact that the PMB's own mills needed extensive maintenance and repair due to their age, the PMB initiated a scheme of importing some new mills in order to give a boost to the rice milling industry in the country. The present expansion program of the PMB will have only a small impact on total milling capacity and therefore the country will have to depend on the private sector for a long time to come. An improvement of the milling industry in the hands of the private sector, as well as of the PMB is called for in view of the major economic responsibilities involved in the paddy/rice industry.

The private miller is not a big industrialist. Generally, a small mill is situated in his own home garden and is supervised by himself with a couple of assistants. Only in a few districts, one finds special milling premises. Due to the absence of a technical development organization either within the Government or outside to develop this industry, millers have procured machinery that was traditionally available for milling, such as the Engleberg huller. A very few millers have invested in modern machinery, and even these do not have the complete set of equipment needed to constitute a modern full stage mill.

In addition to the millers who received paddy from the PMB referred to as "quota millers" there are other private millers who do commercial milling to supply the market where a certain amount of rice is always available for purchase outside the ration at a higher price. There are also many small hulling plants scattered all over the country, which do custom milling, i.e., milling the paddy of producers for their domestic requirements for a fee.

Up to the time the PMB was established, the Guaranteed Price for agricultural products, including paddy, was fixed in accordance with the provisions of the Agricultural Products (Guaranteed Price & Control of Hulling & Milling) Act No 33 of 1961. As the procedure laid down in this Act is cumbersome, Government decided to fix a floor price. The decision on level of the floor price is generally taken by the Cabinet on the recommendation of the Minister of Agriculture and Lands. Since the floor

price ensures to the farmer a regular minimum price which is not subject to market fluctuations, and which is fixed in consideration of factors such as cost of production, ruling market prices, etc., enabling the farmer to have a reasonable profit, producers can undertake agricultural production with a guarantee that a ready market for their surplus at a reasonable price is available. Floor prices are now in force for paddy, maize, and sorghum, all three of which the PMB undertakes to purchase. The Guaranteed Price was fixed for the first time for paddy when Government started the Internal Purchase Scheme during the War years, and the initial price was Rs 6/ for a bushel of paddy. This has been raised over the years to Rs 9/, Rs 12/, Rs 14/, Rs 18/, Rs 25/, Rs 30/ and the present rate Rs 33/ per bushel (Rs 1,518/ton). The last three increases, i.e., Rs 18/-Rs 33/ were fixed within the last five years as an incentive to agricultural production.

Since the private sector was also free to purchase paddy throughout this period (excepting for 2½ years, 1973-1975, during which certain Emergency Regulations prohibiting transport without a permit were in operation) prices in the open market fluctuated, as they do even now, according to the availability of paddy for sale with the producers. Thus, the price comes down during the harvesting seasons and rises in between seasons. During the harvesting seasons the prices offered by private traders are lower than the floor price to farmers and thus PMB is able to purchase its greatest share during these seasons. During the two clearly marked harvesting seasons, the floor price serves as a salvation to the farmers and the PMB achieves its procurement target by being fully effective. When the ration is low or production is poor, the marketable surplus comes down and it is during this time that the private sector offers high prices for whatever they can get. At this time the competition is severely against the PMB, but things again normalize with the next harvest.

Production of paddy in the country suffered due to adverse weather conditions starting from 1972. The position deteriorated over the next two years and the lowest production for some time was recorded for 1975. The shortfall in production in 1972 was not confined to Sri Lanka and as a result the price of rice in the world market rose to unprecedented heights. As a result, Sri Lanka was faced with a very unpleasant situation of having to pay by foreign exchange huge prices for imports as well as face a much lower input into the Rationing Scheme from local purchases by the PMB. To meet this difficulty, one strategy was to reduce the ration and the other was to make every possible effort to purchase as much paddy within the country. Both these lines were embarked upon. In February 1973, Emergency Regulations were enacted to control transport of paddy and rice. At the beginning a generous amount of paddy or rice could be transported without a permit, but as this facility was abused by traders, rules were made stricter. In October 1973, with a drastic reduction of the Ration to ½ measure per head, a total ban on transport was enforced.

(This was relaxed in April 1974 to permit the transport of four pounds per person.)

With the reduction in the Ration and the shortage of paddy in the country, the demand for extra rice from consumers had to be met by traders who had to violate the Regulations and in doing so ran risks of strict punishment. Consequently, the price of rice in the illegal market rose to unprecedented heights in the urban areas. In October 1975, the Government decided to rescind the Emergency Regulations and watch the situation. Immediately traders moved into the producing areas and bought fairly large quantities of paddy and started selling rice freely. This resulted in the price coming down and by January 1976 prices had stabilized at reasonable levels, e.g., in Colombo the price came down from Rs 4.50 per measure to about Rs 3.00. The same effect was felt all over the country. As the private trader purchased paddy at a price higher than the Government floor price of Rs 33/ per bushel, producers were inclined to sell their surplus to them and therefore the purchases by the PMB were affected during the period October 1975 to February 1976. However, with a better harvest in most of the producing areas for Maha 1976, paddy prices also have now stabilized. During the Maha harvest of 1976, the PMB is purchasing paddy along with the private sector and its procurement so far has not indicated a very serious drop. It can therefore be presumed that if the harvest is normal, the PMB can compete with the private sector without much disadvantage. Any trend showing the inability of PMB to compete would indicate the need to raise the procurement price.

If climatic conditions are normal and the full extent of cultivable land is brought under paddy every year, production increases above 75 million bushels of paddy during the year can be expected. Out of this, about 30% can constitute the marketable surplus available to the PMB.

Increased production is expected to reach 1.88 million tons by 1980 because of increased irrigation efforts, resulting in new land under production and the future spread of high-yielding varieties. As this increase occurs, PMB expects to be able to increase its percent of procurement for the ration to 43%. This would provide 90% of ration requirements. Further paddy production of 0.39 million tons would be required to reach self-sufficiency.

Until the PMB decided to streamline the procedures in the various stages of its activities, purchasing was done under the volume measure per bushel. For some years it had been felt that conversion of purchasing into weight would bring greater advantages, both to the producer and to the purchaser. This was initiated in 1973 and completed by the end of 1975.

As a result of this change, the PMB was forced to seriously consider the quality of paddy it purchases, particularly purity and moisture content, as these constitute factors in weight although they did not matter very much under volume basis. This is apart from the disadvantages of

purchasing high moisture paddy in relation to storage. A pilot scheme introduced moisture meters at purchasing points in four districts, has been in operation for two seasons and although there are still complaints, particularly from the purchasing agents, the moisture meter is now gaining acceptance as the only accurate method of measuring moisture. The presence of other extraneous matter has been spot checked from the outset of the weight purchase system, in an attempt to ensure the purchase of clean and dry paddy which is a requirement to enable the PMB to keep paddy in storage safely for some months, and also to enable millers to produce a better quality rice.

Extra lands will be benefited by irrigation facilities under the Mahaweli River Diversion Scheme. Under this scheme, existing paddy fields will be able to be cultivated twice a year and a large extent of new land will be brought under cultivation progressively. When these things take place, the PMB has to be ready to share the responsibilities placed on it by the Government to see to the marketing of the extra production. While, under procurement, the improvements needed are mostly technical, in regard to storage and milling, further facilities are needed to cope with this increase. The total storage capacity available to the PMB at present is insufficient and extra stores facilities have to be provided to take in about 40,000 tons of paddy.

4. Previous Studies and Other Donor Assistants: When PMB was constituted the Board felt that the subject of paddy procurement, storage, and processing needed close study since very little had been done in this field earlier. In 1968, the FAO sent U Thet Zin to advise the Commissioner of Agrarian Services on these matters, and although he made some valuable recommendations which were accepted in principle, no implementation took place. The PMB requested the FAO to obtain U Thet Zin's services again for a re-evaluation and he did this in the latter part of 1971. His report formed a major bedrock of advice on how to proceed. The major recommendation he made was that PMB should set up a well-equipped training institute in order to provide continuous training programs for its own employees and others who engaged in this industry.

In 1972, the PMB requested that IRRI and Ford Foundation provide support for further studies as well as expert advice. This led to the creation of the IRRI/FF Rice Processing Project which commenced in March 1972 for an initial period of two years and was later extended to December 1976. This project provided for the full-time services of a consultant, training programs for PMB staff abroad, short-term consultancy services of experts and the supply of a small quantity of equipment as well as training. The most important item established under this project was the Training Center at Gannoruwa, Kandy, which provided facilities for a limited amount of training pending the commissioning of the more permanent center at Anuradhapura funded by FAO/UNDP.

Short-term consultants who came under the auspices of the IRRI/FF project were:

- a. Dr. H. Barre on storage buildings.
- b. Mr. Joseph Smile on storage and processing of other grains.
- c. Prof. J. Efferson on agricultural marketing.
- d. Profs. V. K. Gupta, D. K. Desai and P. V. George from the Indian Institute of Management, to conduct a management survey of the PMB and to prepare guidelines for management training of its staff.

Mr. J. E. Wimberly has been serving from the beginning of the project as the Project Leader and Consultant.

Following the recommendations made by U Thet Zin, the PMB proposed to the FAO the provision of assistance to set up a comprehensive Training Center. This was accepted for financing by the UNDP and this Center, which is to be designated Rice Processing Development Center, has been set up at a cost of about Rs 10 million, of which Rs six million is foreign aid provided by UNDP for equipment, and Rs four million has come from the Sri Lanka Government as a grant to the PMB for land, buildings and other local services.

Two expatriate experts will assist the working of this Center at the outset and PMB will provide the balance of counterpart staff. It is now anticipated that the Center will be commissioned in July 1976. This Center has fully equipped laboratories, a one-ton per hour rice mill with various types of supporting services such as for cleaning, drying, storage, parboiling and grading. Residential facilities for 40 trainees at a time are also provided. UNDP has also donated a two-ton per hour rice mill which is being installed near the Training Center, which will give practical experience to trainees in the operation of a mill on a commercial basis.

Staff from the PMB, particularly from the engineering division, have been sent abroad for training in USA and India under the IRRI/FF project. Some study tours also have been arranged for PMB staff mostly in Asian countries to enable them to familiarize themselves with the rice industry in those countries.

This training included foreign training of three engineers, one agricultural economist and one management specialist, all for advanced degree programs. Five engineers were sent to India for two months' training, one statistician to India for six months, and 12 regional managers to India for a special one-month management development program. The Chief Rice Mills Engineer, the Chief Storage Manager and other engineers have participated in various study tours.

In addition to the inputs supplied by the consultants, the PMB has continued to study specific problem areas during the past few years. Research reports on studies include the following: Optimum time of Paddy Harvesting, Storage Losses, Study of the Industry and Development Plan and Rice Distribution. All these studies have provided more knowledge of specific problems and enabled decisions and steps to be taken to solve the problems.

In addition to these studies financed by PMB and other donors, AID contracted with Multinational Agribusiness Systems, Incorporated (MASI), to carry out a financial and techno-economic analysis of PMB operations and the project. This study provides a tremendous amount of data for PMB use, suggests detailed implementation possibilities for many aspects of the project and whole heartedly supports the technical, economic and financial viability of the project. Copies are available in ASIA/PD.

5. PMB's Initial Proposal and Current Project: Soon after the PMB was established in 1971, the management of PMB requested foreign assistance to look at the problems of the paddy post production industry and offer advice to the PMB in undertaking its responsibility to the industry. In mid-1972, the Ministry of Agriculture appointed a committee to study the industry and make recommendations. Recognizing that insufficient and outdated facilities coupled with inefficient procedures and a disorganized private sector had adversely affected the quality and quantity of rice reaching consumers, the PMB began a development program with objectives to (i) upgrade existing procurement, storage and processing facilities, in order to reduce losses, improve rice quality and reduce operation cost; and (ii) to build additional facilities to handle the expected increase in paddy production. Construction began in 1973 on (1) four new storage and processing complexes, with 5,000 tons storage capacity and 12,000 tons per year processing capacity with supporting cleaning, drying and parboiling facilities; and (2) in coordination with the River Valleys Development Board, two more complexes financed by the ADB, each consisting of 24,000 tons per year processing capacity and 1,000 tons storage capacity. In 1975 the PMB began construction of two additional processing plants attached to existing storage, one of 12,000 tons per year capacity, the other with 24,000 tons per year capacity.

Realizing that this was a substantial beginning, but not adequate to meet the requirements of expected increases in paddy production, the PMB reevaluated the country's needs in late 1974 and put together a Development Program in January 1975 which was presented to USAID for possible financial assistance. This original proposal required FX financing of \$7.1 million to improve the paddy procurement system, purchase trucks, modernize existing storage and 20 existing mills, construct 20 additional storage and milling complexes, and provide some technical assistance.

Subsequently, in preparing the Project Review Paper, AID and PMB determined that alternative arrangements for transport could be made, that the addition of all 20 new complexes did not appear justified by production trends and that a program to upgrade rice processing throughout the country required some form of assistance to private millers who would continue to do the bulk of milling. At this stage the project had been broadened from one concerned only with PMB operations to one of national scope. The estimated foreign exchange requirement was \$5 million.

In the past year the Paddy Marketing Board with the assistance of IRRI/FF and an AID-funded contract with MASI continued to evaluate and analyze a program to upgrade current operations and increase capacity. The project described in this paper differs from that in the PRP in that while the efforts to upgrade the Paddy Procurement Program remain virtually the same, attention has been shifted from the use of FX to finance modernization of existing facilities to emphasis on construction of new facilities for both storage and milling. This reflects a PMB and IRRI/FF finding that basically it was more economical to replace much of the present plant rather than modernize outdated facilities. PMB will continue to upgrade some existing facilities but with local resources as part of their ongoing operation. PMB also recognized the need for additional technical assistance and after a realistic analysis of current capacity and production trends determined that at least over the next few years only 10 additional mills (which may replace some existing PMB mills) were necessary under an AID loan.

The current project has been reviewed thoroughly with and approved by the Minister of Agriculture and Lands and the Minister of Planning and Plan Implementation, including the External Resources Division.

While it is conceivable that the project could be further modified once implementation begins, no major changes are anticipated.

A summary of project changes during different stages of development is presented in Table 2.

TABLE 2 CHANGES FROM ORIGINAL PADDY MARKETING BOARD PROPOSAL TO PRESENT PLAN

<u>CATEGORY</u>	<u>PROPOSAL</u>	<u>PRP</u>	<u>CHANGE</u>	<u>PP</u>	<u>CHANGE</u>
Paddy Purchase Program	3.5	4.1	+ .6 (A)	4.17	+ .06 (H)
Transport	.4	0	- .4 (B)	0	0
Convert Existing Stores to Bulk	1.9	2.3	+ .4 (C)	0	-2.3 (I)
Replace 20 old mills with new	1.2	1.4	+ .2 (D)	2.9	+1.5 (J)
Build 20 new storage & milling complexes	10.3	2.5	-7.8 (E)	0	-2.5 (K)
Build new storage only	0	0	0	1.7	+1.7 (L)
Assist private millers	0	1.0	+1.0 (F)	.832	- .168 (M)
Technical Assistance	.5	.16	- .34 (G)	.8	+ .64 (N)
Training	0	0	0	.5	+ .5 (O)
Contingencies	<u>0</u>	<u>0</u>	<u>0</u>	<u>.44</u>	<u>+ .44 (P)</u>
Total <u>1/</u> (of which FX millions)	17.75 (7.12)	11.3 (5.0)	-6.4 (-2.12)	10.9 (5.3)	- .4 (+ .3)

1/ Totals do not add due to rounding.

KEY

- | | |
|--|---|
| <p>(A) Cost adjustment, spare parts allowance
 (B) Alternative existed, not required.
 (C) Cost adjustment, spares
 (D) Cost adjustment, spares
 (E) Realization 20 complexes over-ambitious, lack of demand, reduced to 4 complexes
 (F) Realization need to address problems all millers, not just FMB.
 (G) PMB thought little T.A. needed.
 (H) Price adjustment
 (I) Decision conversion existing stores uneconomic, FMB will upgrade through local procurement as part of ongoing program.</p> | <p>(J) Reduced to 10 new milles but including parboiling and inflation factor and price adjustments added.
 (K) Complexes eliminated in favor separate mills and storage. May however be located on same site.
 (L) Result of decision in (I) above, but less storage required than originally thought.
 (M) Miscellaneous - plan being prepared.
 (N) Result of MASI recommendations for T.A. accepted by PM
 (O) Importance of study tours recognized.
 (P) Addition of unforeseen contingencies.</p> |
|--|---|

B. Detailed Description: The Rice Storage and Processing Project is designed to increase the efficiency of current paddy procurement, storage and processing and to increase storage and milling capacity in Sri Lanka. Achievement of this project purpose will contribute to the sector goal of increased self-sufficiency in food production because more efficient procurement, storage, and milling of any given paddy production will result in more rice available for consumption.

The project purpose will be achieved essentially over a four-year period by providing (a) \$1,649,000 and Rs 24,917,400 to purchase approximately 3,100 moisture meters and 3,500 paddy cleaners which will be installed in existing paddy procurement centers and will enable procurement to take place on the basis of fair weight for actual paddy received rather than on the basis of a "guesstimate" of moisture and impurity content; (b) \$167,000 and Rs 4,965,700 for the purchase of 900 paddy dryers which will be installed in Paddy Marketing Board Stores and will enable PMB to store paddy at a uniform moisture content thereby decreasing losses incurred with storage at a higher moisture content; (c) \$1,487,000 and Rs 17,589,500 for the procurement and construction of 10 additional modern two TPH rice mills to be operated by PMB and which will provide an additional 96,000 T/year effective milling capacity ¹/₁; (d) \$258,000 and Rs 18,884,900 for construction of eight new storage buildings which will provide storage for an additional 40,000 tons of paddy under controlled conditions; (e) \$832,000 for assistance to upgrade milling operations in the private sector under a program for which an implementation plan will be prepared; (f) \$751,000 and Rs 1,320,800 for 77 man-months of technical assistance in the areas of project coordination, mill operations, field operations, private miller development, manufacturing, and financial control to enable PMB to implement the above program; and (g) under PMB's operating budget, training at PMB's newly commissioned training center for an undetermined number of current and newly hired staff in the areas of procurement, mill and storage operation, and maintenance.

Success in using the outputs to achieve the project purpose will be indicated by reaching the end of project status indicated in Table 3.

¹/₁ The actual total increased milling capacity will depend on decisions to be made by PMB during project life regarding phase out of some existing uneconomical PMB mills.

TABLE 3

	Beginning Project 1976	End Project 1981
1. Bulk storage exist at no. stores	6	14
2. PMB storage capacity in tons	260,039	300,039
3. a. Moisture meters used at purchase centers	392	3,180
b. Moisture meters used at PMB stores	313	321
c. Dryers at PMB stores	6	307
d. cleaners at purchase centers	-	3,180
e. cleaners at PMB stores	6	184
f. paddy stored at % moisture content	±18%	14%
4. a. PMB milling capacity - tons per year	148,050	244,050
b. PMB parboiling capacity -tons per year	106,159	202,159
5. a. Outturn of PMB Mills % parboil	67	71
b. Outturn of PMB Mills % raw	65	69
6. Quota Miller Capacity	446,680	546,436
7. Other private miller capacity	1,065,603	1,075,569
8. a. Outturn of Quota Millers % parboil	67	71
b. Outturn of Quota Millers % raw	65	69
9. Private millers received training - No.	18	218
10. Financial Losses in Operation (%):		
a. Moisture content	2.5	0.5
b. Dockage	4.3	1.3
11. Physical Losses of Rice:		
a. rnyysical in storage	2.1	0.5
b. Milling and Parboiling	2.5	0.5
c. Consumer re-processing	12	-
12. PMB operation cost, transport, handling commission, interest, salaries storage and milling, maintenance and depreciation (Ref. MASI report page 214) Rs/ton of parboiled rice	2,579	2,445

Assuming a loan agreement is signed in September 1976, the outputs will be reached during calendar years 1977-1980 according to the following planned timetable:

- End of 1977 - A) Completion and evaluation of current pilot project for paddy cleaners, meters, dryers.
- B) Construction and operation of 3 new 2 TPH rice mills.
- End of 1978 - A) Installation of all 3,100 moisture meters, 500 paddy cleaners and 300 dryers.
- B) Completion and use of 3 storage units providing 15,000 tons new bulk storage.
- C) Construction and operation of 4 additional new rice mills.
- End of 1979 - A) Installation and use of additional 1,200 paddy cleaners, and 300 dryers.
- B) Completion and use of additional 15,000 tons bulk storage in 3 additional units.
- C) Completion and operation final 3 new rice mills.
- End of 1980 - A) Installation and use of final 1,781 paddy cleaners and 300 dryers.
- B) Construction and use of final 10,000 tons new bulk storage in 3 units.

Technical assistance (see Annex 2, TA 26 for description/general scope of work for technical assistance) is scheduled as noted in Table 4.

TABLE 4
Technical Assistance Schedule
Man-Months

	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>Total</u>
1. Project Coordinator	12	12	12	12	48
2. PMB Mill Operations	4				4
3. Field Operations	3				3
4. Private Miller Devel.	3	3			6
5. Manufacturing	3	3			6'
6. Financial Control	<u>2</u>	<u> </u>	<u> </u>	<u> </u>	<u>2</u>
Sub total	27	18	12	12	69
7. Home office, (Project Director, Ag. Econ., Planner)	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>8</u>
	29	20	14	14	77

No schedule has yet been developed regarding assistance to private millers.

PART III - PROJECT ANALYSES

A. Technical Analysis

1. Capability and Experience of Implementing Agency. The formulation of this project is the culmination of a series of studies and developments over the past five years. The review of PMB's accomplishments that follows will indicate the depth of PMB's competence and experience and will provide a basis for judging the technical project related decisions made by PMB.

a. The PMB with the FF/IRRI assistance program developed a training center at Gannoruwa, where almost all PMB employees and some private millers have been trained in most technical aspects of the industry. In addition, through this program a number of PMB staff have received training abroad in management, engineering and marketing. These staff members subsequently assumed more important positions in the PMB's development program.

b. The RPDC will be in operation during the latter part of 1976 and will continue through the next several years to expand training activities (for both PMB staff and private sector personnel) and conduct research and development work in all aspects of the paddy post production industry.

c. During the past four years, the PMB has studied several specific problems of the industry (reports on each study available with PMB) and the results of these studies have assisted in better field operations and provided guidance in planning and development.

d. During the past four years, the PMB has had an active program of upgrading existing facilities, mainly paddy stores, parboiling plants, and rice mills. This program also incorporates the use of new technology in order to reduce losses, improve rice quality, and reduce operation cost. Through this upgrading exercise the PMB staff have learned more about the use of improved technology and how to benefit from it. This program is continuing at present and will continue for many years until all existing paddy stores are in proper shape and correctly used. Most of the existing rice mills will be maintained only until they can be replaced (since they have far outlived their useful economic life).

e. Beginning with a study and plan in 1972, with GSL support, the PMB began the construction of four new storage and processing complexes. Each of these plants included; receiving, cleaning, drying, conveying equipment, 5,000 tons of bulk-silo storage, and a two-ton per hour parboiling and rice milling plant. The rated capacity of each complex is

12,000 tons of paddy per year. Each complex incorporates modern, proved, scientific technology in storage, drying, parboiling and milling.

A Block Diagram of these complexes illustrating the general steps at each stage is shown in Annex No. TA-1. Annex TA-2 shows the flow diagram of the equipment and paddy silos. Annex TA-3 shows the typical plant (complex) layout, with roads, silos, parboiling plant, and rice milling building. TA-4 shows a front elevation of a complex.

In addition to these complexes, the River Valleys Development Board, through the assistance of the ADB is constructing two similar storage and processing complexes in Uda Walawe area. These will be completed in mid-1976 and handed over to the PMB for operation.

In 1975, the PMB began construction of two more similar units, one in Anuradhapura and one at Kantale. An implementation schedule for the Anuradhapura complex is shown in Annex TA-5. The new flow diagram is shown in Annex TA-6. The complex layout of buildings, is shown in Annex TA-7 and the equipment details in Annex TA-8. A complete "project proposal and plan" for each new complex is available with PMB, including cost and economic analysis for each site plan.

The Kantale plan is somewhat different and a flow diagram is shown in Annex TA-9. The site layout is shown in Annex TA-10, with the equipment details in Annex TA-11. These drawings illustrate the technical detail of planning and competence of the PMB engineering staff.

All of these eight new complexes will be put into operation during 1976. Operating and other staff have been recruited and are now being trained.

PMB is also involved with the manufacture of new equipment for these units. Conveyors, dryers, cleaners, and some components for parboiling and rice milling machinery are now being manufactured in the country to support these needs. (More details of the private sector manufacturing are covered in pages 168 to 188 of the MASI report.)

It should be emphasized that through the upgrading and construction programs of PMB during the past four years, the organization has grown exceptionally fast, become technical competent, and carried out the programs satisfactorily, illustrating their abilities, management and leadership. The present PMB organization chart is illustrated in Annex TA-12. The PMB is working toward an organizational setup shown in Annex TA-13 (which is similar to that proposed by MASI in pages 196-205 of their report).

f. Considering all the present needs of the industry, the previous accomplishments of the PMB (and the ability of the PMB organization), PMB is confident in undertaking the proposed development plan which calls for an investment program over the next four years as follows:

	Total Investment <u>US\$ 1,000</u>
(1) Improve the Paddy Purchase Program	4,169
(2) Additional Storage Facilities	1,745
(3) Additional Processing Facilities	2,872
(4) Contingencies (on items 1, 2, & 3)	440
(5) Private Miller Assistance	832
(6) Technical Assistance	805
(7) Training	<u>50</u>
Totals	10,913

This program has been developed through a current, very detailed study of the industry, its needs, and the appropriate technology available. The steps in developing this plan are explained in the following sections.

2. Study of the Industry

In 1972 an analysis of storage and processing requirements was carried out, to determine the effect of increasing paddy production on PMB's existing facilities. Based on the results of this study, the first construction of additional storage and processing facilities began. This additional capacity (now eight storage and processing complexes) satisfies only a part of the industry requirements.

The same type of study was continued in 1974/75, resulting in a proposal (January 1975) for foreign assistance to help provide the additional requirements of the industry. In early 1976, a more detailed study was carried out. This study began with attempting to identify paddy production targets for the country on a district basis. Considering the past four-year performance in paddy production, and all the factors affecting production, it was felt that the production targets identified in the MASI report pages 1-35 (summary on page 20) and figures of similar magnitude at times estimated by various GSL entities would not be realistic for the coming years. The country total earlier estimated is presented in Annex TA-14, and in the table, Annex TA-15 and show a maximum production estimate of 2.27 million tons in 1980.

The paddy production by districts was reestimated by plotting previous production on graph paper and determining a trend line by the method of least squares. This trend line was then extended for the next four years. The summary of all districts is shown as country total in Annex TA-16 as a graph and in TA-15 in table form. This shows a target of paddy production of 1.88 million tons in 1980. This is considerably less than that which the GSL would like to achieve; however, it appears to be a realistic target unless inputs to paddy production improve considerably in a short time.

Therefore for planning purposes at this time, the low target of 1.88 million tons in 1980 is being used by the PMB. In using this low target the PMB understands the liability of not having adequate storage and processing facilities to handle the paddy production if production exceeds this target by 1980. The PMB will monitor paddy production very carefully during the next few years, and if the production begins to follow an increased trend line, it will, along with other government agencies, reevaluate its storage and processing requirements to meet expected production, and replan accordingly.

The next critical step in planning was to estimate the expected paddy procurement by PMB. To do this, each district was studied separately and evaluated as shown for a sample district in Annex TA-17. This provided a base for estimating future paddy purchases by months. This analysis also shows (Annex TA-17) the percentage paddy purchased by years, and an average over seven years. In this district case, the average paddy purchase is 24.3% of production. Each district was studied and these tables are available with PMB.

Considering the present level of production in the country, the amount of paddy purchased, and other factors related to marketable surplus, the PMB predicts the percentage purchased by district will rise 2% annually. This is shown in Annex TA-18, in the 4th Column, (this column shows actual percent purchased for 1972-1975, and projects purchases for 1976-1980 as 33%, 36%, 38%, 41% for island-wide analysis). Annex TA-18 shows the Paddy Production from 1972 to 1975 as actuals, and projections for 1976 to 1980. The first column "high" is the production estimates used earlier in the MASI report, and the second column "low" shows the new projections with a target of 1.88 million tons in 1980.

Annex TA-18 also shows the rated and effective milling capacity of PMB facilities (the actual paddy milled from 1972 to 1975 is shown under the column "effective capacity"). The PMB is increasing its milling capacity and plans to increase it even more--as shown in the table. The quota--private millers capacity is also shown. Even though their "percent" is decreasing, the actual amount they will mill increases slightly. In this table the "PMB rice mills plus the quota rice millers" will mill all the paddy purchased by PMB. The remaining paddy (production less purchases) will be milled by other private millers. This analysis provided a best estimate of the quantities to be milled each year by each of the three parties concerned--the PMB mills, the quota millers, and other private millers.

The next step was to analyze each district, to determine the expected paddy to be purchased by months, the milling capacity by months, the storage capacity, and the balance of paddy remaining in storage at the end of each month. An example of this type of analysis is shown in Annex TA-19 for Batticaloa District.

In this case the expected paddy procurement is 72,491 tons for the year 1980, shown monthly. The milling capacity is 2,900 tons per month, the storage capacity is 10,570, with a peak storage requirement in June of 4,667 tons. The rice production is shown as 1972 tons per month, of which only 320 tons are required for the ration system in that district, leaving a balance of 1,652 tons of rice to be moved to deficit districts.

Several approaches to determining storage and processing requirements have been studied. However, the PMB believes this method is the most accurate and reliable. A similar analysis was carried out in all districts; the results are shown (balance of storage and processing) in Annex TA-20 and 21. Analysis of these results indicates:

a. Storage: The PMB has 307 stores located in 170 locations. The storage locations are shown on page 96 of the MASI report in a country map. Since the original storage capacities were given to the PMB in 1972, there has been considerable discussion about what is the "real" storage capacity of these stores. The PMB storage section therefore undertook a survey of the capacity and size of each store. This is now available with PMB, showing each store, with its location, and dimensions, and "real capacity." A summary of all districts is shown in Annex TA-20 for a total storage capacity of 260,000 paddy tons.

Also shown in Annex TA-20 is the deficit/surplus storage capacity for each district. This is also represented on a map --Annex TA-21. Since in some districts a surplus capacity exists, the question of transporting paddy from "deficit storage districts" to "surplus storage districts" was thoroughly studied. It was found that logistics and cost considerations justified a decision to build new storage in the deficit areas, and to try to utilize surplus storage in other districts for the storage of other commodities such as fertilizer, machinery, etc., rather than transport paddy to other areas for storage. (If in 1980 paddy production reached 2.27 million tons, the balance storage required, even if all storage could be utilized at any cost is 39,630 tons, and the present plan calls for building 40,000 tons). It should also be kept in mind that even when the additional storage is built and in operation, there would not be any storage capacity for a "buffer stock."

b. Processing: The same individual district analysis was completed (and is with the PMB) for surplus/deficit processing capacity. A country summary is shown in Annex TA-22 table and illustrated on the map in Annex TA-23. The same type of transport of paddy from deficit milling districts to surplus milling districts study was conducted and again, justified new milling investment; therefore the decision was made to build additional milling facilities in the deficit districts.

From this analysis, the planned milling capacity is shown in Annex TA-24 for certain districts. This also shows the implementation schedule by year, by district, and the additional milling capacity, both rated and effective for each year during the plan.

A financial comparison of the present system of operation to the proposed new system of operation is shown in Annex TA-25. This shows the "new system" of storage and processing has a benefit of Rs 1,386,841 (or US \$109,200) per year for the parboiled plant, over the present system of operation, based on 12,000 tons of paddy per year.

PMB and MASI analyzed rice mill size alternatives and parboiling vs. raw milling. This analysis is in MASI report pages 126-138 and confirms PMB's decision to use two TPH mills with parboiling.

Considering again, the past performance of PMB activities, the present capabilities and the future requirements, an implementation plan has been developed over a four-year period as shown in Part 4, B. This provides a phasing in of storage and processing facilities beginning in 1977, continuing through 1980. The plan also includes the paddy purchase program, its pilot project operation in 1977, and the remaining development through 1980.

The details of the procurement, storage and processing programs are presented in the following sections.

3. Paddy Purchase Program

Up to the time PMB was constituted, the marketing of paddy was by volume, the bushel being the standard measure. This system had many drawbacks and provided several constraints to any scheme of improvement and modernization. One of the first changes brought about by PMB was the introduction of a weight system in the handling and marketing of paddy and rice. Measurement by weight enabled PMB to more accurately determine paddy quantity and to determine realistic and consistent milling outturns. The introduction of measurement by weight, as expected, created problems in "moisture" as part of the procurement of paddy. The moisture content and impurities (particularly sand and stones) which did not significantly affect measurement by volume became very important when paddy was measured by weight. In order to facilitate the purchasing of dry paddy the PMB purchased 800 moisture meters in 1973. These are now used in all PMB stores and in purchasing centers in four districts. This project envisages the supply of moisture meters to all the remaining purchasing centers in order that the procurement of paddy can be based on moisture percent, which is more fair to the buyer and to the seller.

In order to minimize storage losses, all paddy must be cleaned and dried properly. To get clean paddy the PMB has found that the most feasible solution is to clean the paddy before purchasing. This also reduces the purchase of impurities, which are now estimated to average 4.3% of paddy purchase. The plan is to have a paddy cleaner at each purchase center, where all paddy brought by farmers can be cleaned--removing most impurities before weighing for purchase. This appears to be a far more practical and successful working arrangement than any alternatives such as "sample checking" for percent impurities and cleaning later.

Frequently it has been found that farmers are unable to dry paddy sufficiently before bringing it to the purchasing center. Situations of this nature are caused by prevailing weather conditions and are exaggerated by the general lack of storage and even sun-drying facilities at farm level. It is therefore proposed to install simple batch dryers at the PMB stores to dry any paddy that has to be purchased wet.

The provision of moisture meters, cleaners and dryers in the procurement program is a prerequisite for achieving the following objectives:

- a. The purchase of all paddy the farmer offers for sale.
- b. To put into storage only clean and dry paddy and thereby reduce losses in storage and maintaining good quality.
- c. To develop a system of pricing where moisture and impurities are not paid for.

The implementation of this part of the project is subject to the evaluation of a pilot project for which PMB has already budgeted the necessary funds for 1976. The conditions under which PMB procurement operates and the problems associated with it make the operation unique in that no examples of similar operations elsewhere are available for observation. PMB is very much aware of the problems that may need solutions in the implementation of this scheme and feels that a pilot project covering a season's operation will bring out these problems and save considerable finance and effort in programming the spread of new procurement procedures over the whole country.

PMB has already run one pilot project in the Chavalakade area of Ampare district where moisture meters were introduced to purchasing centers. This pilot study was directed toward determining the kind of problems that may arise in operating the new complexes. This study has made PMB aware that it is desirable to study this further on a pilot scale. The proposed pilot project will include the provision of moisture meters and cleaners at purchasing centers and dryers at PMB stores. One or two stores will be selected together with the purchasing centers serving them. One season's operation will enable PMB to make the following decisions:

- a. Whether PMB or the purchasing center should operate the cleaners.
- b. How best a price system should be operated, i.e., should price be docked for excess moisture, should farmers be made to compensate for excess moisture in kind, or should incentives be paid for drier paddy?
- c. What are the real costs of drying and cleaning and how are these to be adjusted when determining prices?
- d. How should the maintenance of cleaners be organized and carried out?
- e. What should be the strategy for farmer education, training of procurement center personnel and price determination in applying the scheme on an island-wide basis?

4. Storage: An analysis of storage requirements to meet the increases expected in production shows that five districts are lacking in the storage capacity required. Two alternatives to solving the problem were considered:

- a. The transport of paddy to stores in regions where storage is in excess of requirements.
- b. Building new storage facilities in the deficit areas.

The decision to build new stores is based on costs including the realization that the quantity of paddy that would need to be transported to other sites would involve a fleet of vehicles of a strength that is clearly beyond the realm of possibility in the foreseeable future.

The type of new storage to be provided, shows the following alternatives:

- a. Warehouses to store paddy in bags as currently practiced: PMB studies have shown that such stores do not provide for maximum utilization of cubic space provided, as compared to bulk storage and hence the unit cost is higher than for similar buildings storing paddy in bulk. Bag storage is not conducive to ideal conditions of grain conservation and the storage of grain in good condition for more than a few months is not possible. PMB studies show losses up to 12% in paddy thus stored for six months. Foreign exchange for the purchase of gunny bags is a sizable item of operating cost.

- b. The conversion of existing stores to bulk stores would increase storage available by up to 50% in many cases. However, all but 87 PMB stores are several years old and need extensive repairs before

such conversion. Also the conversion of these stores involves reinforcement of walls and other structural alterations and hence it is felt that the expenditure is not justified. ^{1/}

c. The construction of new bulk stores appears to be the most feasible. On analysis of costs the bulk stores are considerably cheaper to operate than bag storage per ton of paddy per year. PMB has constructed the first four complexes using reinforced concrete silos. Not only have these been more expensive than expected, but the techniques of construction have been unfamiliar to contractors resulting in the creation of many problems that were difficult to solve. PMB feels that, while experience will improve the standard of construction and reduce unit cost, the alternative of bulk warehouses (flat storage or horizontal storage) is currently cheaper and well within the capabilities of producing a high standard of construction from contractors in any part of the country.

The basic principles of designing flat bulk storage were laid down by H. Barre during his consultancy in 1974. One such store was designed for construction at Maha Illuppallama and tenders were called for from local contractors. The response was excellent and the price quoted was considerably less than what PMB was paying for silos.

These bulk warehouses are constructed of brick masonry, reinforced with concrete and involve no more elaborate techniques or equipment than are used in normal housing construction in the country.

The project calls for the time-phased establishment of 40,000 tons of new bulk storage in five districts. Modifications during the project period might involve changes in the type of storage built in the light of experience gained on bulk storage already in use.

5. Processing

The responsibility of processing paddy and supplying the Food Commissioner with rice to meet the ration devolves on PMB. This is achieved by the PMB running its own mills as well as by contracting the milling of paddy to over 500 private millers in all parts of the country.

^{1/} PMB, however, has been carrying out a program of upgrading existing stores over the last four years. These improvements are: (a) repairs to floors, roofs, etc., (b) bird proofing, (c) construction of additional space for storing gunnies and for stores offices, and (d) provision of dunnage.

These existing stores will still be in use since the new stores envisaged in the project will be necessary to cope with the expected increase in production only.

Currently only 15% of the total rice milled for the Food Commissioner is in PMB mills. With the exception of three mills, all PMB and private mills are of low capacity and of outdated design. On the one hand there is a loss in outturn of rice due to outdated and inefficient machinery, and on the other there is a shortage of milling capacity to cope with increased production expected over the next few years. The reduction of losses is necessarily linked with the improvement of rice quality. The rice produced in Sri Lanka is acknowledged by all to be of probably the worst quality in the world. Besides an improvement in the mills themselves, there is a necessity to introduce improved systems of parboiling since some consumers' preference is for parboiled rice, and the process of parboiling gives higher outturns of rice from paddy, improved storage qualities of rice, provides more nutritious rice and reduces losses of starch in cooking. Current parboiling systems are wasteful and produce rice with an objectionable smell. Modern methods of parboiling produce better rice at lower cost and have to be established both at PMB mills and private mills.

Projections of production indicate the need for new milling capacity in several districts. The total milling deficit in nine districts is 13,348 tons per month. It is proposed to set up 11,500 tons per month within the PMB in six districts and let private millers handle the remainder.

It is therefore proposed that 10 mills be provided in the project to augment or replace existing PMB mills in the same locations. The new mills are to be of two-ton per hour capacity. The MASI report provides an explanation of the economics of one ton per hour, two tons per hour and four tons per hour mills on page 129 of the report. The most economical size is four tons per hour; however, in a rice mill, the steady supply of raw material is a necessary prerequisite. This is dependent on the storage available at the mill site, which in turn depends on the area of the neighborhood of supplying the paddy and the costs of transport of paddy to storage. All things considered, PMB has established that a two TPH rice mill milling 12,000 tons of paddy per year is the most manageable and economical unit. MASI and AID concur. The only exception is the four TPH mill that is now being installed in Kantalai, an area with peculiar problems of its own.

6. The Private Industry: Private sector rice millers currently account for 85% of the PMB milling program. In addition, there are a large number of small private hulling plants doing custom milling. The modernization of PMB operations cannot ignore this important sector especially in view of the fact that private sector mills will continue to mill the bulk of paddy, both for the ration and for the open market. While PMB's current analysis is not sufficiently advanced to provide an implementation plan, the parameters of the earmarked assistance include consideration of both the local manufacturing industry and the local rice milling industry.

a. Manufacturing

The country's manufacturing facilities are of two main types. On the one hand there are a few large manufacturing firms with very good facilities for manufacturing machinery. These firms have been geared over the years to service imported machinery for the plantation industry. They are unfortunately not oriented toward manufacture (as opposed to fabrication on job contracts). On the other hand, there are several small-scale manufacturers, usually family businesses that are labor-intensive, that are completely flexible as regards numbers and types of machines that can be manufactured and that work with low overheads and minimal labor problems. The existing rice mill manufacturers come within this category. They have the advantage of knowledge, long experience in the rice industry, excellent liaison with private millers, and the consequent understanding of the problems that the big firms lack. Any help to manufacturers of rice mill machinery has to be concentrated in this group.

There are at least five manufacturers in the country who are manufacturing and selling rice mill machinery such as rubber roll shellers, separators and polishers, together with the bucket elevators necessary to integrate these components into a rice mill. A large number of small shops also produce spare parts. Although these components are improvements on the steel huller, they are in fact copies of Japanese equipment of 1940's vintage.

Many of these small manufacturers may need certain machine tools and equipment (such as heat treatment equipment) as well as improved designs, training of technicians and advice on managerial and organizational matters. Further dialogue with these manufacturers and detailed planning are necessary before a definite plan for disbursement of AID funds can be drawn up.

b. Private Miller Assistance

Concomitant with an increase in PMB milling capacity, PMB anticipates increased procurement sufficient to require an increased absolute quantity of milling by PMB's quota millers. The additional milling required by quota millers beyond that which they are now capable of doing is very roughly estimated at 50,000 TPY. In addition to increased milling, it is likely that quota millers will also be required to do higher quality milling as current standards are refined and enforced.

In order to assist their quota millers to expand and upgrade capacity PMB plans to:

1. Conduct an extension activity to assist millers technically;
2. Train some millers at the RPDC;
3. Provide to quota millers a better, more uniform quality of paddy which will enable the miller to produce a better quality rice at a higher outturn;

4. Revalue the "milling hire" or payment to the miller for his contracted services to provide a fair return under the continually changing economic conditions in the country;

5. Work with private millers and the Food Commissioner to establish rice grades, standards, and inspection procedures;

6. Work with financing institutions to assist millers where needed for purchase of new milling machinery; and

7. Increase the availability of mill components through working with local manufacturers to produce additional components, and importing those components which cannot be made locally.

A major requirement to implement this program is foreign exchange to import mill components. PMB estimates that the cost of upgrading a small mill is Rs 132,000. This would include the addition of a paddy cleaner, a paddy separator, cone polisher and small bucket elevators. The cost of imported items is estimated at 40% of total cost, or at Rs 12.7 = \$1, \$4,160/mill.

Local manufacturers could produce components for 50 mills/year. Thus over a four-year period, 200 mills could be upgraded with a total FX cost of \$832,000.

One result of upgrading mills could well be increased capacity beyond that required by PMB. PMB believes that soon after project completion 300 quota millers with additional quality capacity will be sufficient to meet PMB requirements. If this occurs 200 quota millers will mill as private millers rather than continue to receive a quota from PMB.

7. Environmental Assessment: Judgments on the likely environmental impact of the project have been made by the project development team consisting of an AID/W agricultural economist and a capital development officer, an agricultural engineer advising the Paddy Marketing Board under the auspices of IRRI, and the engineering and management staff of the Paddy Marketing Board. An assessment of the impact of the construction and operation of the facilities planned under the project, essentially storage units and rice mills, was made on the basis of comparing these facilities with similar facilities constructed within Sri Lanka and in nearby countries.

The impact of the construction and operation of the facilities and the project as a whole will not have a negative impact on the environment. For the most part, mills and storage units will be constructed on existing mill or storage sites. In cases where mills or

stores are constructed in new locations, it is planned that construction will be on vacant land held by the Government and that no occupants will need to be moved. At current mill and store sites, electric power and roads exist. It is planned that new sites will also be in close proximity to both power and roads, and that the need for land leveling and grading and the building of access roads will be minimal. Proper drainage will be a major factor in site development since it is essential to proper milling and storage operations and should have a positive impact on the area.

The small size of the mills (two TPH) and the storage units (5,000 tons) are suitable for a decentralized storage and milling effort and will mitigate against significant environmental impact.

B. Financial Analysis and Plan

1. Financial Analysis

a. Method. During November 1975 MASI, under contract to AID, performed an elaborate financial analysis of PMB operations including capital expenditures resulting from the project. The current project differs slightly from that envisioned at the time of the MASI analysis primarily in that some cost adjustments have been made and the number of mills to be constructed reduced from 14 to 10. While the effect of these changes might be a slight reduction in the financial rate of return, it does not appear that the overall implications of these changes are such that they would invalidate the conclusions of the MASI analysis. A summary of MASI's analysis is presented below. Annex 3 provides the Table of Contents for the MASI report and additional relevant financial tables. The complete report is available in ASIA/PD.

b. MASI's Conclusions: "While the planned expansion in capital investment by the Paddy Marketing Board/Government of Sri Lanka is substantial, the returns on investment, based upon either fixed assets or authorized capital (issued)/grants; are worthwhile for PMB and the GSL.

"MASI believes there is nothing in this financial analysis which significantly affects our companion report, 'Techno-Economic Analysis of PMB Operations and Planning, Sri Lanka.' The PMB plans appear sound financially, provided there are no major disruptions to their program. The investment seems sound also for the Government, and we presume the GSL will properly support the PMB's need for 'direct' support as grants and 'indirect' support as short-term debt from the Refinance People's Bank.

"Based upon this financial analysis, MASI is pleased to recommend that AID respond affirmatively to the PMB application."

c. Financial Rate of Return

MASI analyzed eight cases of assumptions regarding outlays and inflows and found that in the base case the discounted rate of return on investment was 35.5%. Table 5 presents information on all eight assumptions.

TABLE 5

FINANCIAL ANALYSES — PRESENT VALUES AND RETURNS ON INVESTMENT,
EIGHT CASES OF ASSUMPTIONS OF OUTLAYS AND INFLOWS *

<u>CASE</u>	<u>Total Cash Returned</u> (000 Rs.)	<u>Present Value</u> (000 Rs.)	<u>Net Present Value</u> (000 Rs.)	<u>Payback Period</u> (Years)	<u>Discounted Payback Period</u> (Years)	<u>Discounted Rate of Return on Investment</u> (%)
1: Fixed Assets Outlays/Working Capital Inflows, no residual value	360,315	316,891	219,444	3.25	3.33	35.5
2: Fixed Assets Outlays/Working Capital Inflows, net worth residual value	528,532	461,997	364,550	3.25	3.33	45.4
3: Fixed Assets Outlays/Net Income Before Taxes Inflows, no residual value	469,803	409,121	311,610	3.62	3.77	39.8
4: Fixed Assets Outlays/Net Income After Taxes Inflows, net worth residual value	334,448	285,339	187,828	4.31	4.36	25.0
5: Government Investment Outlays/Net Income Before Taxes Inflows, no resi- dual value	164,774	142,881	92,288	3.62	3.74	26.7
6: Government Investment Outlays/Net Income Before Taxes Inflows, net worth residual value	403,849	349,110	298,516	3.62	3.74	49.3
7: Government Investment Outlays/Net Income After Taxes Inflows, no residual value	(24,654)	(27,544)	(78,138)	0	0	negative
8: Government Investment Outlays/Net Income After Taxes Inflows, net worth residual value	268,494	225,328	174,734	4.34	4.38	28.4

* See Table 4.2A for detailed flows by year.

NOTE: Cost of capital is assumed at 3%, the present interest rate charged to PMB by the Refinance People's Bank.

2. Recurrent Budget Analysis of PMB

PMB's operating budget will provide funds for on-going PMB expenses and operation and maintenance of the project during and after AID participation. The 1977 budget is currently being prepared by PMB and will take into account the need for an increased budget for staff salaries, maintenance, etc. MASI's conclusion regarding the financial viability of the project presumes continued GSL support for PMB's operation as may be needed. PMB has not had a problem securing such support in the past and there is no indication that there will be any problem in the future. A covenant to this effect has been discussed with PMB and the External Resources Division and will be included in the loan agreement.

While PMB's budgeting procedures have been adequate in the past, PMB (and AID) believe that at times the PMB system of financial controls and management information has been too slow for proper timely decision making by management. Therefore, the technical assistance under the project will include two months' service of a financial controls specialist early in project life.

3. Summary Conclusions Financial Analysis and Plan

PMB has in the past adequately planned their financial resources and there are no indications that they will not continue to do so in the future. Planning to insure adequate resources to run and maintain the project has been extensive and sound. No problems are foreseen in providing essential services during and after AID participation in the project. The GSL is aware of and intends to fund local costs required under the project. Assurance of the availability of local costs sufficient for the initial year of the project will be a precondition to initial disbursement of loan funds.

The items in the financial plan have been costed by PMB, IRRI/FF, and MASI and reviewed by AID. Factors for inflation and contingencies have been included. The costs are realistic and the project's financial plan is reasonably firm.

Overall, the project is financially viable and sound.

As indicated above and in Section 3D, the project economic and technical feasibility has been established and a reasonably firm cost estimate made. We conclude the project meets the requirement of 611a.

TABLE 6
 SUMMARY COST ESTIMATE AND FINANCIAL PLAN 1/
 (US \$ 000)

	<u>AID</u>	<u>GSL</u>	<u>Total</u>
I. Paddy Procurement Program			
A) Cleaners	1239	1859	3098
B) Moisture Meters	410	103	513
C) Dryers	<u>167</u>	<u>391</u>	<u>558</u>
Subtotal	1816	2353	4169
II. Paddy Storage			
A) Civil Works	92	824	916
B) Equipment	<u>166</u>	<u>663</u>	<u>829</u>
Subtotal	258	1487	1745
III. Rice Mills			
A) Civil Works	29	449	478
B) Milling equipment	560	140	700
C) Parboiling equipment	<u>898</u>	<u>796</u>	<u>1694</u>
Subtotal	1487	1385	2872
IV. Contingencies (5%)	<u>178</u>	<u>262</u>	<u>440</u>
V. Subtotal I - IV	3739	5487	9226
VI. Private Miller Assistance <u>2/</u>	832	--	832
VII. Technical Assistance			
A) Consultants	701	104	805
B) Training <u>3/</u>	<u>50</u>	<u>--</u>	<u>50</u>
Subtotal	<u>751</u>	<u>104</u>	<u>855</u>
VIII. TOTAL:	5322	5591	10,913

1/ All AID costs are for FX, all GSL costs are for local currency. RS. 12.7 = \$1
 An inflation factor of 10%/year was included for items I-III based on four
 year program of expenditures. Salaries of PMB staff are included in PMB
 operating budget.

2/ Local costs of private miller assistance will come from private miller.

3/ Local costs of training included in PMB operating budget.

TABLE 7

Costing of Project Outputs/Inputs

(US \$ 000)

	<u>Procurement</u>	<u>Storage</u>	<u>PMB Mills</u>	<u>Private Miller Program</u>	<u>Total</u>
AID Loan	2094	459	1749	1020	5322
GSL Contribution	2498	1587	1480	26	5591
Total	4592	2046	3229	1046	10,913

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PMB/AID INVESTMENT SCHEDULE

(Equivalent in Thousands of U.S. Dollars)^{1/}

	1977					1978					1979					1980					Totals				
	No. of Units	Unit Price	LC	FC	TC	No. of Units	Unit Cost	LC	FC	TC	No. of Units	Unit Cost	LC	FC	TC	No. of Units	Unit Cost	LC	FC	TC	No. of Units	LC	FC	TC	
I. Paddy Purchase Program																									
1. Cleaners	-	.708	-	-	-	500	.774	234	156	390	1,200	.857	617	411	1,028	1,781	.943	1,008	672	1,680	3,481	1,859	1,239	3,098	
2. Moisture Meters	-	.152	-	-	-	3071	.167	103	410	513	300	.615	129	55	184	304	.677	144	62	206	3,017	103	410	513	
3. Dryers	-	.508	-	-	-	300	.559	118	50	168			746	466	1,212			1,152	734	1,886	904	391	167	558	
4. Sub-Total							455	616	1,071												2,353	1,816	4,169		
II. Paddy Storage																									
1. Civil Works	15	21,000	284	31	315	15	23,100	312	35	347	10	25,400	229	25	254	-	-	-	-	-	40	824	92	916	
2. Machinery	15	19,000	228	57	285	15	20,900	251	63	314	10	23,000	184	46	230	-	-	-	-	-	40	663	166	829	
3. Sub-Total			512	88	600		563	98	661			413	71	484								1,487	258	1,745	
III. PMB Processing Plants																									
1. Civil Works	3	43.33	122	8	130	4	47.67	179	12	191	3	52.4	148	9	157	-	-	-	-	-	10	449	29	478	
2. Milling Machinery	3	63.50	38	153	191	4	69.85	56	224	280	3	76.8	46	184	230	-	-	-	-	-	10	140	560	700	
3. Parboil Machinery	3	153.98	217	244	461	4	168.94	318	358	676	3	185.8	262	295	557	-	-	-	-	-	10	796	898	1,694	
4. Sub-Total			377	405	782		553	594	1,147			456	488	944								1,385	1,487	2,872	
IV. Contingencies (5%)			44	25	69			79	65	144			81	51	132			58	37	95		262	178	440	
V. Totals I & II & III & IV			933	518	1,451		1,650	1,373	3,023			1,696	1,076	2,772			1,210	771	1,981		5,487	3,739	9,226		
VI. Private Millers Assistance	1/4	832	-	208	208			-	208	208			-	208	208			-	208	208		-	832	832	
VII. Technical Assistance																									
1. Consultants	1/4	50	35	701	736	1/4	50	23	-	22	1/4	50	23	-	23	-	23	-	23	-		104	701	805	
2. Training			-	25	25			-	12.5	12.5			-	12.5	12.5			-	-	-		-	50	50	
3. Sub-Total			35	726	761		23	12.5	35.5		1/4	50	23	12.5	35.5			23	-	23		104	751	855	
VIII. Totals			968	1,452	2,420		1,673	1593.5	3266.5			1,719	1,296.5	3,015.5			1,233	979	2,212		5,591	5,322	10,913		

1/ Exchange Rate Used 12.7 Rs. per US\$; all cost shown is capital investment only; operation funds are included in PMB's operation budget.

2/ No Local Cost is shown with training, since this is part of PMB's ongoing operation budget.

C. Social Analysis

The social analysis has been prepared in two parts. Part I presents the AID project development team's assessment of the project's social impact; Part II was drafted by PMB staff and illustrates the views of the implementing agency, which are supported by the AID team.

Part I

The project will impact primarily on private millers, consumers of the rice rations, and paddy farmers. Substantial benefits will accrue to the general economy.

A. Private Millers

In the late 1960's both public and private sector milling operations in Sri Lanka were in disarray thru lack of incentives, lack of access to new equipment and lack of knowledge in the private sector, and lack of attention in the public sector. In line with national policy, the GSL approached improvement thru upgrading public sector milling creating further uncertainties in the private sector. Public sector operations gained an increasing share of production and private sector plant continued to deteriorate. The rated milling capacity of the private sector became less and less a measure of true milling performance as milling quality sunk further below acceptable levels. The number of millers applying for PMB quotas dropped from 1,000 in 1971 to around 500 at present. The dropouts presumably joined other licensed millers in handling paddy not procured by PMB but an uncertain business climate and the effects of prolonged drought may well have forced some out of business altogether.

In response to popular pressure for a better quality ration and in line with the previous trend in national policy the GSL continued to encourage upgrading and expansion of PMB capability without addressing private sector capacity. This was reflected in the original proposal for assistance submitted to AID which requested assistance solely for PMB operations. During subsequent project development PMB and the GSL became increasingly aware of the need to address all milling resources and a sizeable component for private sector assistance is reflected in the current proposal. The willingness of the GSL to refocus the project in this way we believe reflects if not a change in government thinking, at least a willingness to express what perhaps has been realized all along. This willingness to begin to address the problem of private millers alone should be of tremendous benefit to the private quota millers to upgrade the quality of their production and any decision to adjust the milling hire rate should be an additional incentive. The spread effect of increased domestic manufacture of milling components will be beneficial to millers in general.

It is likely that as a result of this project, the number of quota millers will be reduced as the output of those who remain increases. At the same time increases in overall production concurrent with increases

in PMB capacity will result in a slight increase in paddy available for processing by non-quota licensed and village millers. This increase will not allow full use of estimated rated capacity--but much of this rated capacity is either no longer available or results in such a poor quality product that it cannot be considered effective milling.

We believe that without this loan, PMB operations would have inevitably expanded to include at the least, PMB milling of all paddy destined for the ration. The financing available under the loan earmarked for private sector operations coupled with GSL willingness to move in this direction at a minimum will allow significant advances by private sector millers, and it is possible that as a result of this attention and "seed" money, development of the private sector will obviate the need for further PMB expansion of paddy milling operations.

In sum, the project provides substantial direct and indirect benefits to private sector millers.

B. Consumers

Consumers of both ration and non-ration rice will benefit from the production of a more preferred rice product. Since the ration composes a higher proportion of the income of the poorest elements of society (See Annex 1) those elements will receive relatively higher benefits both from a more preferred product, elimination of the need to re-mill ration rice, and greater availability of rice from given production particularly insofar as the latter reinforces the ability of the government to continue a ration. In addition consumers will have a direct savings of \$433,000 a year on project completion because a portion of ration rice will not need remilling. No disadvantages to the consumer could be determined.

C. Farmers

There are approximately 800,000 paddy farmers in Sri Lanka who produce paddy on 1.4 million acres. Approximately 88% of paddy farmers farm 5 acres or less. Thus, the bulk of paddy farmers in Sri Lanka is relatively small farmers. (48% farm less than one acre)

These farmers bring their paddy to procurement centers where they receive a fixed price based on weight. Since no facilities exist for measuring the moisture content of the paddy or for cleaning, PMB notes some farmers receive excess payments for false weights from excess moisture and chaff. PMB believes more influential farmers take advantage of this situation to the detriment of honest farmers. Since this project includes purchase and installation of moisture meters and cleaners prior to weighing it will result in some farmers receiving less for what they bring to the procurement centers. PMB believes though that in the longer term a just and efficient procurement system including a fair price system will reward efficient producers and benefit all farmers. PMB notes the recent successful installation of such a system in the Philippines and the support the system there receives from small farmers who appreciate fair treatment. PMB plans a year long pilot project designed to test potential managerial problems, farmer acceptance of the system, and a possible pricing system

before introducing moisture meters and cleaners at all centers. Results of pilot efforts to date show that after an initial period of farmer dissatisfaction, use of the system is seen as beneficial.

The AID project development team believes that in the short run some farmers will be disadvantaged by not receiving payment for false weight but that in the longer run all farmers will benefit from a more efficient marketing system and procurement on the basis of fairness-- and that the smaller farmers will derive the larger benefits from such a system.

D. The General Economy

Upon project completion in 1980 better procurement and processing techniques in FMB operations alone are expected to result in an additional 9,400 tons/year of rice being available for consumption than would have been the case without the project at the same level of production. Smaller savings will be realized in the four years leading up to project completion. This increased rice availability will directly offset an equal amount of rice which would had to have been imported resulting in a foreign exchange savings of \$1,865,000 based on current price of rice to the Food Commission of \$198/ton (or \$2.4 million at estimated import cost of \$250/ton).

We believe it is fair to assume in development and equity conscious Sri Lanka that this saving will benefit all segments of society, and quite probably if recent trends are any indication, the poorer segments of society to a greater extent than those segments relatively higher on the income scale.

Increased procurement from domestic manufacturers and construction firms valued at \$5.5 million through the life of the project as well as additional mills will result in increased employment. The extent of this additional employment has not been determined.

E. Role of Women

While women play a major role in all aspects of Sri Lankan society, and while this role is increasing (half of all university students and over half of the medical students are women) this project is not expected to have any major impact on them.

PART II

While the implementation of these proposals will benefit the entire community the main groups on whom there will be an immediate impact could be listed as follows: (1) Farmer, (2) Private Rice Miller, (3) Local Manufacturers of Rice Mill Machinery, (4) The Consumer, and (5) The Community.

Over the last three or four decades, the GSL's continued efforts to improve paddy production have had very far-reaching results in improving the incomes over 800,000 farmers. While the increases in production of paddy contributed to the overall increase in income, little or no emphasis was placed on the need to conserve and prevent losses from the time the rice crop was harvested. The attempts made now to make farmers aware of the substantial losses which could be prevented by modernizing the present practices at most of the pre-marketing stages, such as storing of good dried paddy, the creation of an awareness that wetpaddy stored over long periods incurs heavy losses both in quality and quantity, will no doubt be a benefit to the farmers. They will learn to adopt these practices gradually and past experience has shown that farmers are quick to grasp and adopt what is beneficial to them. They have shown remarkable adaptability to such changes, e.g., conversion of the system of purchases from volume to weight basis, willingness to adopt refraction tests for chaff at the time of selling paddy to the PMB, etc.

The present marketing transactions--whether to the PMB or to the private trader--of offering paddy for sale without properly drying or cleaning, sometimes even directly from the field to whomever is willing to buy when the demand is great or bringing the paddy to the stores when the farmer has no other outlet to sell his surplus, have in a big way promoted corrupt practices on both sides. Undried, uncleaned paddy is bought and sold with both parties cheating each other by not disclosing the losses which ultimately either one would have to bear. The local Co-op acting as the Agent of the PMB will invariably want more paddy delivered than what is invoiced if it is to accept the paddy in its undried, uncleaned condition. The proportion of this "excess" could vary with the volume of paddy being handled, and could easily be manipulated to either party's advantages. This type of corruption has contaminated all grades of personnel involved in the purchasing, storing and issuing of paddy to millers. It is reflected even at the time private millers hand over rice to the Food Commissioner when poor quality rice is accepted for a consideration. One way to eradicate corruption would therefore be to promote and maintain sound and wholesome methods of dealing in grain by insisting on the purchase of well-cleaned, well-dried paddy from the time the grain has been harvested.

The fear that these proposals aimed to get the farmer to clean and dry the paddy before selling to the "coop" will discourage him from selling to the "coop" is unfounded. The resistance could be present only

if there is a continued scarcity of paddy due to poor harvests as was experienced in GSL between 1972 and 1975, but, during normal times, the farmers would not find it so easy to sell paddy unless it is cleaned and dried. It is customary even now for the farmer to dry his paddy well before storing it at home even though it is for his own consumption. The paddy stored by him is constantly aerated by turning the paddy over regularly. He does not sell his surplus at once, but only when he has to meet demands like meeting educational expenses, or ceremonial expenses on behalf of his family. The fear that the farmers would be discouraged if these services are not available to him promptly are also unfounded. In certain WetZone districts (Galle, Matara, Kalutara) the "buildup" of farmers wanting their paddy dried is a possibility, but here the amount of the marketable surplus which he offers to the PMB will be small. In other areas farmers will sun-dry the paddy as is being done presently and complaints of such magnitude so as to prevent the proper procurement of paddy by the PMB may not arise.

Higher farm incomes and standards of living from the larger margins of surplus paddy for sale will far outweigh the mild inconveniences the farmers would be called upon to bear initially.

The licensed quota rice miller will now have an assurance from the PMB that he will get cleaned well-dried paddy under the quota system. Up to now one of the complaints against the PMB by the millers has been the very poor quality of the paddy that is being issued to them on the quota system. The quality of the rice the miller will eventually supply is dependent directly on the quality of the paddy he is asked to mill. The PMB will not only buy clean and dried paddy, but it will store such paddy in modern well-equipped go-downs (warehouses).

The private commercial rice miller too, will benefit because the quality of paddy available for milling outside the PMB's go-downs would also be better.

The higher yields of rice from paddy due to better drying and the associated reduction of storage losses would be beneficial to all millers in general.

The introduction of a new technology related to milling--use of rubber rolls, new techniques of parboiling paddy, modern improved rice milling machinery--together with a regular program of training to upgrade skill in a rice milling industry would make this important sector in the rice processing industry a worthwhile and profitable enterprise in the future. Rice processing in Sri Lanka is over 2,500 years old, but it remains traditional and antiquated because it was never treated as an important industry and for the same reason paddy, which is its essential raw

material, was taken for granted as being available, but no conscious efforts were made on the part of authorities to improve its conditions. The rice miller will now emerge as an entrepreneur, in the modern sense of the word with an important national role to play in the country's economy.

The employment opportunities which would be available by re-enlivening this industry, particularly in rural areas will be considerable.

3. The setting up of new rice mills or the improvement of existing mills both in the Government and private sector, will automatically create a demand for the production of spare parts and ancillaries, such as the manufacture of bucket elevators, belt conveyors, batch-type dryers, polishers, parboiling tanks, cyclones, rubber rolls, geared motors, etc. At the moment only a few firms are engaged in the manufacture of these items. Many local engineering firms could engage themselves in the manufacture of rice milling machinery thereby generating more employment. Apart from the training the project will give to local engineers, it could also promote the undertaking of research work as is being done by the PMB at the Rice Processing Development Center, even by private firms. The adoption of designs and the fabrication of machinery more suitable to local conditions could also be expanded. A new manufacturing industry in Sri Lanka for rice processing machinery would be beneficial to the entire country.

4. The "consumer" who is again, the entire community, will benefit from these measures because he will be assured of obtaining a decent quality rice on the Ration. The ultimate verdict of all these attempts at improving and modernizing the rice industry is decided in the kitchen. If the quality of the rice which is cooked and served in the home, canteen, hotel or hostel is good, the PMB would have delivered the goods to the satisfaction of the masses. If poor quality rice, bad odour rice, or unpalatable rice continues to be issued on the Ration, the people would be very critical of the PMB as a marketing organization which could even have political repercussions. It is not unknown that poor quality rice served as meals in canteens run for dockyard workers in large Corporations have even generated labor unrest in the form of strikes.

The average household dependent on the weekly ration will save the trouble and cost of having to repolish the rice as is being done at present. The satisfaction that the Government has not robbed him of his monies' worth by giving poor quality substandard rice will remove much of the strain between the consumer and the Government during a period when the cost of living is increasing rapidly. The consumer will welcome

any improvement however small which gives him some form of immediate relief.

While these categories would directly benefit from these improvements, the political benefits of a prosperous and stable farming economy cannot be ignored. Higher farm incomes and standards of living from the large margins of surplus paddy and rice available for sale, higher yields of rice from paddy due to adoption of improved practices of storage and drying would improve the living conditions of farmers who form the backbone of the economy. The political destiny of many a political party in the GSL has been decided on the extent to which the welfare of the farmer has been influenced by their policies. This is a fact borne by experience and the successful implementation of the measures outlined by this proposal could have a far reaching impact on the future of the country.

D. Economic Analysis

The quantifiable economic benefits of the project will primarily result from investments in new mills and storage facilities which will result in an additional quantity of rice available from any level of paddy production. A sizable financial return will result from implementation of the paddy procurement program when PMB reduces its payments for false weight due to excess moisture and impurities. An additional operating expense for this portion of the project of approximately one million dollars equivalent per year will result in a saving of 4.7 million dollars equivalent in the fourth year of the project. Greater savings are indicated in subsequent years with less savings in the first three years of the project. While quantifiable economic benefits were not discerned from this portion of the project it will result in a resource transfer of approximately four million dollars equivalent from unjustified payments siphoned off in the procurement system, to the general government account for other uses.

An internal economic rate of return was calculated for all project costs over a 13-year period, excluding 20% of technical assistance costs, and financing directed to the private sector, and all economic benefits except those arising from private sector investments, and was found to be 15%. When the rate of return was calculated solely for costs associated with new storage and mills and 50% of technical assistance from which directly flow the economic benefits, an economic IRR of 41% was indicated. These benefits are not dependent on increased production since new PMB mills and storage would have first call on paddy procured. No calculation was made for investments in the private sector but since inputs and outputs are of the same kind similar magnitudes of return are indicated.

Additional unquantified economic benefits will accrue from increased employment in procurement and milling and in the domestic

manufacturing industry. Other benefits will be derived from a spread effect of the availability of better equipment for all millers. In particular benefits to the economy should be derived from evidence that the GSL recognizes a substantial current and future role for private sector milling in Sri Lanka.

The project elements individually and as a whole are economically sound. The rates of return indicated above very probably understate the overall economic benefits.

PART 4. IMPLEMENTATION ARRANGEMENTS AND PLAN

A. Administrative Arrangements

1. Borrower

The Paddy Marketing Board through its more than 1,600 employees currently organized as noted in Annex 2, TA-12, will be the implementation agency for the project. The Board has had considerable successful experience over the past five years in carrying out activities similar to those planned under the project and is blessed with management willing to foresee, explore and solve problems which have arisen in the past and might arise in the future. The frankness which has characterized the entire period of project development coupled with successful experience in similar endeavors leads us to conclude that PMB is capable of implementing the project and likely to do so successfully.

In order to handle expanded activities which implementation will entail PMB recognizes the need to make organizational changes during project life which will result in that found in Annex TA-13. The major changes planned are:

- a. Technical Development Section will incorporate present Chief Mechanical Engineer and Chief Civil Engineer and their respective sections.
- b. The Division for Field Operations will be expanded to include a Crop Purchasing Manager, Crop Marketing Manager and a person for inventory control.
- c. The Section for PMB rice mill operation will be separate from the Division on Technical Development.
- d. The Analysis and Division will be strengthened to include Economic Analysis, Financial Analysis, and also the Statistician.
- e. Director of Research and Training will replace the Manager of the Rice Processing Development Center.

Recent organizational changes which have been made in anticipation of expanded activity have been:

- a. Four (4) Zonal Managers are responsible for the PMB rice mill operations (as suggested in the MASI report as Area Managers).
- b. Addition of eight storage superintendents for PMB store supervision.
- c. Addition of eight building supervisors for the supervision of construction projects (these are identified as Assistant Engineers in the MASI Report).
- d. Manager for Private Miller Development (to be added in late 1976).

In carrying out the paddy purchase/procurement phase of the project, PMB will interact primarily with two major organizations selected by PMB to procure paddy, the Agricultural Productivity Committees (APC) and the Multi-Purpose Cooperative Societies. Both organizations (which are described in Annex 1) procure paddy from farmers at a total of 3,481 locations, pay the farmer and sell the paddy to PMB. (See Annex 1 for detailed description of procurement system.) PMB will provide these centers with moisture meters and paddy cleaners so that payment can be made on a sound basis. A pilot project already planned will determine whether PMB will retain control of the equipment or whether the centers will buy the items from PMB over time or through loans by the Peoples Bank. This pilot project will also help to determine the amount of the additional commission PMB will pay the centers for the additional work entailed in using the equipment. Training in the use and maintenance of the equipment will be partially at the centers and partially at the PMB Training Center depending on the results of the pilot project.

While the details of specific arrangements regarding implementation of this phase of the project await evaluation of the pilot project, the experience of these already existing organizations and their current working relationship with PMB leads us to conclude that there will not be any unusual problems in working out a satisfactory arrangement. PMB, with some assistance from the technical contractor, is capable of evaluating the pilot project.

PMB's Central Tender Board has in the past and will under the project contract locally for construction of mill and storage buildings and advertise internationally according to PMB and AID regulations for imported equipment. PMB's staff has the skill and experience to develop technical standards for construction and specifications for equipment. PMB has successfully monitored construction in the past and has had occasion to turn down poor quality work and require reconstruction. The

recent addition of eight engineers will enable PMB to continue to monitor expanded construction under the project.

The Mill Operations Division will undertake most of the technical development of the Milling segment as well as the management of Board Mills. The engineering, construction and manufacturing functions and the operation of PMB mills will be done in this section. A Chief Mechanical Engineer will be in charge of this section with several Assistant Engineers in charge of the development of designs, construction of mills, supervision of local manufacture of milling machinery for the PMB and so on.

PMB's Management Development Division will train storage, mill, and maintenance personnel and private millers at their existing Rice Processing Development Center which has full facilities for training 40 people at a time. PMB has carried out training courses in the past for 12 Regional Managers, 200 Stores Officers, 80 Administrative Officers, 50 Technical Assistants, 11 Engineers, and 18 Private Millers at a temporary facility. A training manual has been prepared and used and a copy is available in ASIA/PD. Table 9 presents the training schedule for 1976-1977. Training schedules for the life of the project are being prepared.

Arrangements for implementing assistance to the private sector will depend on the implementation plan to be prepared.

TABLE 9

PMB TRAINING PROGRAM 1976/77

Rice Processing Development Center, Anuradhapura

	No.	Duration of Course	Course Begins Week/Month	Course Ends Week/Month
Complex Managers	8	2 wks.	1/June	3/June
Shift Supervisors (T.A.)	24	3 wks.	1/June	4/June
Receiving Supervisors	8	3 wks.	4/June	3/July
Mill Operators	24	2 wks.	4/June	2/July
Parboil Operators	12	2 wks.	2/July	4/July
Dryer Operators	12	2 wks.	2/July	4/July
Boiler Operators	12	2 wks.	2/July	4/July
Parboil Operators	12	2 wks.	1/Aug	3/Aug
Dryer Operators	12	2 wks.	1/Aug	3/Aug
Boiler Operators	12	2 wks.	1/Aug	3/Aug
Administrative Officers	41	3 wks.	4/Aug	3/Sept.
" "	41	3 wks.	4/Sept	3/Oct
Managers and Asst. Managers	33	2 wks.	4/Oct	1/Nov
PMB Office Staff	350	1 wk.	2/Nov	3/Jan
Administrative Officers & Engineers (new recruits)	25	2 wks.	4/Jan	2/Feb
Private Millers' Seminars	400	2 days	3/Feb	1/Apr

2. AID

While the project is fairly straightforward, (essentially civil works and construction of mill and storage buildings, importation of equipment, and a technical assistance component, all handled by one organization, the Paddy Marketing Board and does not require AID to play an unusual role, prudence indicates that project monitoring and processing of loan and project related documents will require the attention of AID staff in Colombo. Depending on the problems that may arise during project implementation and the need for field monitoring in addition to review of reports by the implementing agency, this role could require from 15 - 30% of the time of one direct-hire staff. This role cannot be adequately filled by the currently allotted U.S. DH staff of an AID Representative, an Assistant AID Representative, and an Executive Assistant. This judgment is supported by the fact that development of this project alone from the original idea to completion of project paper required three months of DH TDY assistance in addition to the efforts at post of two officers, and that even this assistance would not have been sufficient had it not been for the presence of a fully informed and energetic Ford Foundation Advisor to the implementing agency.

No recommendation is made on the specific category of the additional DH staff required since this will depend to some extent on the requirements of other projects to be funded in FY 1976 and developed and funded in FY 1977 and FY 1978.

The implementing agency has considerable experience monitoring construction activity of the type planned for the project and as part of the project has increased their engineering capability to do this. This area, along with others, will fall under AID's general monitoring role.

The PMB has requested AID assistance in evaluating proposals that will be submitted for the technical assistance contract and in negotiating and drawing up a suitable contract. Depending on Mission staffing at the time, AID/Colombo may be able to assist in evaluating proposals but contract negotiation and drafting will require assistance in Washington or Sri Lanka for 2 - 3 weeks in early fall 1976.

The need for any waivers or unusual AID approval is not anticipated.

AID disbursements for foreign exchange will be handled by normal Letter of Commitment/Letter of Credit procedures. The method of disbursements for assistance to private millers will depend on the implementation plan to be presented by PMB.

PMB/AID Development Program

TIMETABLE FOR PROJECT IMPLEMENTATION

A. LOAN IMPLEMENTATION

<u>Action</u>	<u>Date</u>
- Project Paper Prepared	5/76
- PP review and approval	6/76
- AID loan authorization	6/76
- PMB request proposals for T.A.	8/76
- GSL/AID loan agreement signing	9/76
- Implementation Plan for private millers assistance presented for AID consideration	10/76
- PMB/AID evaluate proposals	10/76
- Negotiate contractor for T.A.	11/76
- Contract for T.A. signed	11/76
- Local currency secured	12/76
- Conditions Precedent to initial disbursement satisfied	12/76
- Project Coordinator on site	1/77
- PMB/Contractor provide office, housing, etc.	1/77
- Program I, II, III begins (see attachment)	1/77
- PMB Training programs for all technical staff continues as part of ongoing program	1/77
- 1st year evaluation of program	9/77
- In Depth evaluation occurs	9/78
- Final evaluation occurs	12/80
- T.A. Coordinator departs	12/80
- Final Disbursements, Project terminates	3/81

B. Paddy Purchase:

Plan Date¹

A. Pilot Project

- | | |
|----------------------------------|--------------|
| 1. Designs & Specifications | 7/76 |
| 2. Selection Area | 8/76 |
| 3. Advertise & Award contract | 9/76 |
| 4. Implement project | 2/77 - 10/77 |
| 5. Evaluate pilot project | 11/77 |
| 6. Finalize 3 year major program | 12/77 |

B. Phase I (1978)

- | | |
|--------------------------------|-------|
| 1. Designs & Specifications | 12/77 |
| 2. Advertise | 2/78 |
| 3. Award Tenders & open L.C. | 4/78 |
| 4. Begin manufacturing | 4/78 |
| 5. Recruit and train operators | 9/78 |
| 6. Begin operation | 1/79 |

C. Phase II (1979)

- | | |
|--------------------------------|---------------|
| 1. Designs and Specifications | 1/79 |
| 2. Advertise | 2/79 |
| 3. Award Tenders and open L.C. | 4/79 |
| 4. Begin manufacturing | 4/79 |
| 5. Recruit and train operators | 9/79 |
| 6. Installation of equipment | 11/79 - 12/79 |
| 7. Begin Operations | 1/80 |

D. Phase III (1980)

- | | |
|--------------------------------|---------------|
| 1. Designs & Specifications | 1/80 |
| 2. Advertise | 2/80 |
| 3. Award Tenders and Open L.C. | 4/80 |
| 4. Begin Manufacturing | 4/80 |
| 5. Recruit and train operators | 9/80 |
| 6. Install equipment | 11/80 - 12/80 |
| 7. Begin operations | 12/80 |

¹Action by 1st of month unless otherwise indicated.

C. Storage Construction:

Plan Date

- A. Phase 1 (1/1/77 through 31/12/78)
 - 1. Design & specifications (finalize) 1/77
 - 2. Selection of sites 1/77
 - 3. Advertising 2/77
 - 4. Award contracts & open L.C. 5/77
 - 5. Construction and manufacturing period 7/77-7/78
 - 6. Erection Equipment 7/78-10/78
 - 7. Recruiting & training staff 10/78
 - 8. Commissioning and trial operations 11/78
 - 9. Begin Operations 1/79

- B. Phase 2 (1 Jan 1978 through 31 Dec 1979)
 - 1. Designs and specifications (review) 1/78
 - 2. Selection of Sites 1/78
 - 3. Advertising 2/78
 - 4. Award Contracts & opening L.C. 5/78
 - 5. Construction and manufacturing 7/78-7/79
 - 6. Erection equipment 7/79-10/79
 - 7. Recruiting and training staff 10/79
 - 8. Commissioning and trial operation 11/79
 - 9. Begin Operations 11/79

- C. Phase 3 (1 Jan 79 through 31 Dec 1980)
 - 1. Design and specifications (review) 1/79
 - 2. Selection of sites 1/79
 - 3. Advertising 2/79
 - 4. Award contracts and opening L.C. 5/79
 - 5. Construction and manufacturing 7/79-7/80
 - 6. Erection equipment 7/80-10/80
 - 7. Recruiting and training staff 10/80
 - 8. Commissioning and trial operation 11/80
 - 9. Begin Operations 11/80

D. PMB Rice Mills

Plan Date

A. Phase I (1977)

- | | |
|---|-------|
| 1. Designs and specifications (finalize) | 1/77 |
| 2. Advertise buildings and equipment | 2/77 |
| 3. Award contracts buildings | 3/77 |
| 4. Award contracts equipments and open L.C. | 4/77 |
| 5. Complete manufacturing | 9/77 |
| 6. Recruit and train operators | 9/77 |
| 7. Complete construction | 10/77 |
| 8. Install equipment and commission | 11/77 |
| 9. Begin operations | 12/77 |

B. Phase II (1978)

- | | |
|--|-------|
| 1. Designs and specifications (update) | 1/78 |
| 2. Advertise buildings and equipment | 2/78 |
| 3. Award contracts buildings | 3/78 |
| 4. Award contracts equipment and open L.C. | 4/78 |
| 5. Complete manufacturing | 9/78 |
| 6. Recruit and train operators | 9/78 |
| 7. Complete construction | 10/78 |
| 8. Install equipment and commission | 11/78 |
| 9. Begin operations | 12/78 |

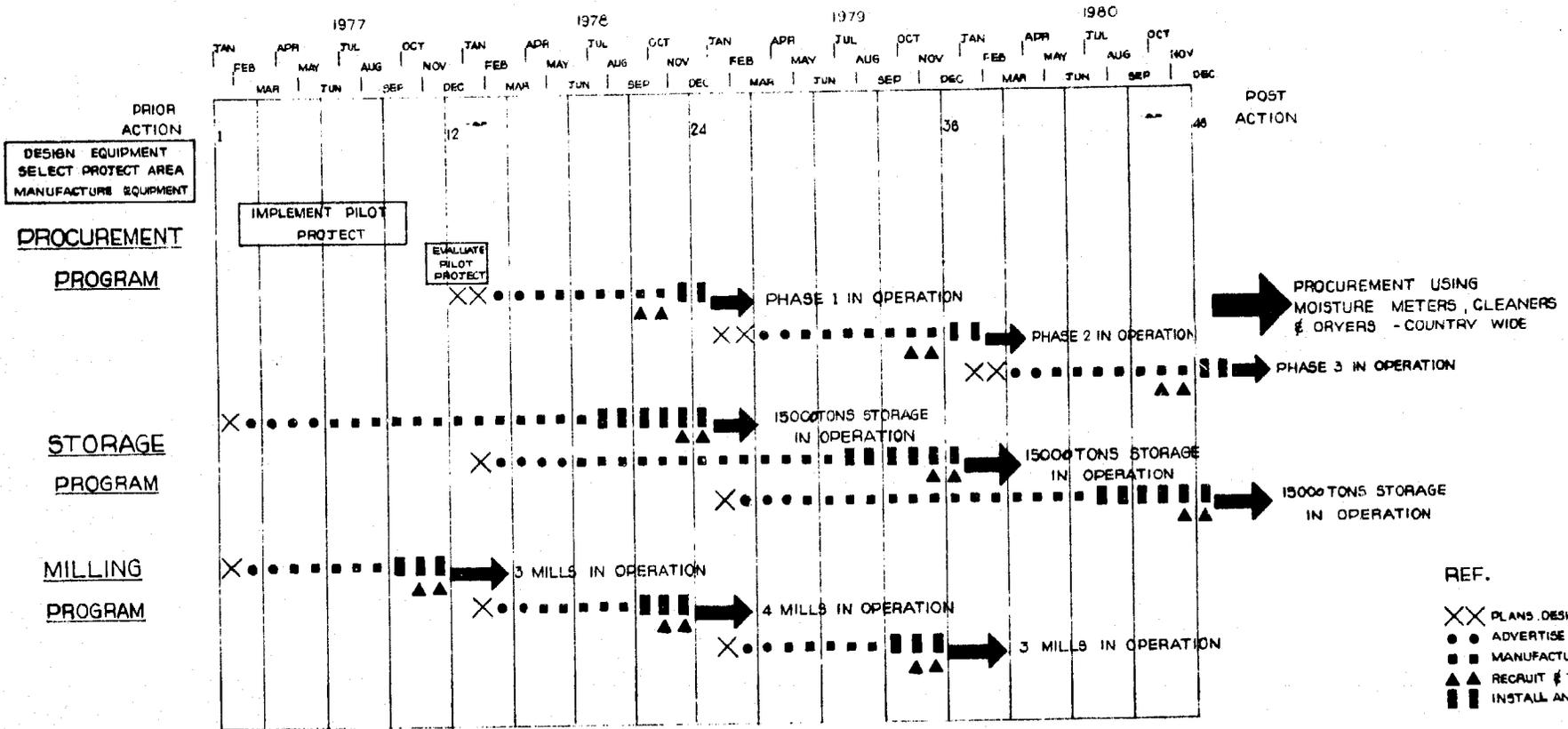
C. Phase III (1979)

- | | |
|--|-------|
| 1. Designs and specifications (update) | 1/79 |
| 2. Advertise buildings and equipment | 2/79 |
| 3. Award contracts buildings | 3/79 |
| 4. Award contracts equipment and open L.C. | 4/79 |
| 5. Complete manufacturing | 9/79 |
| 6. Recruit and train operators | 9/79 |
| 7. Complete construction | 10/79 |
| 8. Install equipment and commission | 11/79 |
| 9. Begin operations | 12/79 |

PMB/AID Development Program - Implementation Plan

Programs	1977	1978	1979	1980
PADDY PURCHASING	Operation of Pilot Project	500 Paddy Cleaners 3071 Moisture Meters 300 Dryers	1200 Paddy Cleaners 300 Dryers	1781 Paddy Cleaners 304 Dryers
PADDY STORAGE	15,000 tons	15,000 tons	10,000 tons	
PMB RICE MILLS	3 units	4 units	3 units	
PRIVATE MILLER ASSISTANCE		(full 4 year program)		
TRAINING		(3 year program)		
TECHNICAL ASSISTANCE		(4 year program)		

PROJECT PROGRAM SCHEDULE



C. Reporting and Evaluation Arrangements

1. Reports

A. PMB's assessments of progress in loan implementation will be reflected in quarterly reports to AID/Colombo beginning three months after the date the loan agreement is signed. Initially, these reports are expected to deal with efforts to contract for technical assistance, equipment and rupee funded civil works. As the project develops these reports will concentrate increasingly on progress toward achieving end of project conditions identifying currently known and foreseeable problems which might impede progress toward achieving these conditions. The PMB Project Manager will be responsible for preparing these reports.

B. As part of this on-going assessment the technical assistance contractor will submit to PMB bi-monthly reports beginning two months after the contractor's project coordinator arrives in country, of progress and problems within the area of contractor responsibility.

Every six months the contractor will prepare a summary report of progress to date and proposals for future efforts. These reports will be made available by PMB to AID.

2. Evaluations

A. Each year beginning one year after the signing of the loan agreement, PMB will prepare a summary of project progress to date which will serve as the basis for a joint U.S. - PMB - GSL evaluation to include visits to project sites and an evaluation meeting at PMB offices.

These regular yearly evaluations will review (a) progress toward achieving project outputs identified in the logical framework according to the schedule shown in the implementation plan; (B) progress toward achieving the end-of-project conditions identified in the log frame; and (C) problems which may have arisen during implementation, as well as any additional topic requested by PMB or AID. These evaluations will result in a summary report prepared by PMB and AID, identifying major findings of the evaluation, and including any recommendations for actions in the future which may have been found necessary.

Although project activity may determine otherwise, it does not appear that the assistance of TDY or outside consultants beyond those funded in the technical assistance contract will be required.

B. Two years after signing of the loan agreement a major periodic evaluation of the project will be held. Participating in this evaluation will be not only representatives of PMB and AID but representatives of the Food Commission, private millers, the procurement centers, farmers' groups, and the Ministry of Agriculture. The purpose of this evaluation will be to determine not only statistical progress toward end of project conditions but also whether a) the project continues to contribute toward the goal of self-sufficiency in food production ; b) assumptions remain valid; c) the implementation of the program for private millers is in fact assisting them in modernizing; d) the procurement program is accepted by farmers and what effect it has on them; e) the procurement price should be modified; f) the milling hire rate should be modified; g) any additional topic requested by the participants.

This evaluation will assist in determining whether the project as set forth in this paper should be modified in the light of new conditions. It will result in a report prepared by PMB and AID which will note major findings of the evaluation and recommendations for future actions.

A similar evaluation will take place within three months of project termination to judge whether project purpose has been achieved and to provide PMB with recommendations on possible future activities. Both these evaluations may require TDY or consultant assistance.

C. During, and following completion of, the pilot project for the installation of moisture meters and cleaners at procurement centers and dryers at PMB stores, PMB and their technical consultants will evaluate the findings of the pilot project to determine how best to proceed with implementation of this phase of the project.

3. Need for Additional Data

Excellent data exists on the facilities and activities currently carried out under PMB auspices but considerably less is known about the true capability and operations of private millers, beyond data in the MASI report.

The number and capacity of private millers was learned by tallying licensing applications which were submitted in 1972. Since that time economic and financial difficulties may well have changed the numbers in this group. Their milling capacity was not verified and beyond the fact that observation has shown some mills are well operated, some are poorly operated and privately milled rice is poorly milled, little is known.

Data on quota millers (private millers who mill for PMB) is somewhat better, but again has never been fully tested and the poor harvests of 1973-1975 coupled with economic uncertainties of the past few years has had an effect on this group.

Little is known of the condition of unlicensed village millers beyond the small individual size of their business and the basic nature of their equipment.

It is the intention of PMB to gather and verify data on quota and licensed millers by surveys and meetings with milling groups in preparing the implementation plan which will identify a program of assistance to private millers. PMB's ability to collect and evaluate data dealing with their own activities is evidence they will be able to adequately prepare data on private millers.

D. Conditions, Covenants and Negotiating Status

1. Conditions Precedent to Initial Disbursement:

Prior to the first disbursement or to the issuance of the first Letter of Commitment under the Loan, the Government shall, except as A.I.D. may otherwise agree in writing, furnish to A.I.D. in form and substance satisfactory to A.I.D.

A. An opinion of the Attorney General of Sri Lanka or other counsel acceptable to A.I.D. that the Loan Agreement has been duly authorized or ratified by and executed on behalf of the Government of Sri Lanka and that it constitutes a valid and legally binding obligation of the Government:

B. Evidence of the authority of the person or persons who will act as the representative of the Government of Sri Lanka concerning actions to be taken under the loan and a specimen signature of each such person certified as to its authenticity by either the person rendering the legal opinion under D.I.A. above, or the person who has signed the Loan Agreement for the Government:

C. An implementation plan for the use of the funds designated for assistance to the private milling sector which will include: identification of the institution responsible for administering the credit to private millers: the experience and capability of this institution: financial terms of the credit, eligibility criteria and selection procedures: an analysis of a detailed demand survey: a discussion of the micro-economics for average millers including a financial analysis and implications for the milling hire rate: and estimates of the average loan size required as well as the maximum loan amount.

D. A signed contract for the technical services to be performed:

E. Evidence of the availability for use in the project of local currency sufficient for a minimum of one year's anticipated expenditures for local costs;

F. Evidence of the appointment of a Project Manager with adequate authority to exercise effective responsibility for day-to-day project operations.

2. Special Covenants

In addition to the standard loan agreement covenants the Loan Agreement will contain the following:

A. The borrower is aware of the significant role played by private sector millers in the processing of rice in Sri Lanka and will diligently endeavor to carry out the program of assistance to this

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sector according to the implementation plan to be developed; and the Borrower agrees that it does not have the intention to concentrate rice processing in the public sector nor will it promulgate policies designed to do so.

B. Should operating revenues of the Paddy Marketing Board be insufficient to provide the local currency budgeted for the project from this source, the Borrower agrees to provide necessary additional funding in the capital budget as well as any additional local cost funding which may be necessary to complete the project.

C. The Borrower covenants to conduct a performance evaluation on a yearly basis beginning one year after the signing of the Loan Agreement until project completion, together with AID, to review

a) progress toward achieving project outputs as scheduled; b) progress toward achieving end of project conditions; c) problems arising during implementation; d) any additional topic requested by PMB or AID. The Borrower undertakes to carry out any recommendations arising from this review.

D. The Borrower covenants to conduct an evaluation approximately two years after the signing of the Loan Agreement as well as approximately three months prior to the terminal disbursement date of the loan which will include representatives of AID, PMB, the Ministry of Agriculture, the Food Commission, private millers, farmers' groups, and procurement centers which will determine whether a) the project continues to contribute toward the goal of increasing self-sufficiency in food production; b) assumptions remain valid; c) the implementation of the program for private millers is in fact assisting them in modernizing; d) the procurement program is accepted by farmers and what effect it has on them; e) the procurement price should be modified; f) the milling hire rate should be modified; g) any additional topic requested by the participants.

The Borrower undertakes to carry out recommendations arising from such evaluations.

3. Terminal Dates for Conditions Precedent, Disbursing Authorizations and Disbursements

A. Conditions precedent to initial disbursement will be met within 120 days of signing of the Loan Agreement.

B. The terminal date for requests for new disbursement authorizations under the loan will be four years from the signing of the Loan Agreement.

C. The terminal date for disbursements under the loan will be four and one-half years from the signing of the Loan Agreement

4. Status of Negotiations

The above conditions precedent, and dates and covenants (A) and

(B) have been discussed with and agreed to both by the Paddy Marketing Board and the External Resources Division of Government of Sri Lanka. No problems are anticipated in meeting the conditions precedent in the time indicated or in completing the project within the time frame of the Loan.

ANNEX 1
BACKGROUND

Changes in the Rice Ration System

- 1966 - December - Ration reduced to one measure per person per week.
1970 - September - Ration restored to two measures per person per week.

Changes in price and quantum of rice issued on the ration - 1973

- (a) Rice: The price of the additional measure issued on the ration was increased from Rs.1.00 to Rs.1.60 with effect from 19th February 1973, but was subsequently reduced to Rs.1.40 with effect from 12th March 1973.
- (iii) Measures relating to the food subsidy and wage increases adopted on 1st October, 1973.
- (a) Rice: The quantum of free rice issued weekly to non-income tax payers was reduced from one measure to half measure per individual. Income tax payers will be entitled to purchase half-measure of rice at a price of Rs.1./-.

Changes in the price and quantum issued under the ration in respect
of rice - 1974

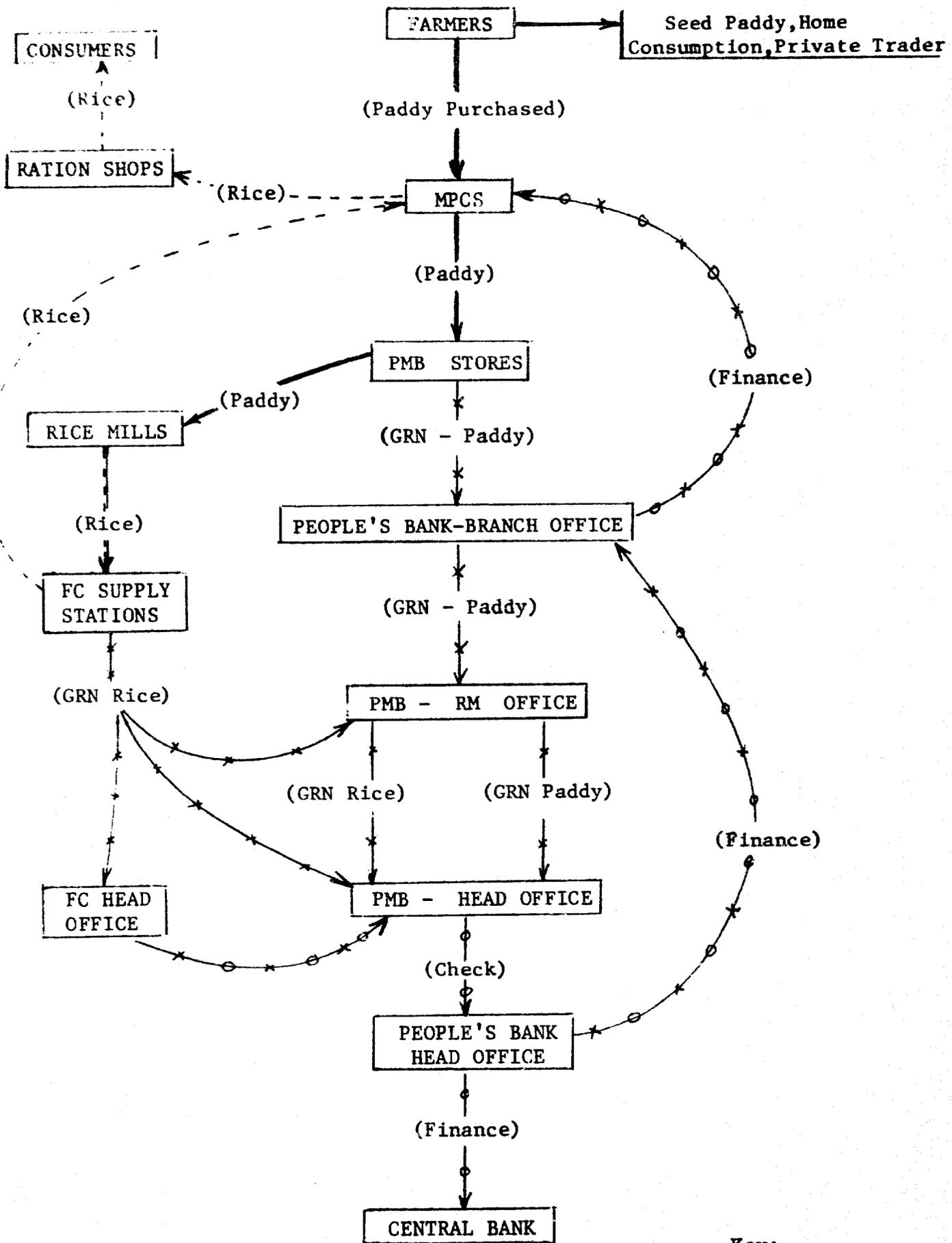
1.1 Rice

- 1.1.1 With effect from 1st January 1974, the issue of an additional $\frac{1}{2}$ measure of rice to every ration book holder, which hitherto was confined to only the 'deficit' areas and estate sector was extended to cover the whole island initially for a period of one month. With effect from 18th February, the residents of Colombo and certain suburbs where rice is not grown were issued with this $\frac{1}{2}$ measure at a price of Rs.2/- per measure.
- 1.1.2 In lieu of the pound of wheat flour hitherto issued per ration book, an extra $\frac{1}{2}$ measure of rice was issued with effect from March 18th 1974. Accordingly, the total issue of rice per ration book, per week, in Colombo and certain suburbs was $1\frac{1}{2}$ measures and in the rest of the island 1 measure.
- 1.1.3. Three changes in the rice ration were made in April 1974.
- (a) The provision of the additional $\frac{1}{2}$ measure of rice confined to Colombo and suburbs was extended to cover the whole island. Accordingly, every ration book holder received $1\frac{1}{2}$ measures of rice per week, from the beginning of the month.
- (b) With effect from 29th April, the issue of the additional $\frac{1}{2}$ measure was withdrawn. While income tax payers continued to pay for the whole measure, the rest got $\frac{1}{2}$ measure free.
- (c) The price of the 'anaid' measure was raised from Rs.2.00 to Rs.2.30 with effect from 15th April 1974.
- 1.1.4. The quantum of rice issued on ration was increased on a selective basis with effect from 6th May. All ration book holders in 21 selected areas* were given $1\frac{1}{2}$ measures per week while in the rest of the island the issue was only 1 measure.
- 1.1.5. With effect from 15th July, the price of rice on ration other than the free half-measure was increased from Rs.2.30 to Rs.2.50 per measure. (Rs.1.25 per lb.)

1.1.6. Further changes were effected on 5th August 1974. Accordingly, the price of ration rice was reduced to Rs.2.20 per measure (Rs.1.10 per lb.) While ration book holders in Colombo and specified areas as well as urban areas in deficit districts** received 1½ measures of rice per week, only 1 measure of rice was issued in the rest of the country. This continued to be the arrangement till the end of the year.

*These areas were: Colombo Municipal Council, Dehiwela-Mt. Lavinia M.C. Moratuwa, Kolonnawa, Kotte, Peliyagoda, Ja-ela, Wattala-Mabola and Panadura Urban Councils, Battaramulla, Dalugama, Hendala, Kelaniya, Piliyandala, Mulleriyawa, Kotikawatte, Welisara, Maharagama, Kandana Pamunugama and Koswatte Town Councils.

**The deficit districts are: Colombo, Kalutara, Kandy, Galle, Matara, Ratnapura, Kegalle, Badulla, Puttalam, Jaffna, Kurunegala, Matale and Nuwara-Eliya.



Key:
 ———→ Paddy
 - - - - -→ Rice
 ○—○—○→ Money

GSL PADDY-RICE FLOW DIAGRAM

The mechanism of Paddy/rice procurement, storage and processing is illustrated in the accompanying flow diagram. PMB works through the following organizations.

a) The Multipurpose Co-operative Societies (MPCS) and their branches. There are authorized agents of PMB for the purchase of grain and are also the distribution outlets for rationed rice and other essential foodstuffs.

b) Private rice millers who mill paddy with rice for the PMB on contract.

c) The Food Commissioner who keeps the rice for the ration from PMB and distributes it to consumers through the MPCSs.

d) The People's Bank who finance Paddy Purchases by advancing money to MPCSs for paddy purchases, and discount the PMB's goods received notes (GRN) to cover these advances. The People's Bank is financed by the Central Bank for this operation.

Movement of Paddy - Branches of the MPCS are the purchasing centers and purchase paddy from farmers. This paddy is usually a surplus left after the needs of seed paddy and farmers' family consumption needs are met. Farmers may sell some paddy in the private open market. The MPCS or its branch would deliver this paddy to a PMB store and obtain a GRN which they present to the People's Bank towards amortization of the loan obtained for paddy purchasing.

Paddy is issued by a PMB store to millers on a delivery order from the Regional Office of the PMB.

Movement of Rice - The rice miller, on milling his quota delivers the rice to the food commissioner's supply station on a delivery order (DO) from the PMB Regional Office. The supply station issues the ration requirements for each week to the MPCSs it serves. The MPCS then supplies rations to the consumers through their branches.

Documentation:

The chief document in both paddy and rice movement is the goods received note (GRN) which is issued a) by the PMB for paddy received from MPCSSs and b) by the Food Commissioner's supply station for rice received from millers. Copies of GRNs are sent to both PMB regional office and head office. GRNs for paddy have copies marked to the People's Bank branch as well. In this way cross checking is possible. The issue of paddy to millers and the delivery of rice by millers to the FC are done on delivery orders sent by the PMB regional office.

Financing - The People's Bank, through its branches, provide loans to MPCSSs for the purchase of grain (marketing loans). MPCSSs repay this loan by discounting GRNs issued by the PMB. The People's Bank obtain finance for this operation from the Central Bank. PMB pays the MPCSS a commission of Rs.1.00 per 100 lbs. of paddy purchased and re-imburses the MPCSS its transport expenditure on a specified scale of charges.

Rice millers obtain paddy quotas from the PMB on the security of a Bank Guarantee for the value of paddy. They mill this paddy and obtain their milling hire and reimbursement of transport and gunny bag cost by presenting the GRN issued by the F.C. to the PMB regional office. The miller is also permitted to keep the bran, husk and other by-products of milling.

The PMB head office obtains copies of all documents and bills from the Food Commissioner on the basis of these documents for rice supplied at the specified transfer price.

Several cross checks are provided in the system, both intra-departmentally and between PMB, Food Commissioner and the People's Bank.

TABLE 10

Sri Lanka: Subsidies on Rice, Wheat Flour, and Sugar as a Percentage of Total Income Per Spending Unit for Different Income Groups, 1973.

Income Group (Rs. per two mo.)	Average Income Without Subsidies (Rs. cts.)	RISE Subsidy on Free Measure	WHEAT FLOUR Subsidy	SUGAR Subsidy on Ration	Total Subsidy ^{a/}	Total Taxes Incurred ^{b/}	Average Income With Subsidies	Subsidies as a Percentage of Total Income
0-50	30.34	3.52	1.00	1.71	6.23	1.13	36.57	17.1
51-100	74.15	9.36	1.69	3.07	14.12	0.47	88.27	16.0
101-200	144.84	12.78	3.41	3.51	20.70	0.94	164.94	12.6
201-400	278.94	28.55	8.73	6.84	44.12	2.27	323.06	13.6
401-800	521.41	39.94	12.10	9.89	61.93	3.38	583.35	10.6
801-1600	1006.04	43.81	10.76	12.12	66.69	4.91	1072.73	6.2
1601+	2462.00	22.85	9.45	9.30	42.46	6.26	2582.60	1.9
Average	583.53	35.00	10.24	8.91	54.19	3.27	637.68	8.5

Source -- Central Bank of Ceylon, 1973 Survey of Consumer Finances.

^{a/} Household income is strongly related to family size in Sri Lanka. Hence, the increase in the total subsidy as income increases reflects a greater number of family members (including servants) drawing the ration, and not greater per capita benefits.

^{b/} Includes taxes on the second weekly measure of rice and off-ration sugar purchases.

THE ROLE OF THE CULTIVATION COMMITTEES, AGRICULTURAL PRODUCTIVITY COMMITTEES, AND THE MULTI-PURPOSE COOPERATIVE SOCIETIES

In the Government of Sri Lanka (G.S.L.), the Cultivation Committees (C.C.C.) and the Agricultural Productivity Committees (A.P.C.C.) are Statutory village level organizations, whose membership is confined to actual farmers engaged in the cultivation of both paddy and high-land crops. The Cultivation Committees were at first elected and were crucial to the implementation of the Paddy Lands Act of 1958, whereby the tenancy rights of the farmers were secured by preventing the unlawful eviction of tenant cultivators by the more powerful landlords. The C.C.C. were also empowered with the supervision and maintenance of minor irrigation works within their areas of operation, the collection of water rates and giving assistance to the authorities to maintain the proper and orderly cultivation of paddy by preventing the spread of pest attacks on crops and to help the implementation of measures, which were advocated by the Ministry of Agriculture & Lands in order to encourage farmers to increase production. They were also given limited powers of jurisdiction through the Board of Review, which entertained farmers' complaints regarding unlawful evictions and other agricultural malpractices and to bring such cases to the notice of the Commissioner of Agrarian Services (C.A.S.). The C.C.C. were under the authority and control of the C.A.S.

After almost 15 years of operation, the scope of C.C.C. their powers and functions, etc., were revised with the new Agricultural Laws which came into operation from 1970. The present role of the C.C.C. has been re-defined in the Agricultural Lands Law Act which created another policy formulating a committee for agricultural purposes called the Agricultural Productivity Committee. The A.P.C. has more powers than the C.C.C. It covers an area more or less the same size as a local government unit, such as Village Council or Town Council, but could vary according to the size of the area and population. At present, there are 480 A.P.C.C. The Members of the A.P.C. (10 in No.) are nominated by the Minister of Agriculture and Lands and are directly responsible to him and are not under any Government department. The criteria of selection of Members to an A.P.C. is efficiency, ability and acquaintance with agriculture and the qualities of leadership one has in the rural communities. The Committee is entrusted with the formulation of a suitable cropping programme for the area with the aim of maximizing production by concentrating on crops, which are more suited according to the agro-climatic conditions of the area. The A.P.C.C. have been given sufficient financial support by way of outright grants by the Government and the right to levy taxes from farmlands enabling them to employ staff and to obtain any other requirements to carry out their functions. The A.P.C.C. are engaged

in the improvement of irrigation facilities within their areas of operation, such as the building of bunds, small anicuts, maintenance of machines, 2-wheel tractors, etc. The A.P.C. is centrally located in the area and functions as an Agricultural Secretariat where all offices in departments connected with agricultural development, have their regional offices; extension staff engaged in crop production, animal husbandry, crop insurance, livestock development, banking and marketing of agricultural products, like the P.M.B. staff. The building also houses the Agricultural Lands Law, such as the non-cultivation of cultivable land, wilful neglect of arable land, failure to maintain reasonable standards of production and so on. The A.P.C. has become a new land-mark in the future development of agricultural services in G.S.L.

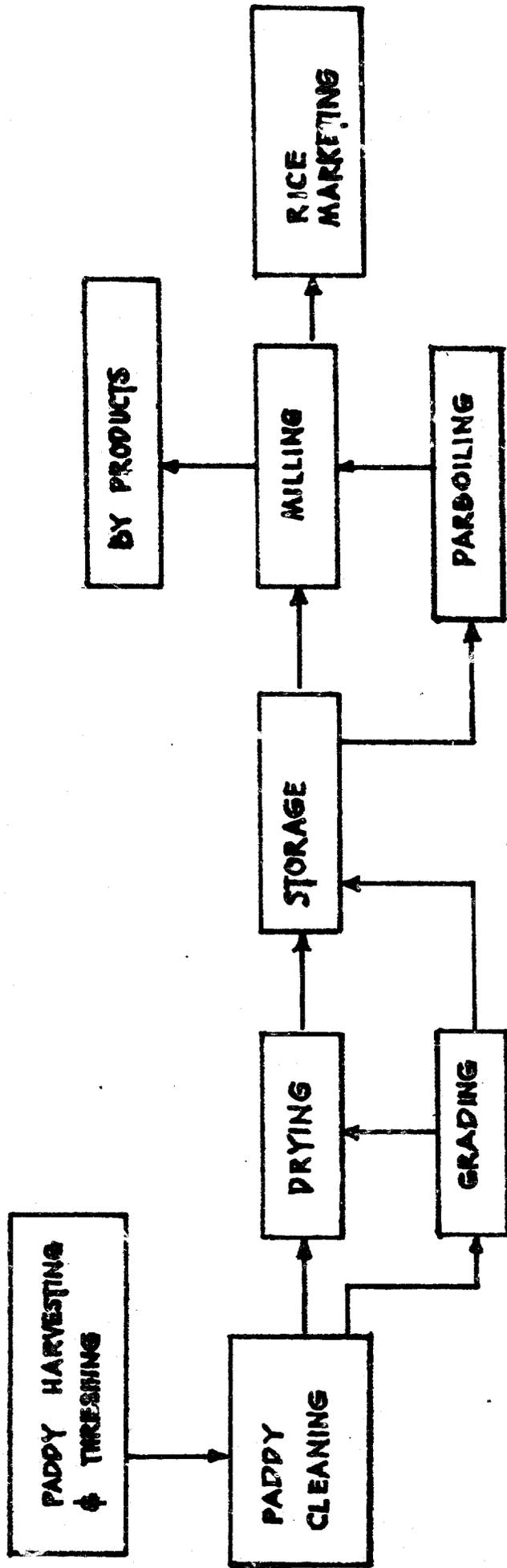
The Cultivation Committees were also re-organized under the new Act and functions as Agents of the A.P.C. Their membership too, is nominated as in the case of the A.P.C., by the Minister of Agriculture & Lands and are directly responsible to him. Both Committees enjoy to a greater degree independence from the bureaucracy than their predecessors and can exercise their judgement on matters pertaining to agricultural development of the area. They have the powers and the funds to implement approved Government policies. The current emphasis on food production has made the role of the A.P.C. and the C.C. more important than ever. The P.M.B. will work in close contact with both organizations. During the last 2 years there has been proposals in making the A.P.C. the agents of the P.M.B. for the purchase of paddy. This has been already done in some areas during the last season.

The Multi-Purpose Co-op Societies are long standing village organizations with a history dating back to pre-World War II days. Though they were primarily intended to distribute scarce consumer commodities on the ration, over the years they have developed into important village organizations handling important aspects of agricultural production, credit and marketing, as well. As the paddy purchasing agency of the P.M.B., and M.P.C.S. continues to play a very important part. More than 95% of the paddy purchased by the P.M.B. is through the M.P.C.S.S. A certain amount of re-organization has taken place in the M.P.C.S.S. during the last decade, which have made them managerially more competent and financially more viable. Small societies have been amalgamated to form larger societies and recent proposals aim to form in each district a Committee headed by the District Authority (G.A.) consisting of officials and appointed members to direct and co-ordinate the activities of the Primary Societies and their branches. The emphasis in the present re-organization is not only for the better distribution of consumer goods, but also to make these societies play an active part in all forms of development work in the Country. In the major paddy producing areas, the M.P.C.S.S. derive their profits mainly from the purchase of paddy. As Agents of the P.M.B. they have earned

considerable profits and the P.M.B. has been able to implement all measures which had been introduced to modernize the purchase procedures such as, the conversion of the system of purchase from volume to weight, the conducting of tests for moisture by the use of moisture meters, docking paddy for impurities and so on. The M.P.C.SS. have followed instructions laid down by the P.M.B. and in spite of initial resistance by a few of them mainly due to complaints regarding the nonavailability of accessories which were meant to be introduced simultaneously in all areas of G.S.L. by and large, all M.P.C.SS. have abided by the norms of purchase laid down without serious break-downs. In the performance of these functions, the P.M.B. has assisted these societies by meeting all additional operational costs in the form of increased commissions and enhanced payment for transport, etc.

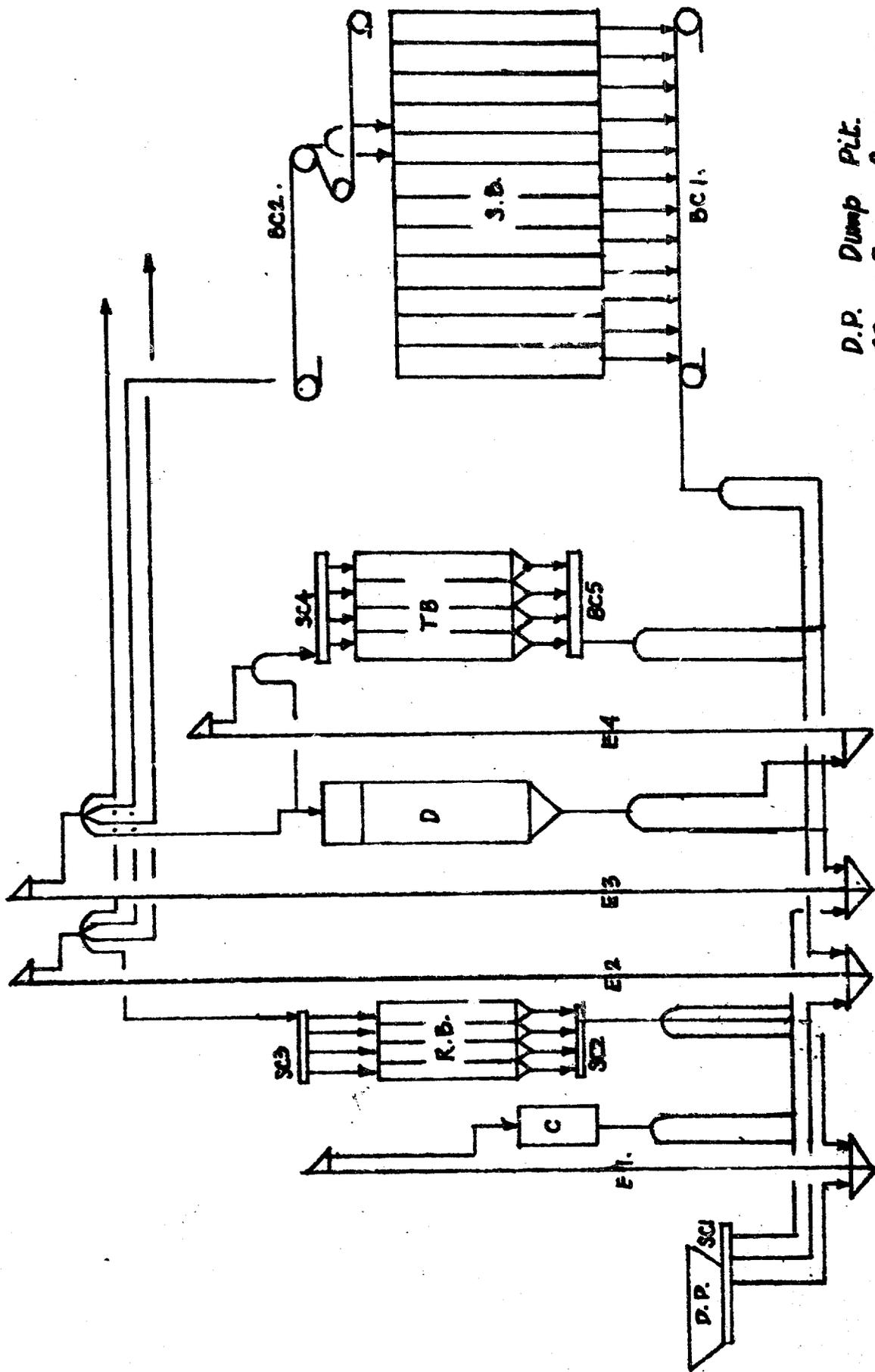
ANNEX 2

Technical Analysis



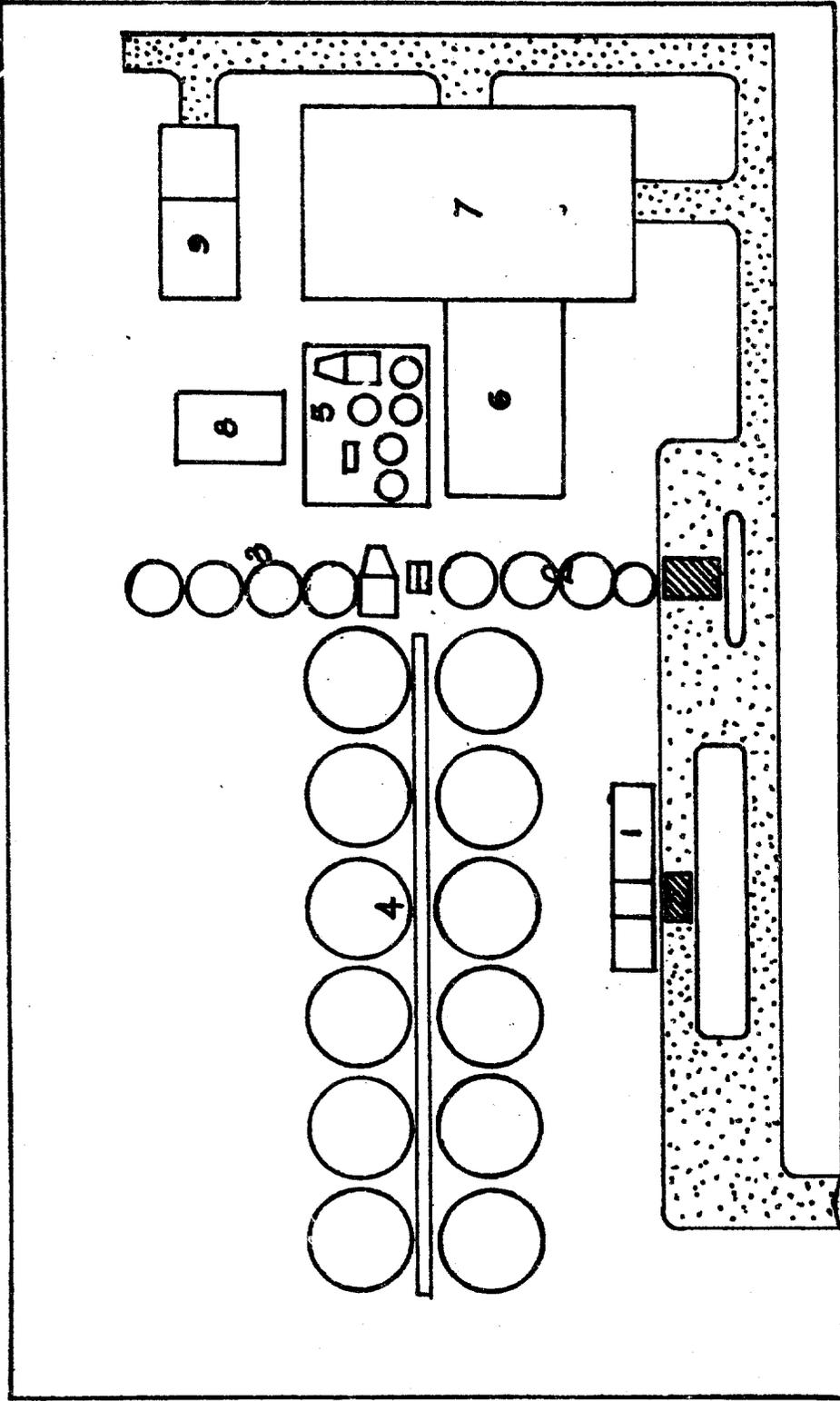
Note: All blocks are connected by transport, handling and quality control systems.

FIGURE 1 BLOCK DIAGRAM OF PADDY STORAGE AND PROCESSING SYSTEM.



- D.P. Dump Pit.
- SC1-5 Screw Conveyors.
- E1-4 Bucket Elevators.
- BC1-2 Belt Conveyors.
- RB Receiving Bins.
- TB Tempering Bins.
- SB Storage Bins.
- C Cleaner.
- D Dryer.

FIGURE 2 FLOW DIAGRAM



- 1. Office & weigh bridge.
- 2. Receiving bins
- 3. Drying Section
- 4. Storage Section
- 5. Parboiling Mill
- 6. Rice Stone
- 7. Rice
- 8. Boiler Shop
- 9. Work Shop

FIGURE 3 PLANT LAYOUT.

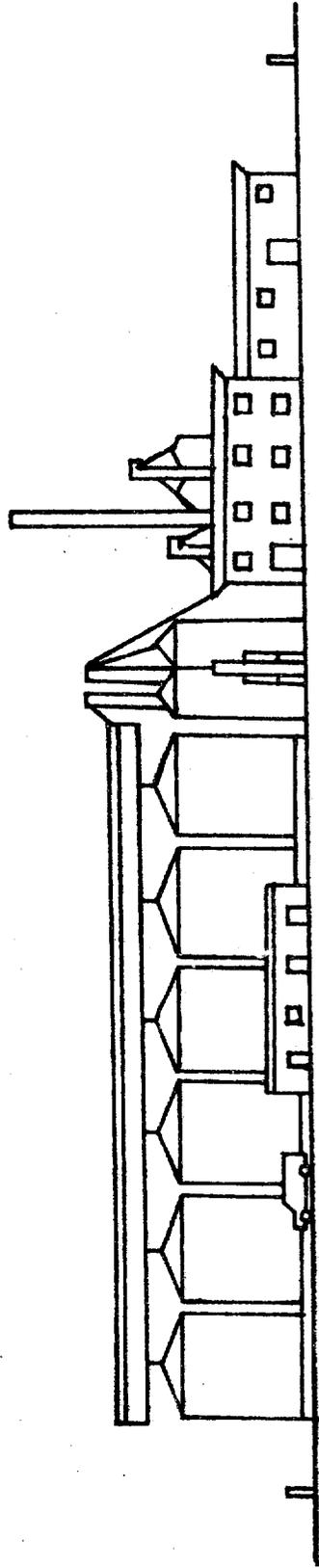
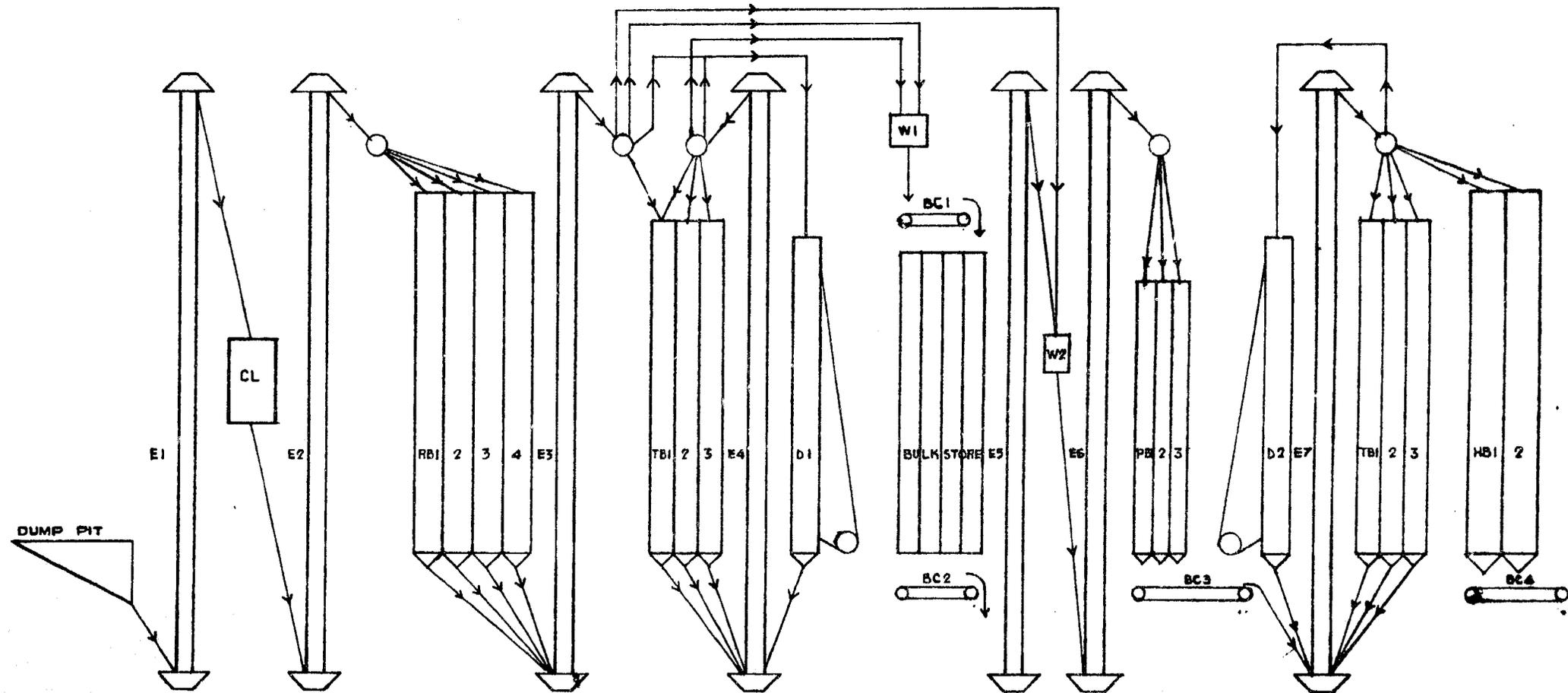
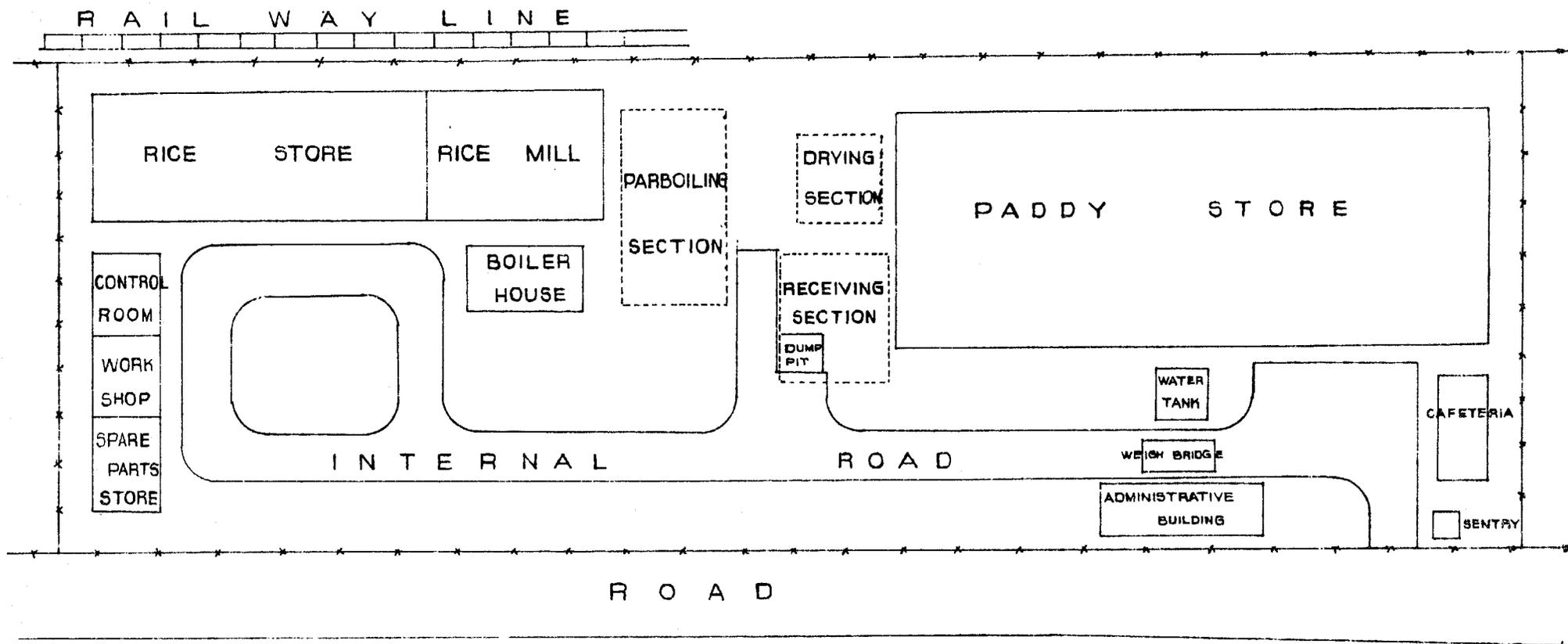


FIGURE 4 PLANT ELEVATION

C- FLOW DIAGRAM



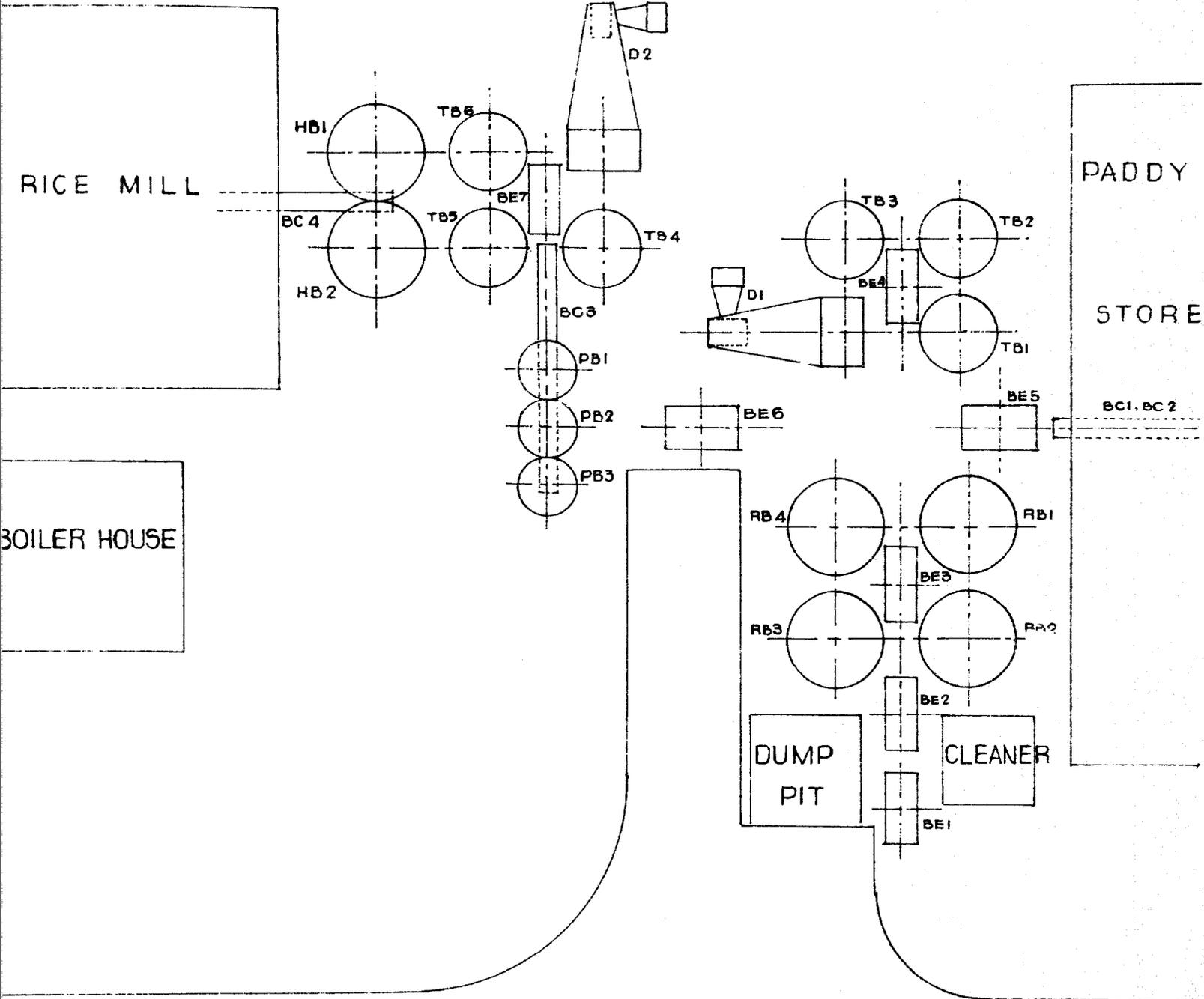
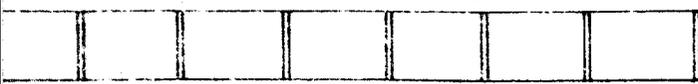
RECEIVING SECTION		DRYING SECTION		STORAGE SECTION		PARBOILING SECTION	
E1	BUCKET ELEVATOR	TB1	TEMPERING BIN	W1	AUTOMATIC WEIGHER	E6	BUCKET ELEVATOR
CL	SCALPER CLEANER	TB2	DO DO	BC1	BELT CONVEYOR	PB1	PARBOILING TANK
E2	BUCKET ELEVATOR	TB3	DO DO	BC2	DO DO	PB2	DO DO
RB1	RECEIVING BIN	E4	BUCKET ELEVATOR	E5	BUCKET ELEVATOR	PB3	DO DO DO
RB2	DO DO	D1	PADDY DRYER	W2	AUTOMATIC WEIGHER	BC3	BELT CONVEYOR
RB3	DO DO					D2	PADDY DRYER
RB4	DO DO					E7	BUCKET ELEVATOR
E3	BUCKET ELEVATOR					TB1	TEMPERING BIN
						TB2	DO DO
						TB3	DO DO
						HB1	HOLDING BIN
						HB2	DO DO
						BC4	BELT CONVEYOR



D - LAYOUT OF COMPLEX

ANURADHAPURA

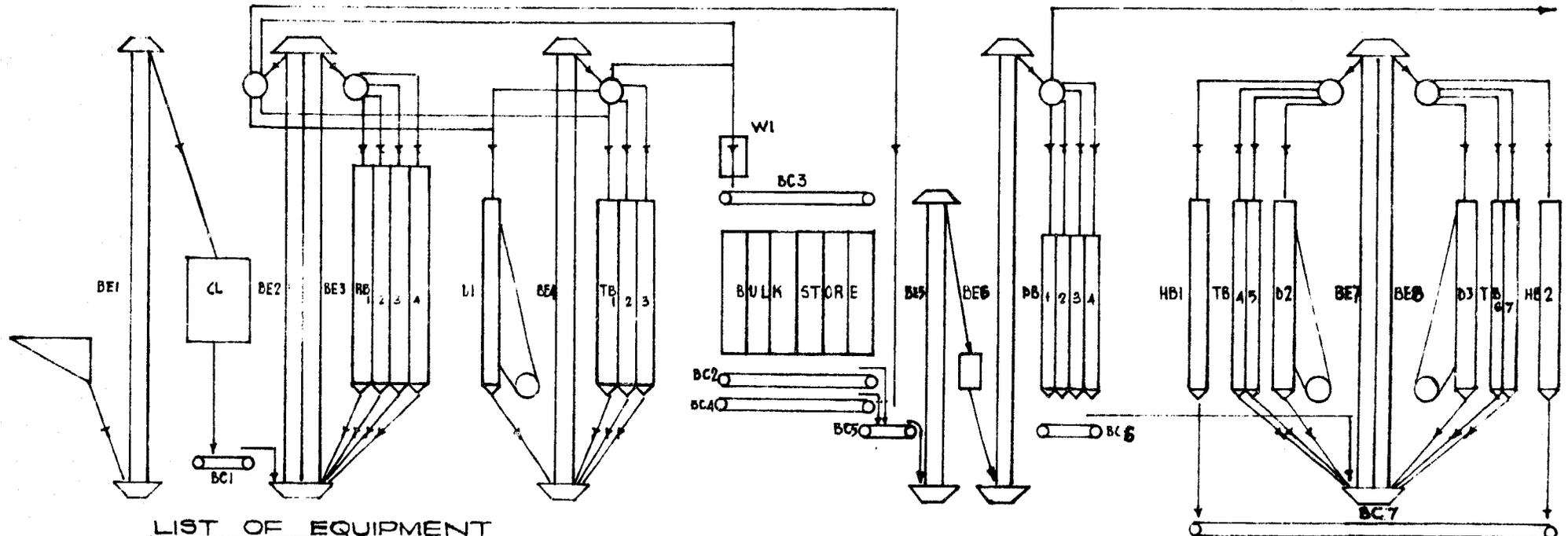
ANNEX TA7



I N T E R N A L R O A D

E - LAYOUT OF EQUIPMENT

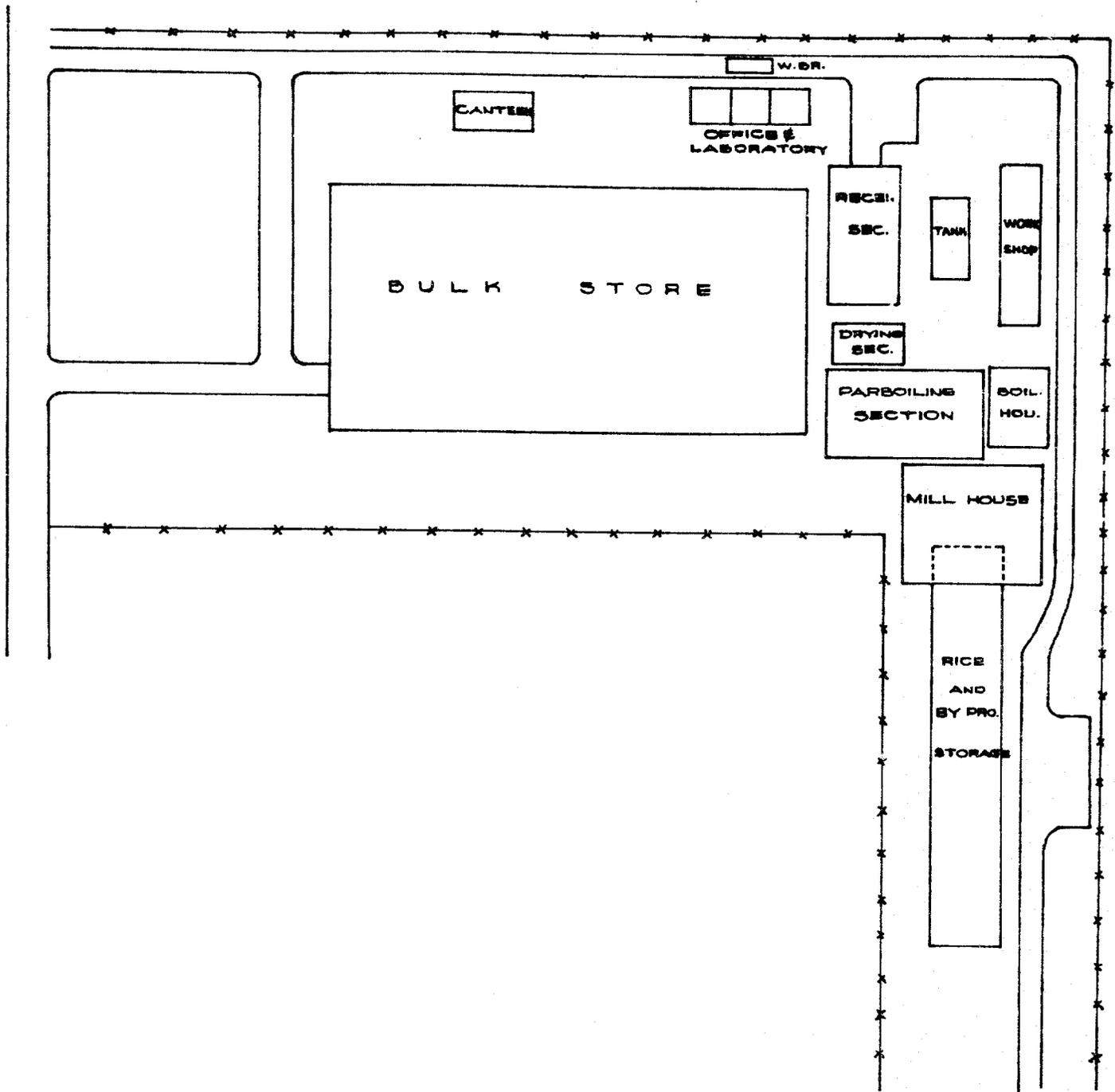
A N U R A D H A P U R A



LIST OF EQUIPMENT

RECEIVING SECTION		STORAGE SECTION	
CL	SCALPER CLEANER	BC2,3,4	BELT CONVEYORS
BE1	BUCKET ELEVATOR	BC5	BELT CONVEYOR
BC1	BELT CONVEYOR	W1	AUTOMATIC WEIGHER
BE2,3	BUCKET ELEVATORS	W2	AUTOMATIC WEIGHER
RB1,2,3,4	RECEIVING BINS		
DRYING SECTION		PARBOILING SECTION	
BE4	BUCKET ELEVATOR	BC6	BELT CONVEYOR
D1	PADDY DRYER	BE5	BUCKET ELEVATOR
TB1,2,3	TEMPERING BINS	PB1,2,3,4	PARBOILING TANKS
		BC7	BELT CONVEYOR
		BE6,7,8	BUCKET ELEVATORS
		D2,3	PADDY DRYERS
		TB4,5,6,7	TEMPERING BINS
		HB1,2	HOLDING BINS

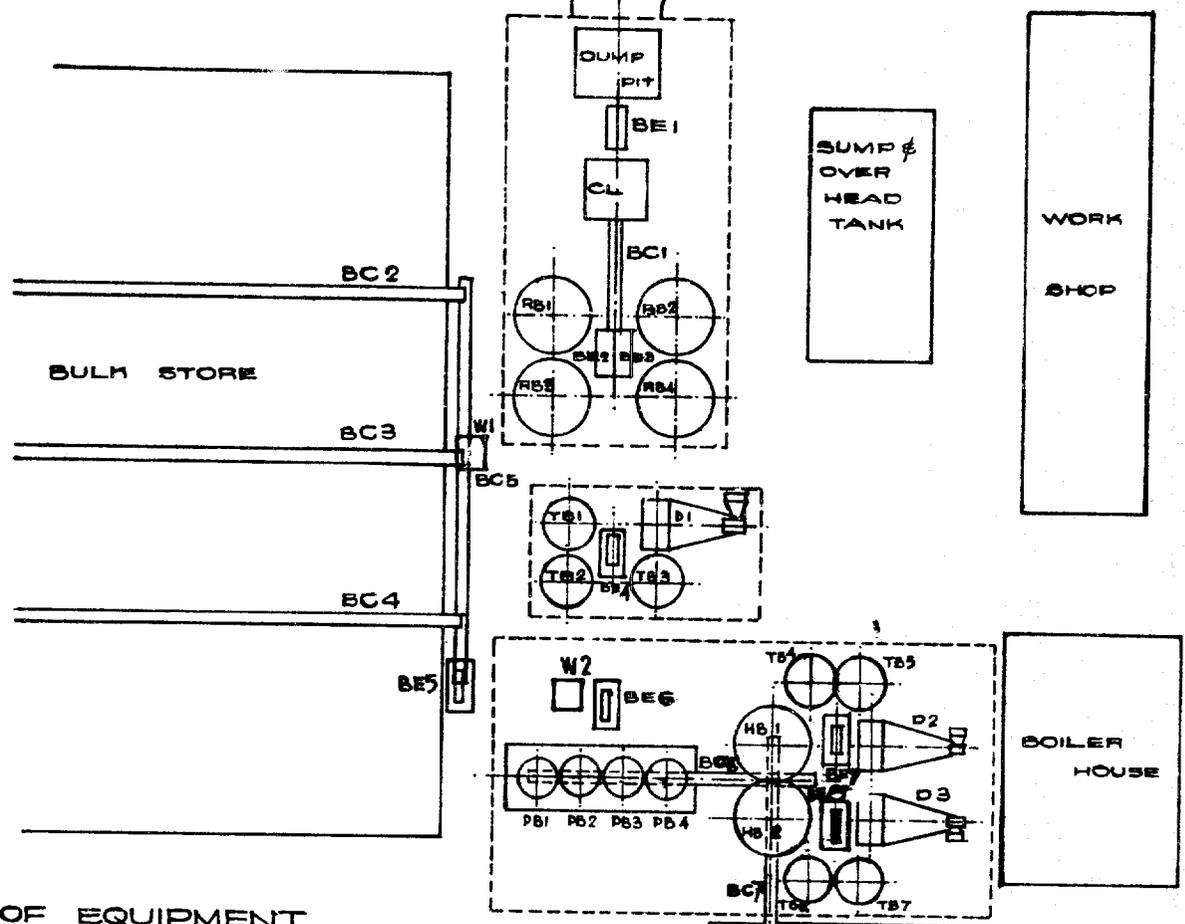
A - FLOW DIAGRAM OF PROPOSED COMPLEX



B- LAYOUT OF PROPOSED
COMPLEX

KANTALE

ANNEX TA10
SCALE - 1" = 80'-0"



LIST OF EQUIPMENT

RECEIVING SECTION

- CL SCALPER CLEANER
- BE1 BUCKET ELEVATOR
- BC1 BELT CONVEYOR
- BE2,3 BUCKET ELEVATORS
- RB1,2,3,4 RECEIVING BINS

DRYING SECTION

- BE4 BUCKET ELEVATOR
- D1 PADDY DRYER
- TB1,2,3 TEMPERING BINS

STORAGE SECTION

- BC2,3,4 BELT CONVEYORS
- BC5 BELT CONVEYOR
- W1. AUTOMATIC WEIGHER
- W2. AUTOMATIC WEIGHER

PARBOILING SECTION

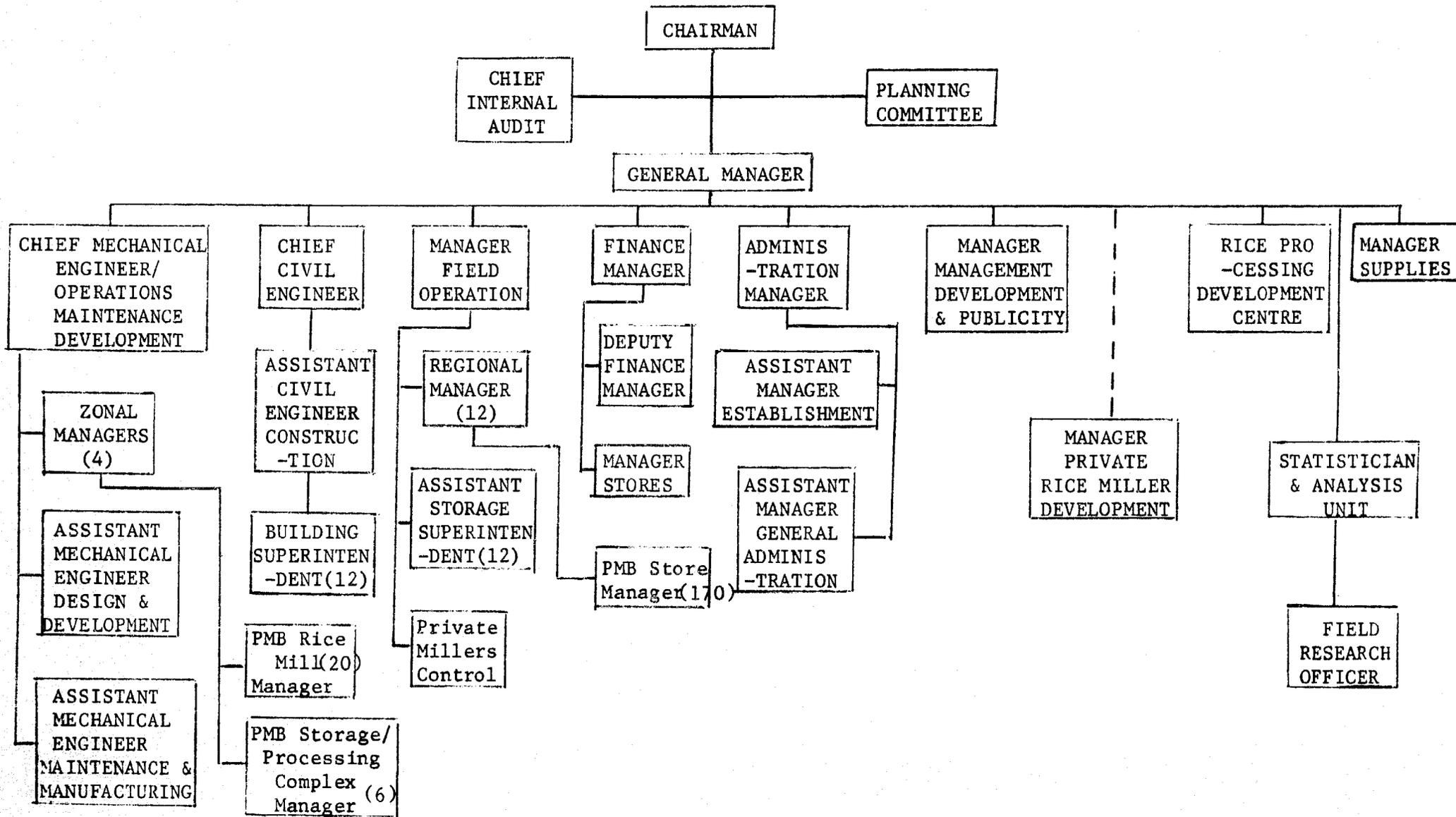
- BC6 BELT CONVEYOR
- BE5 BUCKET ELEVATOR
- PB1,2,3,4 PARBOILING TANKS
- BC7 BELT CONVEYOR
- BE6,7,8 BUCKET ELEVATORS
- D2,3 PADDY DRYERS
- TB4,5,6,7 TEMPERING BINS
- HB1,2 HOLDING BINS

C - LAYOUT OF EQUIPMENT

KANTALE

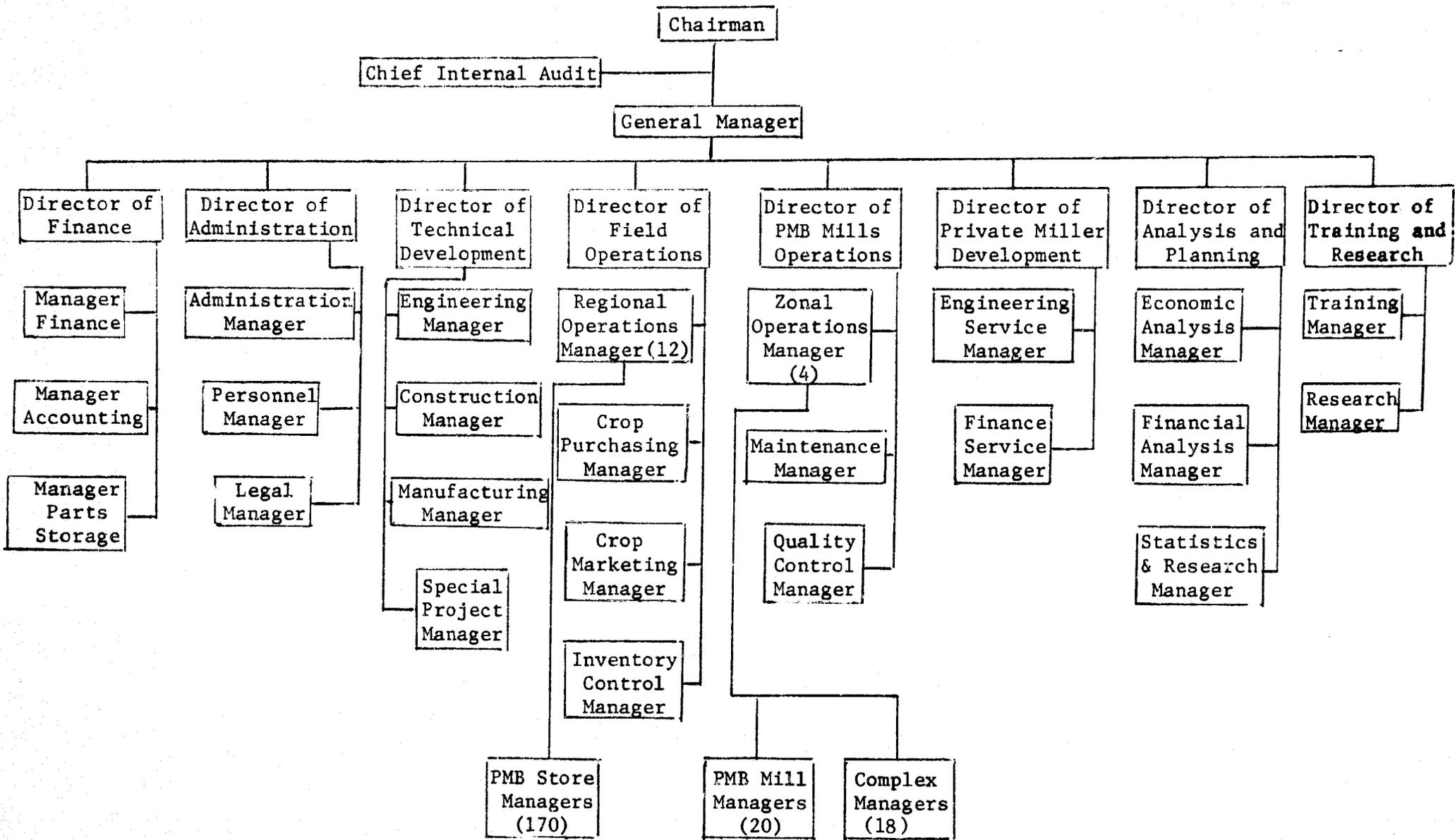
ANNEX TA11

SCALE - 1" = 32'-0"



3/5/76

PADDY MARKETING BOARD PRESENT ORGANIZATION CHART



PADDY MARKETING BOARD FUTURE ORGANIZATION CHART

ISLAND WIDE PADDY PRODUCTION

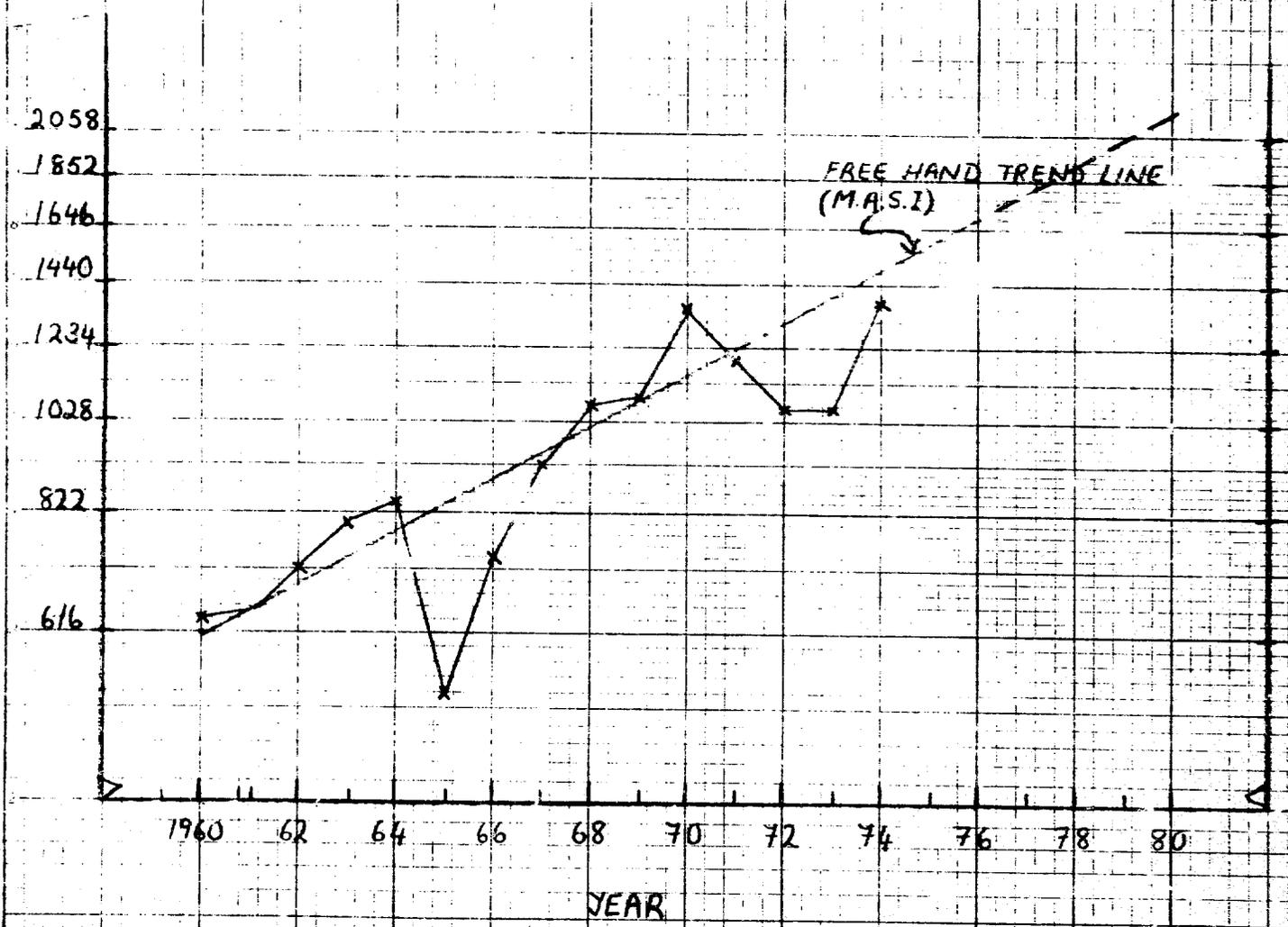


TABLE 11

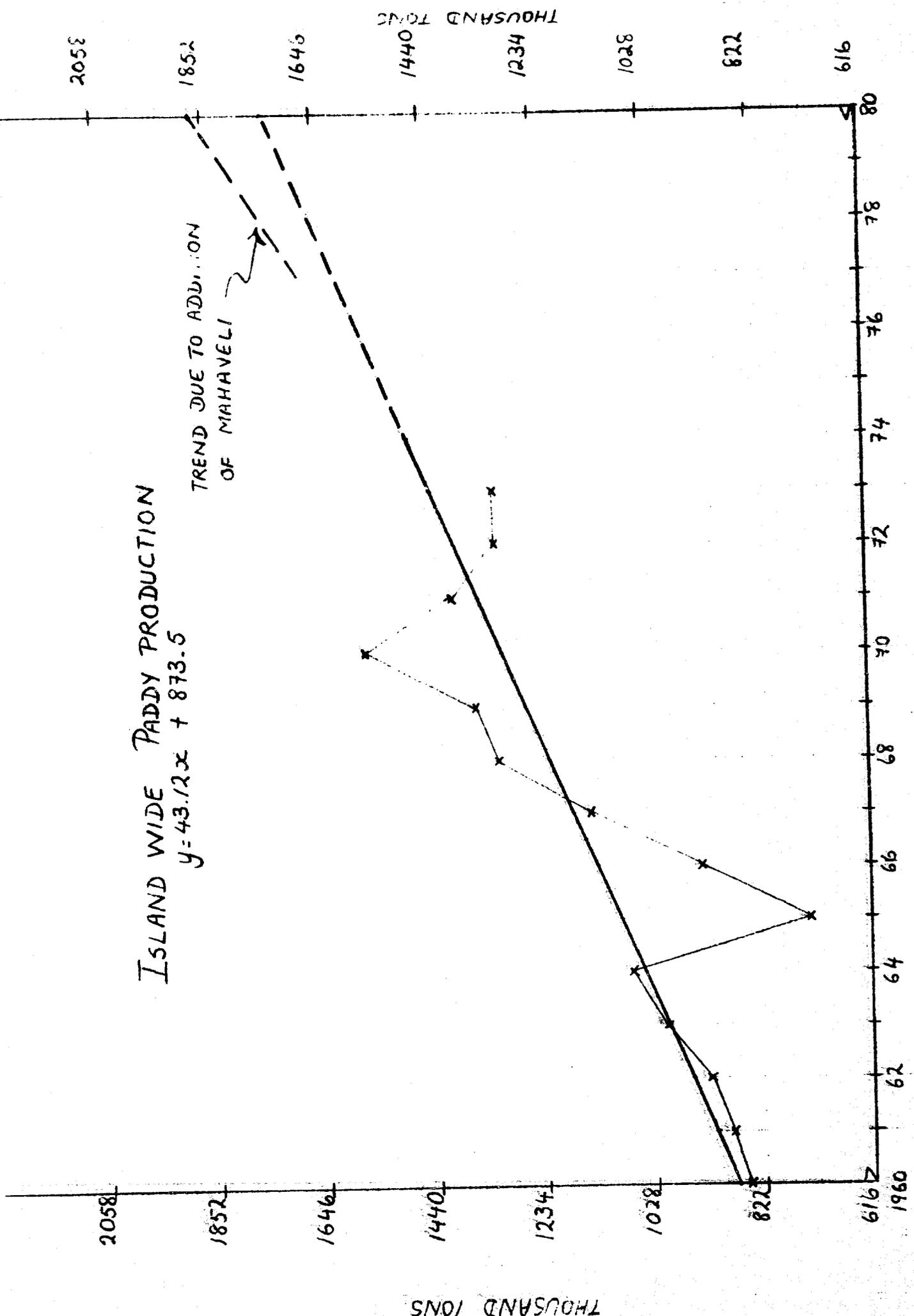
PADDY PRODUCTION ESTIMATES - 1980

	LOW <u>1.88 Mln Tons</u>	HIGH <u>2.27 Mln Tons</u>
Ampare	143,750	162,232
Anuradhapura	247,455	273,125
Badulla	59,204	69,819
Batticaloa	72,491	82,142
Colombo	79,267	97,543
Galle	52,978	71,875
Hambantota	80,500	115,000
Jaffna	55,034	92,409
Kalutara	52,978	62,634
Kandy	127,319	156,069
Kegalle	48,875	57,909
Kurunegalla	168,185	202,302
Mannar	48,811	69,819
Matale	41,152	46,202
Matara	62,836	73,927
Moneragala	27,329	34,909
Nuwara Eliya	52,776	57,500
Polonnaruwa	241,086	272,302
Puttalam	21,353	29,978
Ratnapura	85,017	111,918
Trincomalee	71,461	80,086
Vavuniya	40,452	50,927
TOTAL	1,880,309	2,270,627

ISLAND WIDE PADDY PRODUCTION

$$y = 43.12x + 873.5$$

TREND DUE TO ADDITION
OF MAHAVELI



GPS PADDY PURCHASES - TONS

DISTRICT Batticaloa

MONTH	1968	1969	1970	1971	1972	1973	1974	AVE	%
JAN	19	39	7	318	132	140	4	94	.85
FEB	14	38	3	138	163	163	1	74	.66
MAR	223	1143	993	688	383	1376	412	745	6.72
APR	1095	1153	1739	1693	1367	1929	2026	1572	14.19
MAY	2041	2582	1928	3034	2664	2819	3515	2655	23.97
JUN	1346	1464	1258	2106	1900	1496	1695	1609	14.52
JUL	1103	1113	1242	1836	1507	1271	747	1260	11.37
AUG	545	361	497	1072	951	530	765	674	6.08
SEP	344	224	772	676	485	705	619	546	4.92
OCT	463	416	1725	1682	1218	949	1966	1203	10.86
NOV	75	48	694	1158	1021	57	240	470	4.24
DEC	31	40	390	329	354	7	70	174	1.57
TOTALS	7299	8621	11248	14730	12145	11443	12060	11078	100.00
PRODUCTION	39972	50772	49613	42072	40992	43741	51565	45532	
% PROCURED	18.3	17.0	22.7	35.0	29.6	26.2	23.4	24.3	

May 2, 1976

:jc

TABLE 12

FMB Projected Paddy production and purchase targets through 1980, with Milling Capacities of
FMB Mills, Quota Millers and Private Millers 7/

83

	1/		2/				FMB Rated Milling Cap.			3/					4/		5/		6/		
	Paddy Production		PMB Purchases				-Tons Per Year-			FMB Effective Milling Cap					Quota Millers Cap		Effective Milling Capacity		Less. Purchases to be milled by private millers		
	High	Low	High	%	Low	%	Old	New	Total	Old	%	New	%	Total	%	Rated	Effective	FMB	Quota	Low	High
ISLAND WIDE																					
1972	1,291,717	-	541,194	42	-	-	-	-	57,177	-	-	-	57,177	-	-	484,017	11	89	750,523	-	
1973	1,298,227	-	470,557	36	-	-	-	-	60,551	-	-	-	60,551	-	-	410,006	13	87	827,670	-	
1974	1,577,533	-	428,640	27	-	-	-	-	55,775	-	-	-	55,775	-	-	372,865	13	87	1,148,893	-	
1975	1,136,508	-	233,043	21	-	-	-	-	51,894	-	-	-	51,894	-	-	181,149	22	78	903,465	-	
1976	1,552,870	1,822,339	514,934	33	611,553	33	77,064	-	77,064	77,064	80	-	-	77,064	80	594,372	453,284	12	88	1,037,986	1,210,786
1977	1,660,333	1,951,304	594,730	36	703,695	36	77,064	108,000	185,064	61,650	80	86,400	80	148,050	80	"	446,680	25	75	1,065,603	1,247,609
1978	1,748,780	2,086,428	670,326	38	800,623	38	185,064	54,000	239,064	148,080	80	43,200	80	191,250	80	"	479,076	29	71	1,078,454	1,285,805
1979	1,837,022	2,183,150	749,429	41	879,687	41	239,064	48,000	287,064	191,250	80	38,400	80	229,650	80	"	519,779	31	69	1,087,593	1,303,463
1980	1,880,455	2,271,660	804,886	43	962,784	43	287,064	36,000	323,064	229,650	80	28,800	80	258,450	80	"	546,436	32	68	1,075,569	1,308,876

94

Footnotes to table on production, purchase and milling.

- 1/ 1972 - 1975 statistical data - PMB. 1976-80, PMB estimates (MASI analysis - high, PMB March 1976 - low estimates.
- 2/ 1972 - 1975 actual purchases. From 1976 through 1980 shown as estimates. These estimates are based on a 2% increase per year after 1976, where 1976 is projected as the average purchase from 1968 through 1974.
- 3/ Actuals from 1972 - 1975; 1976-80 taken as 80% of rated capacity
- 4/ Actual milling shown for 1972 - 1975. Estimates shown for 1976-80 (amounts to paddy purchase less PMB milling). This corresponds to the present effective milling capacity.
- 5/ This shows % of paddy purchased, milled by PMB and milled by quota millers
- 6/ Paddy production less the PMB purchases (milled by PMB and quota millers) to be milled by remaining private millers. This amount of paddy includes some kept for seed purposes, the balance for home consumption and private trade. Reference section on Private and Quota millers in Technical Analysis for explanation of numbers and sizes of quota and private millers.
- 7/ This table presents island wide summary of all district analyses (which is available with PMB).

May 5, 1976

PMB

:jc

Paddy Marketing Board
Milling Storage and Rice Balance Sheet

DISTRICT: B A T T I C A L O A
YEAR: 1980

Remarks: Country Estimate of Production 1.88 million tons
BATTICALOA - 72,491 tons and paddy purchases 34,769 tons

	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
1. Paddy Procurement Tons	148	753	9057	8725	6063	2992	1019	950	2330	1843	667	236
2. Milling Capacity T/M	2900	----->										
3. Balance Paddy in Storage Tons	2130	-	6157	11982	15145	15237	13356	11406	10836	9779	7546	4882
4. Existing Storage Capacity Tons	10570	----->										
5. Balance Storage Capacity Required - Tons	-	-	-	1412	4575	4667	2785	836	266	-	-	-
6. Rice Production Tons - 68%	1972	----->										
7. Rice Ration - Tons	320	----->										
8. Rice Balance - Tons	1652	----->										

Maximum Additional Storage Required: 4667 tons

(This is sample of district calculations showing expected paddy purchases by month, regulated monthly milling, balance paddy to be stored by month, rice production, consumption, and rice balance - to be moved to deficit districts).

**PMB PADDY STORAGE - PRESENT CAPACITY AND REQUIREMENTS
IN 1980 BASED ON TWO PRODUCTION TARGETS**

	Present			Storage Deficit/Surplus for production targets	
	No. of Buildings	No. of Locations	Capacity tons	1.88mln. tons	2.27mln. tons
	1. Amparai	34	19	32,440	+ 7,298
2. Anuradhapura	38	16	40,320	+ 5,419	+ 1,801
3. Badulla	10	5	6,300	+ 499	- 541
4. Batticaloa	18	11	10,570	- 4,653	- 6,680
5. Colombo	3	3	2,240	+ 110	- 382
6. Galle	5	5	4,550	+ 1,965	+ 1,041
7. Hambantota	13	5	9,540	+ 492	- 3,386
8. Jaffna	17	9	8,331	- 3,487	- 11,511
9. Kalutara	5	5	4,270	+ 1,509	+ 1,006
10. Kandy	14	7	18,090	+ 8,025	+ 5,754
11. Kegalle	4	3	2,380	+ 890	+ 614
12. Kurunegala	19	12	22,540	+ 14,014	+ 11,403
13. Mannar	12	10	7,649	- 5,531	- 11,204
14. Matale	10	6	7,000	+ 2,414	+ 1,636
15. Matara	4	3	3,500	+ 822	+ 353
16. Moneragala	11	7	6,790	+ 794	- 867
17. Nuwara Eliya	2	2	1,400	- 133	- 274
18. Polonnaruwa	26	9	26,560	- 24,758	- 31,413
19. Puttalam	5	4	4,200	+ 1,798	+ 828
20. Ratnapura	10	6	7,510	+ 1,275	- 1,284
21. Trincomalee	24	16	19,995	+ 1,743	- 459
22. Vavunia	23	13	13,864	+ 2,857	+ 3
TOTAL	307	170	260,039	- 38,562	- 68,001
				+ 58,225	+ 28,371

SURPLUS/DEFICIT - 1980

TONS

PRODUCTION TARGET OF 1.88 MLN TONS

DISTRICT MAP

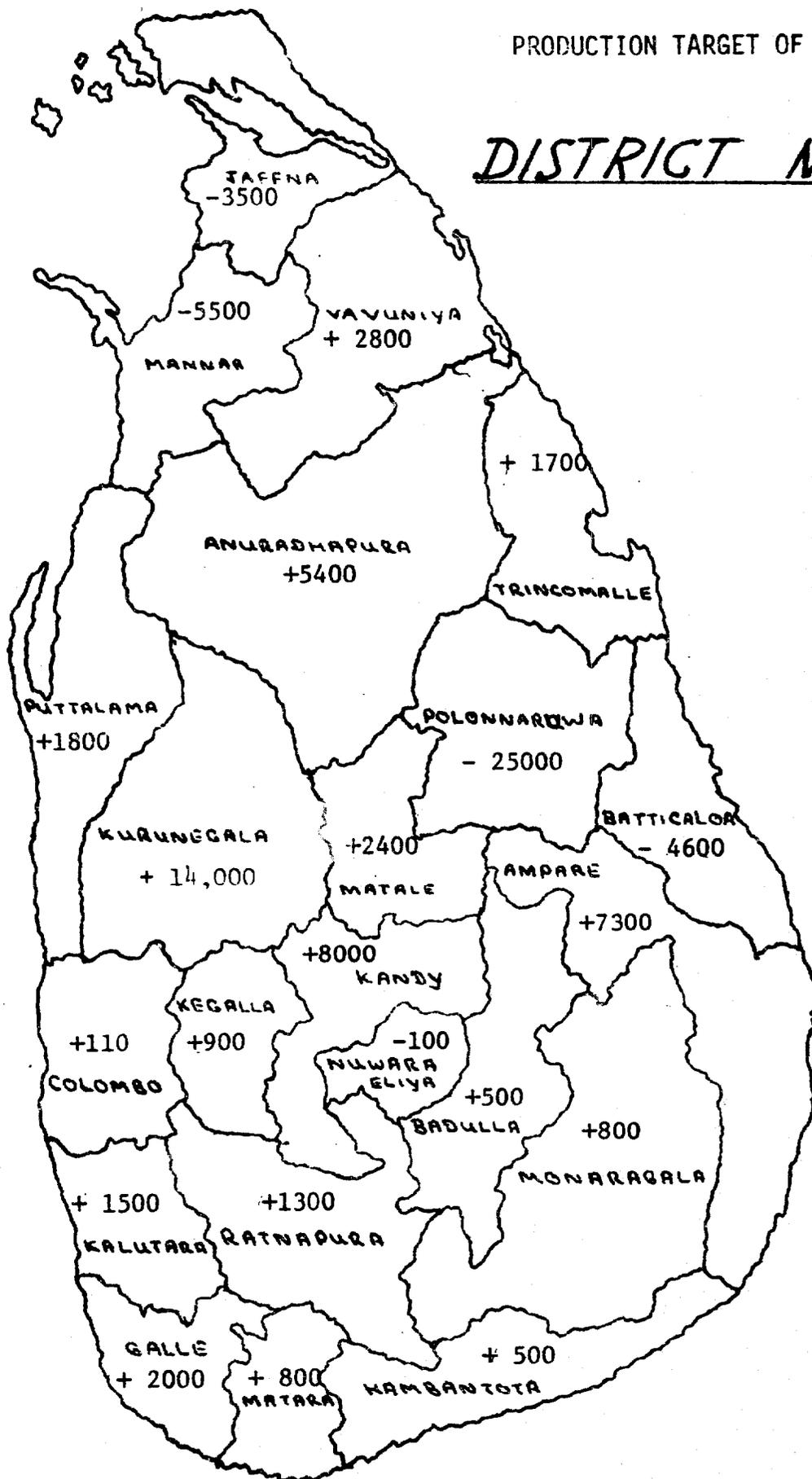


TABLE 13

PRESENT PMB AND PRIVATE (QUOTA) MILLERS' CAPACITY AND REQUIREMENTS
in 1980 ON PRODUCTION TARGET OF 1.88 MILLION TONS (91M BUSHEL)

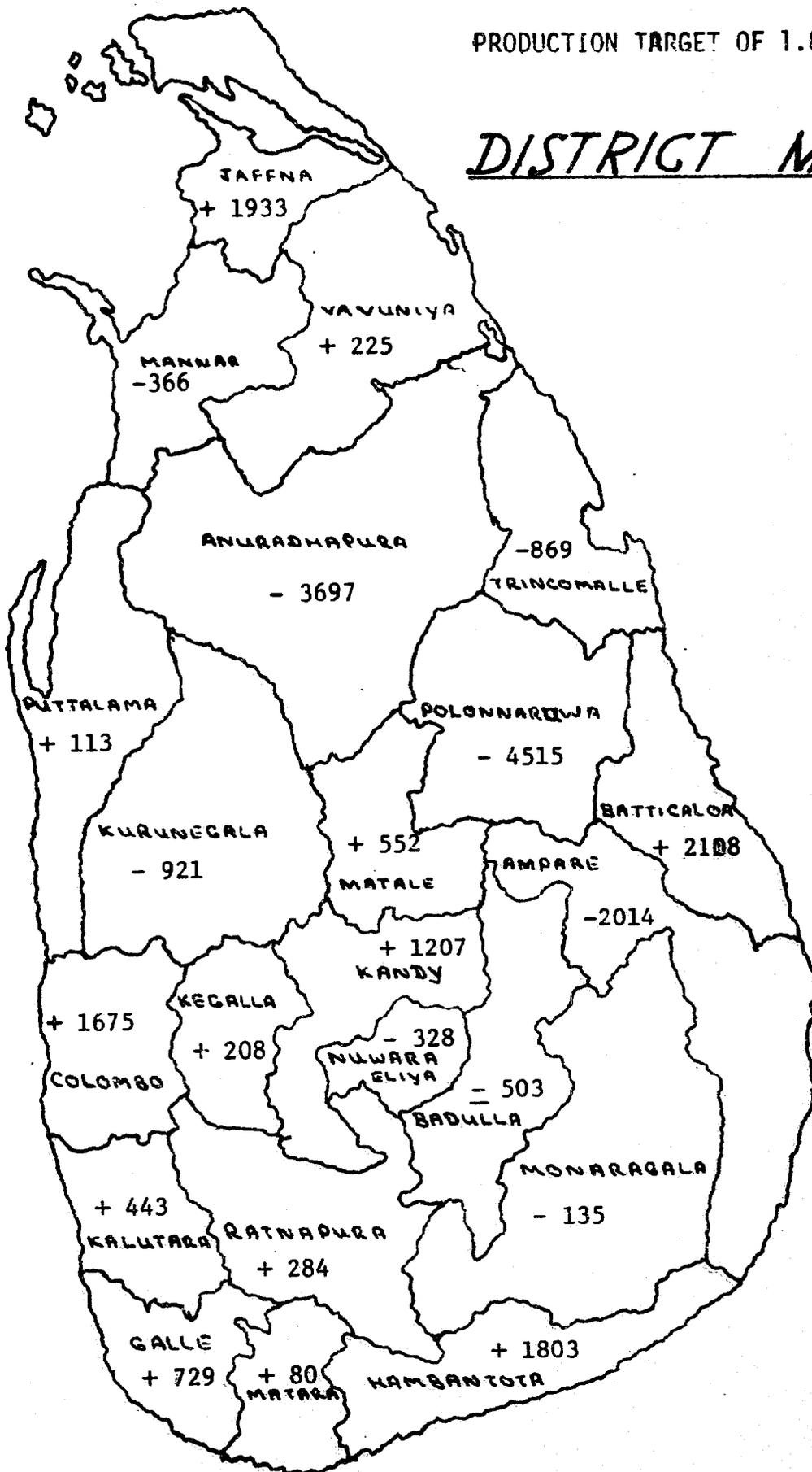
	PMB (Tons per Month)	Quota (Tons per Month)	Total	Deficit/Surplus in 1980 (Tons Per Month)
Ampare	2350	3803	6153	-2014
Anuradhapura	337	4039	4476	-3697
Badulla	-	1076	1076	- 503
Batticaloa	1350	3658	5008	+2108
Colombo	-	2326	2326	+1675
Galle	-	1807	1807	+ 729
Hambantota	2350	2673	5023	+1803
Jaffna	134	3679	3813	+1933
Kalutara	-	1105	1105	+ 443
Kandy	1330	3272	4602	+1207
Kegalle	-	819	819	+ 208
Kuruneagala	1275	1168	2443	- 921
Mannar	134	1818	1952	- 366
Matale	262	1422	1684	+ 552
Matara	-	1127	1127	+ 80
Moneragala	244	896	1140	- 135
Nuwara Eliya	-	200	200	- 328
Polonnaruwa	1413	9142	10555	-4515
Puttalam	-	682	682	+ 113
Ratnapura	1000	1764	2764	+ 284
Trincomalee	2243	997	3240	- 869
Vavuniya	-	2248	2248	+ 225
TOTAL	15422	49531	64953	-13348 +11360

SURPLUS/DEFICIT - 1980

TONS

PRODUCTION TARGET OF 1.88 MLN TONS

DISTRICT MAP



April 29, 1976

TW & JW

PMB Plan : Processing Plants;

District	Requirements		Recommendations	
	Storage (Tons)	Milling (TPH)	Storage (Tons)	Milling (TPM)
Batticaloa	4658	-	5000	-
Jaffna	3487	-	4000	-
Mannar	5531	366	6000	500 <u>1/</u>
Polonnaruwa	24,758	4515	25,000	4000
Ampare	-	2014	-	2000
Anuradhapura	-	3697	-	3000
Badulla	-	503	-	-
Kurunegala	-	921	-	1000
Moneragala	-	135	-	-
Nuwara Eliya	133	328	-	-
Trincomalee	-	869	-	1000 <u>1/</u>
TOTALS :	38,562	13,348	40,000	11,500 <u>2/</u>

* 1/ These two mills (1,000 & 500) are being supplied by GSL

2/ Of this total 11,500, only 10,000 TPM or 10 mills each of 2 TPH capacity is provided in the PMB/AID Program.

April 29, 1976
JW

On PMB's master plan, installation will be phased as :

1977	-	3	Paddy Processing Plants
1978	-	4	" " "
1979	-	3	" " "
and GSL	2	"	" " " in 1977

Location (district) will be :

	1977	1978	1979
Polonnaruwa	2	2	-
Anuradhapura	1	1	1
Ampare	-	1	1
Kurunegala	-	-	1
<hr/>			
Totals :	3	4	3
and { Mannar	1	-	-
GSL { Trinco	1	-	-
<hr/>			
Totals :	5	4	3

Or add to PMB Annual Milling capacity as follows :

	Tons Per Year					
	1978		1979		1980	
	Rated	Effective	Rated	Effective	Rated	Effective
Polonnaruwa	24,000	19,200	24,000	19,200	-	-
Anuradhapura	12,000	9,600	12,000	9,600	12,000	9,600
Ampare	-	-	12,000	9,600	12,000	9,600
Kurunegala	-	-	-	-	12,000	9,600
Mannar	6,000	4,800	-	-	-	-
Trincomalee	12,000	9,600	-	-	-	-
<hr/>						
TOTALS :	54,000	43,200	48,000	38,400	36,000	28,800

Footnotes to New Financial Comparison of Present PMB system of Operation to Proposed new system of operation.

- 1/ This analysis shows an expected rice recovery rate of 68% under the present system, reflecting a fair average quality of rice.

- 2/ Under the new proposed system the rice recovery rate is expected to average 71% outturn for parboiled paddy, and 69% for raw paddy - both reflecting a fair average quality of rice.

TECHNICAL ASSISTANCE COMPONENTS

1. Project Coordinator 48 mm

The Project Coordinator will assist PMB in their overall operations throughout the four years of major project activity. It is envisaged that he will be an agricultural engineer familiar with all aspects of paddy procurement, storage, and processing on the scale envisaged in the project. He should have many years' experience overseas, preferably in South Asia and will serve as the contractor's project coordinator in the field.

2. PMB Mill Operations 4 mm

In line with the start-up of new PMB mills using modern milling techniques, a specialist well-experienced in operating modern rice mills in other countries is necessary. The specialist would work with the Mill Operations Department, especially the Area Operations Managers to develop an improved control over such current problems as sanitation, maintenance, spare parts procurement and other aspects of operations. This specialist would also help in improving training programs for mill operators and maintenance people at the PMB training centers. He would contribute to the development (a) of inventory control and ordering procedures for spare parts and (b) of financial/administrative reports from the Mill Operations Department which should be periodically reported to management for decision-making.

3. Field Operations 3 mm

This short term consultant will assist PMB in logistics and inventory control and in developing a centralized control and reporting system to provide continual up-to-date information on all movements of paddy in Sri Lanka so that deficit mills and storage units may be promptly supplied from surplus areas.

It is envisioned that this consultant might be a rice specialist who has served in the Agricultural Marketing Service of the U.S. Department of Agriculture and has been involved in the Department's operations working with growers, managing the

Government's grading and tasting system and monitoring paddy and rice shipments for statistical reporting purposes.

4. Private Miller Development 6 mm

This consultant will assist PMB in implementing the plan to assist private millers and will help to focus PMB attention on needs of the private sector. He should be a rice milling specialist experienced in private business and should be familiar with the financial and management aspects of business operations as well as the technical aspects of rice milling.

5. Manufacturing Specialist 6 mm

Local manufacturing, as stated earlier, will reduce foreign exchange outlays, but it is also important that Sri Lanka's rice milling industry has access to equipment and spare parts which are of a quality and cost that are reasonably close to international standards. Although local manufacturers have copied foreign products, there is much room for improvement in obtaining higher quality, lower cost and equipment that is modern in design. PMB requires a specialist experienced in manufacturing grain processing machinery and storage/handling equipment. This person's major objective would be to work with the local manufacturers to show them how and what equipment can be made that would maximize benefits to Sri Lanka's rice milling industry while creating reasonable profits for the manufacturer.

6. Financial Control 2 mm

PMB requires assistance to upgrade and streamline their financial control and management information system to insure timely information to management. While too much sophistication is regarded as unnecessary, the extent of PMB's operation may require an automated system using the GSL's computer.

A management information systems specialist with experience in financial controls is required.

7. Home Office Support 8 mm

PMB recognizes the contractor's need for periodic home office support to the operation incountry and the advantage of available advice in such areas as agricultural economic, economic and project planning, etc. It is envisioned that this support will be provided at various times during the life of the project up to the number of months budgeted.

8. Training

The project coordinator will assist PMB in developing short study tours for various PMB staff in countries in the Asia/South Asia region. Dollars 50,000 has been budgeted for this purpose. Arrangement of such training will be facilitated by including it in the T.A. contract.

ANNEX 3

Financial and Cost Data

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MASI-PMB Financial Analysis

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PMB CAPITAL INVESTMENT SCHEDULE 1977-1980
(Thousands of US\$)

	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>Total</u>
1. Present PMB Assets/Investments	9,314	-	-	-	9,314
2. AID/PMB Investment					
Foreign Exchange AID	518	1,373	1,076	771	3,738
Local Currency PMB	933	1,650	1,696	1,210	5,489
Total Capital Investment	1,451	3,023	2,772	1,981	9,227
Other (technical assistance, private milling etc. not added to balance sheet)					
Foreign Exchange AID	934	221	221	208	1,584
Local Currency PMB	35	23	23	23	104
Sub-Total - Other	969	244	244	231	1,688
TOTAL					
Foreign Exchange AID	1,452	1,593	1,296	979	5,320
Local Currency PMB	968	1,673	1,719	1,233	5,593
GRAND TOTAL	2,420	3,266	3,015	2,212	10,913
3. Miscellaneous PMB Investment	157	157	157	157	628
ANNUAL TOTAL	11,891	3,423	3,172	2,369	-
Brought Forward	-	11,891	15,314	18,486	-
CUMULATIVE	11,891	15,314	18,486	20,855	20,855

Revised Table 3.4 - (MASI Report)

PMB CAPITAL INVESTMENT AND DEPRECIATION SCHEDULE 1977-1980
US\$ \times 1000

	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
<u>CAPITAL INVESTMENT</u>				
1. Present PMB Assets/Investment	9,314	-	-	-
2. AID/PMB Investment	1,451	3,023	2,772	1,981
3. Miscellaneous PMB Investment	157	157	157	157
Annual Total	10,922	3,180	2,929	2,138
Brought Forward	-	10,922	14,102	17,031
Cumulative	-	14,102	17,031	19,169
<hr/>				
<u>DEPRECIATION</u>				
1. a) 5334 @ 5%	267	267	267	267
b) 3586 @ 7.5%	269	269	269	269
c) 394 @ 2.5%	10	10	10	10
2. AID/PMB Investment (See table 3.4(a) for details)	-	86	352	539
3. at 5%	8	8	8	8
Annual Total	554	640	906	1,093
Brought Forward	378	932	1,572	2,478
Accumulative	932	1,572	2,478	3,571

Revised Table 3.4(a) (MASI Report)

AID LOAN SEGMENT OF PMB DEPRECIATION SCHEDULE 1978 - 1981
(Thousands of US\$)

	<u>Cost</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>
Depreciation 5 Year Life					
Purchase Year 1978	539	-	108	108	108
Depreciation 13.3 Year Life					
Purchase Year 1977	984	74	74	74	74
Purchase Year 1978	1,919	-	144	144	144
Purchase Year 1979	2,340	-	-	176	176
Purchase Year 1980	1,980	-	-	-	149
Depreciation 40 Year Life					
Purchase Year 1977	467	12	12	12	12
Purchase Year 1978	565	-	14	14	14
Purchase Year 1979	433	-	-	11	11
TOTALS	9,227	86	352	539	688

5 Year Life - Moisture Meters

13.3 Year Life - Rice mill machinery, parboiling equipment, conveyors, cleaners, dryers, etc.

40 Year Life - All civil works

TABLE 20

ASSUMPTIONS FOR 1976 - 80 OPERATING STATEMENT PROJECTIONS

	Total Paddy Purchased			Paddy Purchased By:				PMB Stores			
	MM Bu.		M#	PMB Stores		Complexes		Shortages		Balance (After Shortages)	
	Tons	M#		Tons	M#	Tons	M#	Tons	M#	Tons	M#
1976	34.93	717,313	1,606,780	717,313	1,606,780	-	-	1,793	4,017	715,520	1,602,763
1977	38.89	798,634	1,788,940	765,633	1,715,020	132,000	295,680	1,914	4,288	763,719	1,710,732
1978	42.89	880,777	1,972,940	817,777	1,831,820	204,000	456,960	2,045	4,580	815,732	1,824,240
1979	45.06	925,339	2,077,760	832,339	1,864,440	276,000	618,240	2,081	4,661	830,258	1,859,779
1980	47.65	975,527	2,191,900	875,527	1,981,180	300,000	672,000	2,189	4,903	873,338	1,956,277

	PMB STORES				Paddy Issues To:				Complexes		Total Milling Capacity of PMB Mills	
	Opening - Closing Stocks		Balance After Adjustments		Private Mills		PMB (Other Mills)		Tons	M#	Tons	M#
	Tons	M#	Tons	M#	Tons	M#	Tons	M#				
1976	-111,607	-256,000	603,912	1,352,763	526,944	1,180,355	76,968	172,408	-	-	76,968	172,408
1977	- 22,500	- 50,400	741,220	1,860,332	664,252	1,487,924	76,968	172,408	132,000	295,680	208,968	468,088
1978	- 45,000	-100,800	770,732	1,726,440	502,004	1,124,490	64,728	144,990	204,000	456,960	268,728	601,950
1979	-	-	830,258	1,859,779	501,771	1,123,966	52,488	117,573	276,000	618,240	328,488	735,813
1980	-	-	873,358	1,956,277	524,746	1,175,431	48,592	108,846	300,000	672,000	348,592	780,846

PADDY ISSUES:

	Private Millers				PMB (Other Mills)				PMB Complexes				Total Complexes		Total PMB Paddy Milled	
	Raw		Parboil		Raw		Parboil		Raw		Parboil		Tons	M#	Tons	M#
	Tons	M#	Tons	M#	Tons	M#	Tons	M#	Tons	M#	Tons	M#				
1976	421,555	944,284	106,389	236,071	46,181	103,445	30,787	68,963	-	-	-	-	-	-	76,968	172,408
1977	464,976	1,041,547	199,275	446,377	26,939	60,343	50,029	112,065	24,000	53,760	108,000	241,920	132,000	295,680	298,968	468,088
1978	351,403	787,143	150,601	337,347	14,888	33,348	49,840	111,642	24,000	53,760	160,000	403,200	204,000	456,960	268,728	601,950
1979	351,239	785,776	150,531	337,190	7,873	17,636	44,615	99,937	24,000	53,760	252,000	564,480	276,000	618,240	328,488	735,813
1980	-	822,822	187,424	362,629	6,317	14,160	42,275	94,696	24,000	53,760	276,000	618,240	300,000	672,000	348,592	780,846

RICE OUTURNS: *

	Raw	Parboil	Total	Raw	Parboil	Total	Raw	Parboil	Total	Raw	Parboil	Total	Raw	Parboil	Total	
	Tons	M#	Tons	Tons	M#	Tons	Tons	M#	Tons	Tons	M#	Tons	Tons	M#	Tons	
1976	399,304	870,442	74,826	167,610	32,788	73,446	21,859	48,964	-	-	-	-	-	-	64,847	132,410
1977	316,184	708,252	135,507	303,536	19,127	42,844	35,521	79,566	17,040	38,170	76,680	171,763	93,720	209,933	146,387	332,342
1978	238,954	535,257	102,409	229,396	10,670	23,677	35,387	79,266	17,040	38,170	127,800	286,272	143,840	324,442	199,797	427,385
1979	238,843	535,008	102,361	229,289	5,590	12,522	31,676	70,955	17,040	38,170	179,920	400,781	195,950	438,950	233,236	522,427
1980	249,779	555,505	107,048	239,788	4,485	10,047	30,015	67,234	17,040	38,170	185,960	438,950	213,000	477,120	247,600	554,481

* In 1976 - all mills 71% outturn; 1977 on - 71% for PMB Mills, 65% for Private Millers

TABLE 21

PADDY MARKETING BOARD BALANCE SHEET

Actual • 1972-74, Estimated 1975, and Projected 1976-80

(Thousands of Dollars)

(U.S. \$1.00 = 12 Rs.)

	1972	1973	1974	1975	1976	1977	1978	1979	1980
ASSETS									
Cash & Bank Balances, Pre-payments, Deposits, Stamp Imprest	564	2,015	129	304	833	1,167	1,359	1,416	1,500
Inventory, paddy	2,366	1,679	9,348	1,275	16,070	19,345	27,239	28,014	29,788
, rice	95	389	572	190	190	1,389	1,642	2,319	2,831
, gunnies & twine	753	909	680	317	418	466	514	840	572
, spares	246	239	325	250	433	500	767	787	817
, other	77	89	385	83	125	167	208	290	292
Sub-Total, Inventory	3,537	3,204	11,310	2,115	17,236	21,966	30,570	31,940	33,060
Stock Shortage	265	417	352	108	335	357	382	388	409
Less Provision for Write-Off	-	293	352	108	335	357	382	388	409
Net	265	124	-0-	-0-	-0-	-0-	-0-	-0-	-0-
Accounts Receivable	12,107	3,403	3,670	3,772	7,739	11,717	10,932	12,289	13,417
Sub-Total, Current Assets	16,473	8,745	15,046	6,091	25,808	34,850	42,836	45,646	47,917
Total Property, plant & equipment	3,400	3,748	3,711	5,428	11,806	15,049	15,518	20,043	24,210
Less Depreciation accumulated	105	216	340	400	911	1,892	2,682	3,892	5,182
Net	3,295	3,532	3,372	5,029	10,895	13,357	15,836	16,151	19,029
Capital Works in Progress	-	314	1,799	2,928	-	-	-	-	-
Sub-Total, Fixed Assets	3,295	3,846	4,571	7,956	10,895	13,357	15,836	16,151	19,029
Investments	-	-	11	11	11	11	11	11	11
TOTAL ASSETS	19,768	12,591	19,627	14,059	36,713	48,217	58,683	61,807	62,955
LIABILITIES									
Government									
Refinance People's Bank	11,608	2,448	7,149	3,333	21,212	23,823	27,679	28,830	25,133
Other Government Enterprises/Agencies	2,075	1,382	1,619	1,928	1,028	2,096	1,250	833	583
Income Tax payable	286	1,509	2,923	-	392	2,943	3,821	4,123	4,506
Consolidated Fund Levy payable	-	525	692	-	-	-	-	-	833
Sub-Total	13,969	5,864	12,412	5,261	23,532	28,662	32,728	31,787	31,055
Accrued Expenses	333	-	-	-	-	-	-	-	-
Other Creditors & Deposits	144	610	851	887	1,333	2,000	2,083	2,208	2,333
Sub-Total, Current Liabilities	14,446	6,475	13,263	5,928	24,865	30,662	34,811	33,995	33,389
Long-Term Liabilities (Commissioner, Agrarian Services)	4,402	4,281	2,967	2,967	2,967	2,967	2,967	2,580	2,133
TOTAL LIABILITIES	18,848	10,755	16,229	8,894	27,832	33,628	37,778	36,545	36,866
NET WORTH									
Issued Portion of Authorized Capital (10 million Rs.)	748	748	748	833	833	833	833	833	833
Grants from Government of Sri Lanka									
GSL Origin funds	-	625	1,667	3,300	5,233	7,450	9,753	11,274	11,276
Ford Foundation Origin (Equipment/Machinery segment)	-	-	25	25	25	25	25	25	25
FAO/UNDP Origin (Equipment/Machinery segment)	-	-	-	53	60	62	62	62	62
USAID Loan to GSL (Equipment/Machinery segment)	-	-	-	-	1,415	3,042	4,508	4,501	4,891
Sub-Total, Grants	-	625	1,691	3,378	6,833	10,578	14,347	15,956	15,956
Reserves & Surplus, Prior Period	-	172	483	959	954	1,216	3,177	5,728	6,473
Reserves & Surplus, Current Period	172	291	496	(5)	261	1,962	2,547	2,746	2,171
TOTAL NET WORTH	920	1,836	3,398	5,165	8,882	14,589	20,905	25,563	27,433
TOTAL LIABILITIES & NET WORTH	19,768	12,591	19,627	14,059	36,713	48,217	58,683	61,807	62,955
Working Capital	2,027	2,271	1,783	164	943	4,188	8,025	11,650	14,628
Current Ratio	1.14	1.35	1.13	1.03	1.04	1.14	1.23	1.34	1.41

* Adjusted by MASI from PMB Statements

TABLE 22

PADDY MARKETING BOARD
SOURCES AND APPLICATIONS OF FUNDS STATEMENT
Projected 1976 — 1980 (Thousands of Dollars) 4

	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
<u>SOURCES:</u>					
Equity Capital					
Issued	—	—	—	—	—
Grants	3,456	3,745	3,769	1,608	—
Loan Capital; long-term	—	—	—	—	—
Operating Income	<u>2,402</u>	<u>7,234</u>	<u>9,025</u>	<u>9,983</u>	<u>10,818</u>
<u>TOTAL SOURCES</u>	<u>5,858</u>	<u>10,979</u>	<u>12,794</u>	<u>11,591</u>	<u>10,818</u>
 <u>APPLICATIONS:</u>					
Capital Investment					
USAID Loan Origin					
(Foreign Exchange					
Eqpt.)	1,415	1,627	1,466	83	—
Other Origin	2,035	1,617	2,003	1,442	167
Stock Shortages	335	357	382	388	409
Taxes (60%)	392	2,943	3,821	4,123	4,506
Interest	902	1,190	1,285	1,512	1,610
Loan Repayments	—	—	—	417	417
<u>TOTAL APPLICATIONS</u>	<u>5,079</u>	<u>7,734</u>	<u>8,957</u>	<u>7,966</u>	<u>8,774</u>
 Increase in Working					
Capital	779	3,245	3,837	3,625	2,044
 Cumulative Working					
Capital	943	4,188	8,025	11,650	14,528

TABLE 23

COMPARATIVE FINANCIAL CHANGES ANNUALLY FOR THE PADDY MARKETING BOARD IN ACTUAL

1972 - 74, ESTIMATED 1975, AND PROJECTED 1976 - 80

	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>Average</u>
Revenue divided by Fixed Assets	20.5	21.6	22.3	10.5	16.6	18.8	15.8	17.3	20.2	18.2
Operating Income as a % of Fixed Assets and Working Capital	24.2	51.9	49.8	10.0	20.3	41.2	37.8	35.9	36.6	34.2
Net Income before taxes as a % of Revenue	0.7	2.5	2.3	0.0	0.4	2.0	2.6	2.5	2.5	1.7
Net Income before taxes as a % of Fixed Assets	13.9	53.0	51.5	0.0	6.0	36.7	40.2	42.5	50.0	32.6
Net Income after taxes as a % of Fixed Assets	5.2	21.2	20.1	0.0	2.4	14.7	16.1	17.0	20.0	13.0
Net Income before taxes as a % of Fixed Assets + Working Capital	8.6	33.3	37.1	0.0	5.5	28.0	26.7	24.7	25.4	21.0
Net Income after taxes as a % of Fixed Assets + Working Capital	3.2	13.3	14.4	0.0	2.2	11.2	10.7	9.9	10.2	8.3

PMB/AID Development Proposal

BASIC UNIT COST DATA(Note: All exchange rate taken as
as 12.7 Rs/US\$)I. Paddy Purchase Program

1. Paddy Cleaners: Requirements of 3481 total units include 2730 paddy purchase centers with MPCS and 450 new APC purchase centers and 170 store locations plus 131 spare units. The estimated cost (from prototypes already built in the country based on imported design) is Rs. 8564 plus 5% contingencies for a total of Rs. 8992. This would include 40% foreign cost for motor or engine, perforated sheets, v. belts, bearings. The remaining 60% local cost includes steel from State Steel Corporation and manufacturing cost.

In summary:

	Percent		Cost		
	LC	FC	LC	FC	TC
Rs.	60	40	5398	3594	8992
\$			425	283	708

2. Moisture Meters: are required at 3180 purchase centers (2730 present centers plus 450 APC's), 170 store locations, 13 regional laboratories, 70 Food Commission supply stations, 11 new storage and processing complexes, and 323 spares for a total of 3767 less 750 new on hand, or an addition of 3017 units. The estimate cost is Rs.1930 or \$ 152 including 5% contingencies, of which 80% is foreign cost and 20% is local cost.

In summary:

	Percent		Cost		
	LC	FC	LC	FC	TC
Rs.	20	80	380	1550	1930
			30	122	152

3. Dryers: With 236,030 tons of storage capacity in 307 stores (excluding the new complexes) this is an average of 769 tons per store. Considering this 769 tons of paddy would be received in 40 days, or an average of 20 tons per day at each store would be received. A 2 ton batch dryer can dry 2 tons of paddy in 6 hours including the time taken for loading and unloading the dryer. This means 4 batches or 8 tons could be dried in 24 hours.

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The 20 tons per day received then would require 2.5 dryers at each store to handle the drying requirements. Due to the varied climatic conditions in the country it is estimated that 247 stores would require 3 dryers each, and 60 stores would require 2 dryers each for a total of 861 plus 5% for spares or 904 dryers.

The estimated cost of each dryer is Rs. 6450 or US\$ 508 of which 70% is local cost, and 30% is imported cost for motors or engines, perforated sheets and bearings:

In summary:

Percent		Cost			
	LC	FC	LC	FC	TC
Rs.	70	30	4508	1942	6450
			355	153	508

II. Storage

This section consists of rectangular type reinforced concrete construction for civil works, with mechanical handling equipment, scalpor cleaners, dryers, aeration equipment and temperature detection system in the storage. From recent designs and tenders (from private contractors) received in the country the cost is: For 5000 tons civil works = Rs.1,335,000 or Rs.267/ton of storage
For 5000 tons mechanical works = Rs.1,205,000 or Rs. 241/ton of storage.

Basic Cost Data: Storage (including 5000 tons of bin storage, receiving bins, cleaners, dryers, aeration and conveying equipment):

	Percent		Rs. COST		
	LC	FC	LC	FC	Total
1.Civil Works					
a.site development	-	-	65,000	-	65,000
b.dump pit & shed	-	-	36,000	-	36,000
c.receiving & tempering bins	-	-	200,000	24,000	224,000
d.storage bins	-	-	900,500	109,500	1,010,000
sub-total	90	10	1,201,500	133,500	1,335,000
2.Machinery					
a.receiving,cleaning section	-	-	225,000	50,000	275,000
b.drying section	-	-	290,000	60,000	350,000
c.aeration & conveying for storage	-	-	315,000	70,000	385,000
d.weigh bridge	-	-	25,000	50,000	75,000
e.electricals	-	-	100,000	20,000	120,000
sub-total	80	20	955,000	250,000	1,205,000
			2 156 500	383 500	2 540 000

Therefore this amounts to:

	Percent		Storage Cost per ton \$		
	LC	FC	LC	FC	Total
Civil Works	90	10	18.9	2.1	21
Mechanical Works	80	20	<u>15.2</u>	<u>3.8</u>	<u>19</u>
			34.1	5.9	40

The additional storage requirement of approximately 40,000 tons for the country is based on an analysis, where the target of paddy production for 1980 is taken as 1.88 M tons and of this M tons is expected to be purchased by PMB.

A district analysis is carried out as illustrated in appendix . The monthly purchase of the district total is calculated on a percent of the total, where the monthly % is arrived as an average of what was purchased monthly over the last 7 years.

Next, the total district paddy purchase is divided by 12 in order to determine the monthly milling, for a regulated milling. This provides not only a regulated monthly rice output, but also minimises the rice storage requirements. Then a monthly balance for storage is taken as the balance from the previous month, plus purchases for the month, less milling during the month.

Completing such an analysis, yields a clear picture of not only the storage requirements, but also the milling status (requirements or surplus) per district.

III. Paddy Processing Plant (this includes rice mills, the parboiling and drying plant, and the civil works for each):

	Percent		US\$		
	LC	FC	LC	FC	TC
1. Civil Works:					
a. site development & water supply			9,166	-	9,166
b. rice mill building			11,000	2,750	13,750
c. rice store			13,750	-	13,750
d. boiler house & husk bin			2,750	-	2,750
e. contingencies			3,667	250	3,917
sub total	93	7	40,333	3,000	43,333 (Rs.0.55M)
2. Milling:					
a. rice milling machinery			11,000	44,000	55,000
b. laboratory & shop equipment			550	2,200	2,750
c. contingencies			1,130	4,620	5,750
sub total	20	80	12,680	50,820	63,500 (Rs.0.806M)
3. Parboiling:					
a. parboil & drying plant			47,666	11,916	59,582
b. boiler & heat exchanger			14,666	58,667	73,333
c. electricals			3,116	3,529	6,645
d. contingencies			6,510	7,513	14,023
sub total	47	53	71,958	81,625	153,583 (Rs.1.95M)
4. Total:			124,971	135,445	260,416 (Rs.3.307M)

The number of processing plants required is explained in another section of this paper. An explanation of the analysis to determine milling requirements per district is presented in the previous section on storage requirements.

PMB BUDGET FOR 1976 FOR
Rice Processing Development Center

1. Salaries of staff*	Rs. 302,000.00
2. Board's share of Provident Fund	30,000.00
3. Travelling expenses	15,000.00
4. Rent, rates and taxes	10,000.00
5. Maintenance of buildings and grounds	80,000.00
6. Printing and stationery	12,000.00
7. Consumables for research	22,000.00
8. Newspapers and periodicals	12,000.00
9. Running expenses of hostel & kitchen facilities	<u>15,000.00</u>
Sub-Total	498,000.00
10. Electricity	3,000.00
11. Fuel and Lubricants	2,000.00
12. Maintenance of Machinery	2,000.00
13. Bagging and handling	<u>5,000.00</u>
Sub-Total	<u>12,000.00</u>
Total Expenditure	<u><u>510,000.00</u></u>

*Staff consists of 1 Manager, 1 Rice Mills Engineer, 1 Storage Engineer, 2 Research Officers, 2 Technicals Assistants, 3 Laboratory Assistants, 1 Administrative Assistant, 1 Draughtsman, 2 mill technicians, 3 workshop technicians, 2 clerks, 2 typists, 1 steward, 3 hostel staff, 4 watchers, 2 drivers, 2 mechanics and 5 labourers.

PMB
May 5, 1976
:jc

OPERATING COST OF PROCUREMENT PROGRAM
(Thousands of Dollars)

	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
1. Depreciation:				
a) Moisture Meters @ 20%	-	103	103	103
b) Cleaners @ 7.5%	-	29	77	125
c) Dryers @ 7.5%	-	13	14	15
Total	-	145	194	243
2. Interest	-	107	228	417
3. Repairs & Maintenance ^{1/}				
a) Moisture Meters	-	5	5	5
b) Cleaners	-	7	19	31
c) Dryers	-	6	6	7
4. Fuel & Lubricants				
a) Cleaners ^{2/}	-	8	27	55
b) Dryers ^{3/}	-	2	5	7
5. Labour Costs				
a) Cleaners	-	26	88	181
b) Dryers	-	16	32	47
 TOTAL OPERATING COST	 -	 225	 604	 993

1/ 0.25 of annual depreciation for moisture meters, 0.45 of annual depreciation for dryers and cleaners. Based on studies of Faculty of Agriculture, University of Sri Lanka, 1968.

2/ Assuming 400 hours of work per year.

3/ Assuming 200 hours of work per year.

TABLE 24
EXPECTED BENEFITS TO SRI LANKA
(US\$ '000)

	2nd Year (1978) ^{2/} Rice Saved				3rd Year (1979) Rice Saved				4th Year (1980) Rice Saved				5th Year (1981) Rice Saved				Year when self-sufficiency is reached Rice Saved			
	Value	Value	Tons	Total Value	Value	Value	Tons	Total Value	Value	Value	Tons	Total Value	Value	Value	Tons	Total Value	Value	Value	Tons	Total Value
I. Paddy Purchase Program:																				
1. Moisture Savings (2% of purchase)	169	-	-	169	758	-	-	758	1,220	-	-	1,220	1,872	-	-	1,872	2,209	-	-	2,209
2. Dockage Savings (3% of purchases)	254	-	-	254	1,138	-	-	1,138	1,831	-	-	1,831	2,809	-	-	2,809	3,314	-	-	3,314
3. Transportation Savings (3%)	4	-	-	4	20	-	-	20	33	-	-	33	54	-	-	54	57	-	-	57
4. SUB-TOTAL	427	-	-	427	1,916	-	-	1,916	3,084	-	-	3,084	4,735	-	-	4,735	5,580	-	-	5,580
II. Storage & Milling Program:																				
1. Operation Cost Savings ^{1/}	-	-	-	-	231	-	-	231	694	-	-	694	992	-	-	992	992	-	-	992
2. Rice Tons Addition ^{2/}	-	-	-	-	-	80	403	80	-	189	954	189	-	243	1,227	243	-	243	1,227	243
3. SUB-TOTAL	-	-	-	-	231	80	403	311	694	189	954	883	992	243	1,227	1,235	992	243	1,227	1,235
III. Consumer Reprocessing^{3/}																				
1. Cost of Reprocessing ^{4/}	-	-	-	-	101	-	-	101	336	-	-	336	433	-	-	433	437	-	-	437
2. Rice Tons Addition	-	-	-	-	-	341	1,718	341	-	1,135	5,725	1,135	-	1,622	8,179	1,622	-	1,622	8,179	1,622
3. SUB-TOTAL	-	-	-	-	101	341	1,718	442	336	1,135	5,725	1,471	433	1,622	8,179	2,055	437	1,622	8,179	2,059
TOTALS	427	-	-	427	2,248	421	2,121	2,669	4,116	1,324	6,679	5,438	6,160	1,865	9,406	8,025	7,009	1,865	9,406	8,874

^{1/} Operation cost difference for each 9600 tons of paddy (effective capacity of each complex) is expected to be \$110 thousand/complex.

^{2/} No savings from program in 1st year 1977, therefore savings begin 1978 or in 2nd year of program.

^{3/} Only rice produced in new mills is used in this calculation. Consumer savings are calculated as 12% of rice produced in new complexes @ \$198 per ton. (turnover price to Food Commissioner) less than present import price.

^{4/} \$.003 per lb. rice = \$7.06 per ton (MASI Report page 212)

Explanatory Notes - Table on Benefits to Sri Lanka

Million US\$

Year	Expected Purchase Paddy	Expected Cost of Paddy	Expected Cost of Transport	3% Savings of Transport Cost
1977	0.595	75	1.18	.035
1978	0.670	85	1.39	.042
1979	0.749	95	1.63	.049
1980	0.804	101	1.85	.055
1981	0.822	104	1.98	.059
*2/	0.970	123	2.13	.064

1/ Cost per ton is US\$126/= (Rs.33/bu) as present price

2/ Expected purchases when production reaches 2.259M tons per year or self-sufficiency level.

As programs are completed and put into operation, % of total operation is shown as:

	Paddy Purchase Program	Storage milling Program	Consumer Reprocessing Program	Complex	
				No. in Operation	Maximum Potential Savings \$
1978	10%	-	-	-	-
1979	40%	70%	70%	3	.331
1980	60%	90%	90%	7	.772
1981	90%	90%	90%	10	1.102
	90%	90%	90%	10	1.102

Price rice - turnover to F.C. (1976) \$198.35/ton parboil

\$195.62/ton raw

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ANNEX 4

Loan Implementation

ANNEX 4 No. 1

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Project Title & Number: Paddy Storage and Processing

Life of Project:
From FY 76 to FY 81
Total US Funding \$5.4 million
Date Prepared: May 31, 1976

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATOR	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program or Sector Goal: The broader objective to which this project contributes:	Measures of Goal Achievement:		Assumptions for achieving goal targets:
Self-sufficiency in food production.	Imported rice as a percent of domestic production decreases or increases more slowly than population growth.	Records of domestic rice production and rice imports as well as population statistics.	<ol style="list-style-type: none"> 1. Rice will continue to be preferred grain crop. 2. Price relationships will not inhibit production. 3. Seed, pesticide and fertilizer will continue to be available at or in excess of current levels. 4. Normal rainfall.
Project Purpose:	Conditions that will indicate purpose has been achieved: End of project status. December 1980		Assumptions for achieving purpose:
<ol style="list-style-type: none"> 1. Increase the efficiency of paddy procurement, storage and processing. 2. Increase storage and milling capacity. 	<ol style="list-style-type: none"> 1. Bulk storage exists at 14 stores. 2. PMB storage capacity in tons: 300,039 3. a. Moisture meters used at purchase centers: 3,180 4. b. Moisture meters used at PMB stores: 321 c. Dryers at PMB stores: 307 d. Cleaners at purchase centers: 3,180 e. Cleaners at PMB stores: 184 f. Paddy stored at 14% moisture content. 4. a. PMB milling capacity - tons per year: 244,050 b. PMB parboiling capacity - tons per year: 202,159 	<ol style="list-style-type: none"> 1. Observation, PMB records. 2. PMB records. 3. Observation, PMB records, testing at stores. 4. PMB records. 5. PMB records. 6. PMB survey, mill licensing records. 7. PMB survey, mill licensing records. 8. PMB records. 9. PMB Training Center records. 10. PMB records, consumer survey 11. PMB records 12. PMB records. 	Assumptions are the same as those for achieving project outputs.

¹Estimated to require 1.537 million mt of Rice in 1980.

ANNEX

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK (con't)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATOR	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Purpose:	<p>Conditions that will indicate purpose has been achieved: End of project status. December 1980</p> <p>5. a. Outturn of PMB Mills is 71% when parboiling is used. b. Outturn of PMB Mills is 69% when raw rice is produced.</p> <p>6. Quota Miller Capacity: 546,436 TPY</p> <p>7. Other private miller capacity: 1,075,569 TPY</p> <p>8. a. Outturn of Quota Millers is 71% when parboiling is used. b. Outturn of Quota Millers is 69% when raw rice is produced.</p> <p>9. Private millers received training: 218</p> <p>10. Financial losses in operation: (%) a. Moisture content: 0.5 b. Dockage: 1.3</p> <p>11. Physical (Rice) losses: (%) a. Physical in storage: 0.5 b. Milling and Parboiling: 0.5 c. Consumer re-processing of production from project mills: 0% (a saving to consumers of \$433,000/yr. equivalent)</p> <p>12. PMB operation cost, transport, handling commission, interest, salaries, storage and milling, maintenance and depreciation Rs/ton of parboiled rice: 2,445</p>		

ANNEX

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK (con't)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATOR	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Outputs:	Magnitude of Outputs:		Assumptions for Achieving project outputs:
<ol style="list-style-type: none"> 1. a. Testing and cleaning of rice at procurement centers. b. Drying at PMB stores. 2. Storage by bulk rather than bag: additional storage capacity. 3. New Mills in public sector. 4. Modernized mills in private sector. 5. PMB organized and staffed to carry out its functions. 6. A portion of private millers have been trained in modern milling. 7. Private miller have access to mill components. 	<ol style="list-style-type: none"> 1. a. Moisture meters and dryers are installed and in use in 3,180 procurement centers. b. Stored rice has moisture content of 14%. c. Payment to farmers made for clean paddy tested for moisture level. 2. Eight new stores use bulk storage for storing 40,000 tons paddy. 3. Ten new AID-funded 2 TPH mills are operated by PMB. 4. An as yet to be determined number of mills have been or are being modernized by private millers. 5. A PMB which is organized and staffed according to plan in Annex TA 13. 6. At least 218 private millers have received training in-country under PMB auspices. 7. PMB is providing equipment to millers in response to requests or millers are ordering previously unavailable items from domestic manufacturers. (Quantities and specific items cannot be determined at this time). 	<ol style="list-style-type: none"> 1. a. PMB reports based on periodic field inspection. b. PMB reports based on periodic field inspection. c. Schedule of prices, observation. 2. PMB reports based on field observation and PMB installation records, observation. 3. Observation. 4. Observation, analysis of equipment orders. 5. PMB staffing paper. 6. PMB training records. 7. PMB records. 	<ol style="list-style-type: none"> 1. Paddy production will equal or exceed 1,880,455 tons/year by 1980 assuring sufficient input for both public and private sector milling capacity. 2. The GSL will continue to maintain a ration system - the primary reason for PMB's existence. 3. The GSL will not institute policies which would be a disincentive to private milling such as nationalizing all mills or encouraging PMB expansion equal or greater than planned production increases. 4. The GSL guaranteed price for paddy will be high enough to enable PMB procurement at the levels indicated in ANNEX TA 18.

ANNEX _____

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK (cont)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATOR	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Inputs:	Implementation Target (Type and Quantity) (\$ 000, Rs. 000,000)		Assumptions for providing inputs: Beginning of Project Status Conditions January 1977
1. Imported components for paddy grading, cleaning, conveying, milling and parboiling equipment.	\$ 3739	1. AID Disbursement Records	1. Bulk storage exist at 6 stores:
2. Domestically fabricated storage and milling components.	Rs. 52.7	2. PMB/GSL disbursement record and tenders.	2. PMB storage capacity in tons: 260,039
3. Contracts for civil works - construction and improvement of mill and storage buildings.	Rs. 17	3. PMB/GSL disbursement records, tenders, contracts.	3. a. Moisture meters used at purchase centers: 392
4. Contract for technical assistance in areas of mill construction and operation, field operations, private mill development, management operations, equipment manufacture.	\$ 751 RS. 1.3	4. AID and PMB/GSL disbursement records, contract.	b. Moisture meters used at PMB stores: 313
5. Financing for private miller development.	\$ 832	5. To be determined.	c. Dryers at PMB stores: 6
6. In-country training for new PMB staff and 200 private millers.	Rs n/a	6. PMB course completion records.	d. Cleaners at purchase centers: -
Total:	\$5,322		e. Cleaners at PMB stores: 6
Total:	Rs 71. @ Rs 12.7 = \$1.00, = \$5,591		f. Paddy stored at % moisture content: 18%.
			4. a. PMB milling capacity - tons per year: 148,050.
			b. PMB parboiling capacity - tons per year: 106,159
			5. a. Outturn of PMB mills is 67% when parboiling is used.
			b. Outturn of PMB mills is 65% when raw rice is produced.
			6. Quota Miller Capacity: 446,680.TPY.
			7. Other private miller capacity: 1,065,603. TPY
			8. a. Outturn of Quota Millers is 67% when parboiling is used.
			b. Outturn of Quota Millers is 67% when raw rice is produced.
			9. Private millers received training: 18.

ANNEX

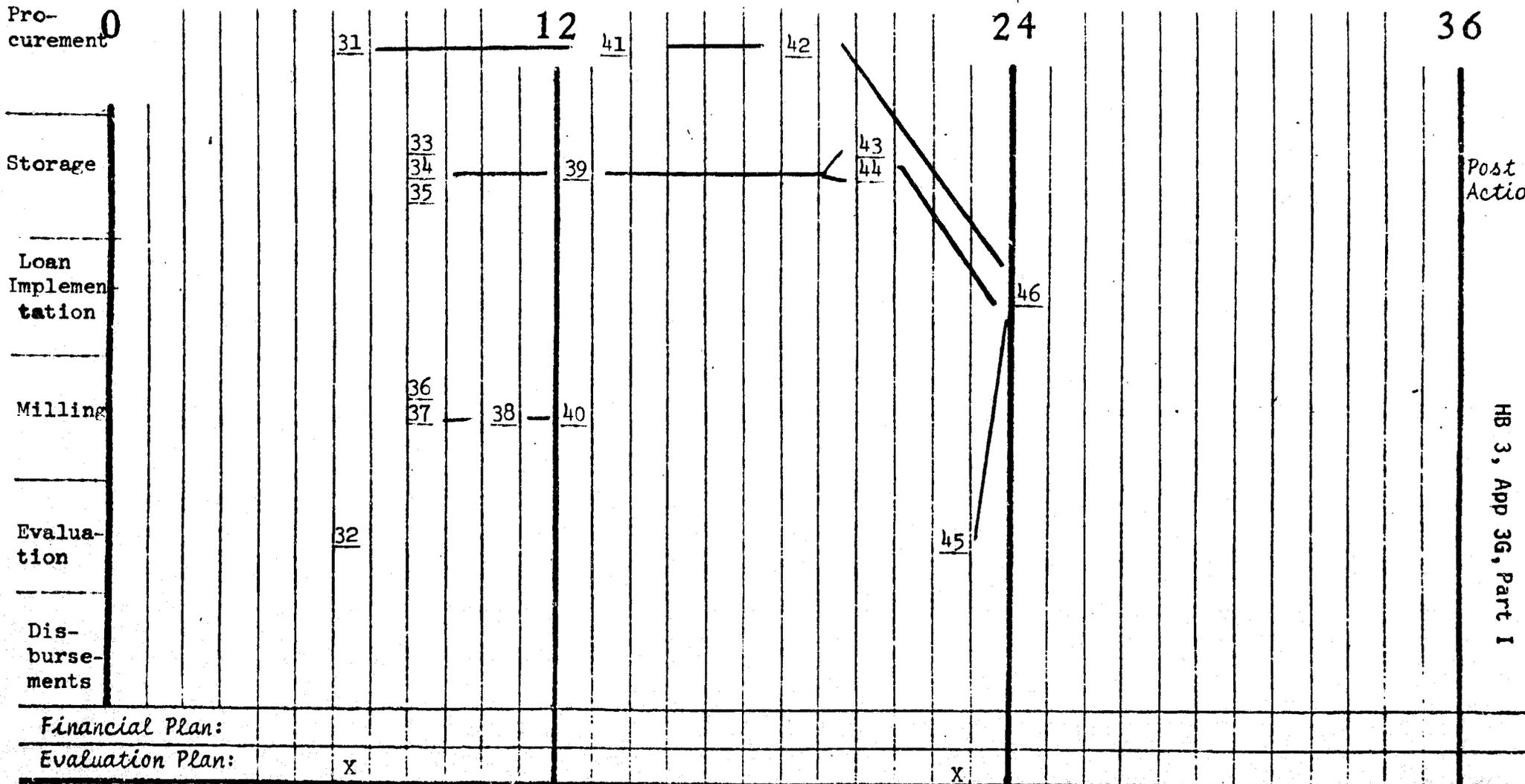
PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATOR	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
			<p>Assumptions for providing inputs: Beginning of Project Status Conditions January 1977</p> <p>10. Financial Losses in operation a. Moisture content: 2.5 b. Dockage: 4.3</p> <p>11. Physical (Rice Losses)% a. Physical in storage: 2.1 b. Milling and Parboiling: 2.5 c. Consumer re-processing: 12</p> <p>12. PMB operation cost, transport, handling commission, interest, salaries, storage and milling, maintenance and depreciation. Rs/t of parboiled rice: 2,579.</p>

PPT RM
(May be Expanded as Appropriate)

Country: Sri Lanka	Project No: 383-T-017	Project Title: Paddy Storage and Processing	Date: 6/9/76	/ X / Original / / Revision #	PPT appn
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or FY: CY	/ 1979 /			1980						/ 1981 /											
Month:	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun



Project Performance Tracking System

<u>Critical Event</u>	<u>Date</u>
1. Sign Loan Agreement	10/76
2. Issue RFP T.A. Contract	11/76
3. Award Contract 3 mill buildings	1/77
4. Begin Pilot Project Procurement	3/77
5. T.A. Project Coordinator on Site	3/77
6. Order Equipment for 3 mills	5/77
7. Yearly Evaluation	10/77
8. Award Storage Construction Contract (3 bldgs)	12/77
9. Complete 3 mill bldgs.	12/77
10. Train mill operators	12/77
11. Evaluate pilot project	1/78
12. Award Contract 3 mill bldgs.	1/78
13. Install mill equipment 3 mills	2/78
14. Issue Tenders for Storage Equipment (3 bldgs)	4/78
15. Begin operations 3 mills	4/78
16. Order equipment 1st phase procurement	5/78
17. Order equipment 3 mills	5/78
18. Implement Phase 1 procurement	10/78
19. Major Evaluation	10/78
20. Complete construction 3 storage units	12/78
21. Train Storage operators	12/78
22. Award Storage Contract 3 bldgs	12/78
23. Complete 3 mill bldgs.	12/78
24. Train mill operators	12/78
25. Award contract 4 mill bldgs.	1/79
26. Install equipment 3 mills	2/79
27. Issue tenders storage equipment	4/79
28. Begins operation 3 mills	4/79
29. Order 2nd phase procurement equipment	5/79
30. Order equipment 4 mills	5/79
31. Begin implement procurement phase 2	10/79
32. Yearly evaluation	10/79
33. Complete construction 3 storage units	12/79
34. Train storage operators	12/79
35. Award storage contract 2 bldgs.	12/79
36. Complete 4 mill bldgs.	12/79
37. Train operators 4 mills	12/79
38. Install mill equipment 4 mills	2/80
39. Issue tenders storage equipment 2 bldgs.	4/80
40. Begin operations 4 mills	4/80
41. Order 3rd phase procurement equipment	5/80
42. Begin implement phase 3 procurement	10/80
43. Complete construction 2 storage bldgs.	12/80
44. Train storage operators	12/80
45. Final evaluation	2/81
46. Project ends	4/81



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E.O. 11652: N/A

TAGS:

SUBJECT: FY 76 PROPOSED LOANS

1. NESA ADVISORY COMMITTEE REVIEWED AND APPROVED PRP'S ON EPPAWALA DEVELOPMENT (MAHAWELI H-4 BLOCK) AND RICE STORAGE AND PROCESSING (PMB PROPOSAL) ON APRIL 2. COMMITTEE DISCUSSED NUMBER OF ISSUES RELATING TO EACH PROJECT WHICH WILL HAVE TO BE ADDRESSED IN THE COURSE OF PROJECT DEVELOPMENT AND PREPARATION OF PROJECT PAPER. SEPTTEL WILL DISCUSS ISSUES FOR MISSION CONSIDERATION/COMMENT AND IDENTIFY NEXT STEPS IN PROJECT DEVELOPMENT.

2. PROJECT COMMITTEES PREPARING SCOPES OF WORK FOR ADDITIONAL FIELD WORK NECESSARY BOTH PROJECTS AND INVESTIGATING TOY/CONTRACTOR ASSISTANCE AVAILABLE/REQUIRED FOR PREPARATION PP. WILL ADVISE. REES BRINGING COPIES PRP'S TO PARIS. INGERSOLL

July 136



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E.O. 11652: 1/74
SUBJECT: PROPOSED LOAN FOR RICE STORAGE AND PROCESSING

DURING ASEA ADVISORY MEETING ON SUBJECT PRP, NUMBER OF QUESTIONS/ISSUES WERE RAISED REQUIRING FURTHER INVESTIGATION PRIOR TO AND IN CONJUNCTION WITH PREPARATION OF PP. QUESTIONS/ISSUES RELATE TO ASSISTANCE TO BOTH PRIVATE MILLS AND PNB AND ARE IDENTIFIED BELOW:

A. PADDY WAREHOUSE BOARD (PMB) -- NEED ASSESSMENT OF MANAGEMENT CAPABILITY OF THE PMB TO CARRY OUT THE PROPOSED PROJECT. WILL FORD FOUNDATION CONTINUE TO PROVIDE TECHNICAL ASSISTANCE, OR IS ADDITIONAL TECHNICAL ASSISTANCE NECESSARY?

B. PNB FACILITIES -- WILL THE SIZE MILLS PROPOSED (2TPH) PROVIDE SUFFICIENT ECONOMIES OF SCALE TO JUSTIFY CONSTRUCTION OR IS CONSTRUCTION BEING JUSTIFIED ON OTHER BASIS?



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NEED ASSESSMENT DESIGN AND COST ESTIMATES AS TO REASON-
 ABleness. IDENTIFY IMPLEMENTATION PROCEDURES FOR IMPORT-
 ING AND FABRICATING REQUIRED EQUIPMENT, CONSTRUCTING
 FACILITIES, AND OPERATING AND MAINTAINING MILLS, AND
 ANY PROBLEMS IN MEETING CONSTRUCTION SCHEDULE ON A TIMELY
 BASIS.

C. PRIVATE MILLS -- WHAT IS CURRENT STATUS OF PRIVATE
 MILLING SECTOR? WHAT IS OPTIMUM NUMBER AND SIZE OF
 PRIVATE MILLS THAT ANTICIPATED PRODUCTION WILL SUPPORT?
 IF PMB BELIEVES, AS THEY STATE, THAT 200 PRIVATE MILLERS
 ARE NECESSARY, WHAT CRITERIA WILL BE USED TO DETERMINE
 WHICH MILLERS MODERNIZE AND WHICH GO OUT OF BUSINESS?
 IS THE USL PREPARED TO EMBARK ON A PROGRAM WHICH WILL PUT
 UPWARDS OF 500 SMALL MILLERS OUT OF BUSINESS? WHAT LEVEL
 OF INVESTMENT, IMPORTS, DOMESTIC PRODUCTION IS NECESSARY
 TO MODERNIZE PRIVATE SECTOR? NEED TO ASSESS ECONOMIC
 RETURN TO PRIVATE MILLERS NECESSARY TO JUSTIFY THEIR
 INVESTMENT. ASSESS INSTITUTIONAL REQUIREMENTS (ORGANI-
 ZATION, ADMINISTRATIVE, FINANCIAL) NECESSARY FOR PRIVATE
 SECTOR MODERNIZATION. WHAT SOURCES OF CREDIT WILL BE
 AVAILABLE TO THE PRIVATE SECTOR?

D. PRICES -- WE VERY CONCERNED THAT UNDER PRESENT PRICE
 STRUCTURE INCENTIVES ARE INADEQUATE TO STIMULATE INVEST-
 MENT INTEREST IN MODERNIZATION OF PRIVATE SECTOR
 MILLING FACILITIES. THEREFORE, NEED ASSESSMENT OF EXIST-
 ING PRICE RELATIONSHIPS BETWEEN MILLERS, FARMERS, AND
 CONSUMERS TO DETERMINE WHETHER CURRENT PRICES ADEQUATE
 INVENTIVE TO (1) INVESTMENT IN MODERNIZATION, AND (2)
 INCREASED PRODUCTION. HOW CAN PROJECT BE DESIGNED TO
 ACCOMPLISH THESE OBJECTIVES?

E. IN ORDER TO PROVIDE IN-DEPTH ASSESSMENT OF SUBJECT
 PROJECT, INCLUDING QUESTIONS POSED ABOVE, LEADING TO
 PREPARATION OF PROJECT PAPER, AID PLANS TO ENGAGE IQC
 CONTRACTOR. WE CURRENTLY ARE PREPARING DETAILED SCOPE OF
 WORK FOR THE CONTRACTOR AND HOPE TO START DISCUSSIONS
 WITH THE CONTRACTOR DURING NEXT FEW WEEKS. IN MEANTIME,
 WOULD APPRECIATE ANY MISSION SUGGESTIONS RE ISSUES/
 QUESTIONS NOTED AND ABOVE, OR SUGGESTIONS FOR INCLUSION

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IN SCOPE OF WORK. WILL ADVISE POSSIBLE TIMING IQC
CONTRACTOR VISIT FOLLOWING DISCUSSIONS. DOES AID REP
HAVE PREFERENCE RE TIMING SUCH VISIT? KISSINGER

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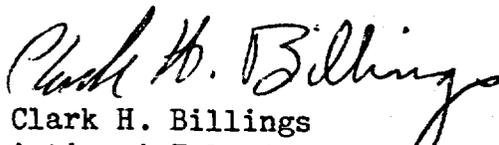
UNITED STATES OF AMERICA
AGENCY FOR INTERNATIONAL DEVELOPMENT

c/o American Embassy, Colombo Sri Lanka

Certification Pursuant to Section 611(e) of the
Foreign Assistance Act of 1961, as amended

I, Clark H. Billings, the acting principal officer of the Agency for International Development in Sri Lanka, having taken into account, among other things, the capacity of the Sri Lanka Government and its agencies to properly utilize the paddy procurement, milling, and storage equipment being funded by this loan, as well as the technical assistance to be contracted, do hereby certify that in my judgment Sri Lanka has both the financial capability and the human resources capability to effectively utilize these inputs.

This judgment is based upon the project analysis as detailed in the Sri Lanka Paddy Storage and Processing Project Paper and is subject to the conditions imposed therein.


Clark H. Billings
Acting A.I.D. Representative

May 7, 1976

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My No.
Your No.

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EXTERNAL RESOURCES DIVISION

Ministry of Planning & Economic Affairs

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Ceylince House (2nd Floor)

අ. ප. 277, කොළඹ 1
P. O. Box 277, Colombo 1

7 February, 1975.

Dear Mr. Ranjith,

U.S. Aid for Faddy Marketing Board's Development Programme

Please refer to your letter dated January 15, 1975. I am sending herewith a copy of the project document titled "Draft Proposal for Aid Consideration to assist the Faddy Marketing Board's development Programme".

I shall be grateful if this project is considered for financing under U.S. Assistance.

Yours sincerely,

M.A. Mohamed
Deputy Director,
External Resources.

Mr. Ranjith,
U.S. Representative,
Colombo.

31/17.

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

A.I.D. Loan No.

(Draft)
CAPITAL ASSISTANCE LOAN AUTHORIZATION

Provided from: Food and Nutrition
(Sri Lanka: Paddy Storage and Processing)

Pursuant to the authority vested in me as Assistant Administrator, Bureau for Asia, Agency for International Development ("A.I.D."), by the Foreign Assistance Act of 1961, as amended, (the "Act") and the Delegations of Authority issued thereunder, I hereby authorize the establishment of a loan pursuant to Part I, Chapter I, Section 103 and Chapter 2, Title I, the Development Loan Fund, to the Government of Sri Lanka ("Borrower") of not to exceed Five Million, Four Hundred Thousand Dollars (\$5,400,000). The proceeds of this loan will be used to finance the foreign exchange costs of commodities and technical assistance to aid in the improvement and expansion of the processing and storage of paddy.

1. Interest Rate and Terms of Repayment

The Borrower shall repay the loan to A.I.D. in United States dollars within forty (40) years after the date of first disbursement under the loan, including a grace period of not to exceed ten (10)

years. The Borrower shall pay to A.I.D. in United States dollars interest from the date of first disbursement at the rate of (a) two percent (2%) per annum during the grace period, and (b) three percent (3%) per annum thereafter, on the outstanding disbursed balance of the loan and on any due and unpaid interest accrued thereon.

2. Other Terms and Conditions

A. Unless A.I.D. otherwise agrees in writing,

(a) Goods and services financed under the loan shall have their source and origin in countries included in A.I.D. Geographic Code 941.

(b) The loan agreement shall provide that, prior to the first disbursement of loan proceeds, the Borrower shall submit, or cause to be submitted, the following in form and substance satisfactory to A.I.D.:

(1) An implementation plan for the use of funds designated for assistance to private millers.

(2) Evidence of the availability for use on the project of local currency sufficient for at least one year's anticipated expenditure for local costs.

(3) Evidence of the appointment of a project manager with adequate authority to exercise effective responsibility for day to day project operations.

(c) The loan agreement shall contain the following special covenants by the Borrower.

(1) The Borrower covenants not to concentrate rice processing in the public sector nor promulgate policies designed to do so.

(2) The Borrower covenants to conduct a performance evaluation on a yearly basis beginning one year after the signing of the Loan Agreement until project completion, together with AID, to review a) progress toward achieving project outputs as scheduled; b) progress toward achieving end of project conditions; c) problems arising during implementation; d) any additional topic requested by PMB or AID. The Borrower undertakes to carry out any recommendations arising from this review.

(3) The Borrower covenants to conduct an evaluation approximately two years after the signing of the Loan Agreement as well as approximately three months prior to the terminal disbursement date of the loan which will include representatives of AID, PMB, the Ministry of Agriculture, the Food Commission, private millers, farmers' groups, and procurement centers which will determine whether a) the project continues to contribute toward the goal of increasing self-sufficiency in food production; b) assumptions remain valid; c) the implementation of the program for private millers is in fact assisting them in modernizing; d) the procurement program is accepted by farmers and what effect it has on them; e) the procurement price should be modified; f) the milling hire rate should be modified; g) any additional topic requested by the participants.

The Borrower undertakes to carry out recommendations arising from such evaluations.

(d) The loan agreement shall contain such other terms and conditions as A.I.D. may deem advisable.

Assistant Administrator
Bureau for Asia

Date

ANNEX 4 No. 8

CHECKLIST OF STATUTORY CRITERIA¹BASIC AUTHORITY

FAA Sections 103, 104, 105, 106,
and 107. Is Loan being made

- | | |
|---|--|
| (a) for agriculture, rural development or nutrition; | The loan is being made to help Sri Lanka improve procurement, storage, and processing of domestic paddy production. It will contribute directly to increasing food available for domestic consumption. |
| (b) for population planning or health; | Not applicable. |
| (c) for education, public administration; or human resources development; | Not applicable. |
| (d) To solve economic and social development problems in fields such as transportation, power, industry, urban development, and export development; | Not applicable. |
| (e) in support of the general economy of the recipient country or for development programs conducted by private or international organizations. | Not applicable. |

COUNTRY PERFORMANCEProgress Towards Country Goals

2. FAA Sections 201(b) (5), (7) and (8): 208.

- (a) Describe extent to which country is:

¹The following abbreviations are used:

- FAA - Foreign Assistance Act of 1961 as amended
- App - Foreign Assistance and related Appropriations Act, 1975
- MMA - Merchant Marine Act of 1936, as amended
- FAA: 1973 - Foreign Assistance Act of 1973

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

Increased food production is a top priority goal in Sri Lanka's Five-Year Plan (1971-76) for social and economic development. Government resources for production oriented purposes have increased. This project will directly contribute to improving means for food storage and distribution. GSL removed market restrictions on domestic rice trade as a means to provide farmers with greater incentives to produce paddy.

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

Sri Lanka's official policy is to welcome foreign private investment and enterprise and to encourage both foreign and domestic investment. However, certain domestic laws give the Government general authority to determine the areas of the economy in which private enterprise may operate. This has tended to limit foreign investors interest, and has inhibited domestic private enterprise activity. Foreign investment may be enhanced by a foreign investment law now before the Cabinet.

(3) Increasing the public's role in the developmental process.

The GSL has a number of programs reflecting a conscious policy to increase public participation in social and economic development. A national cooperative structure is being expanded improved and strengthened; local level participation in development is encouraged through decentralization of planning and decision-making to local development councils which plan and carry out local development activities.

(4) (a) Allocating available budgetary resources to development.

Sri Lanka's budgetary resources are overwhelmingly committed to the national policy goals of social justice, equity and development.

(b) Diverting such resources for unnecessary military expenditure (See also Item No.20) and intervention in affairs of other free and independent nations. (See also Item No. 11).

Sri Lanka's military expenditures are minimal and limited to domestic security concerns.

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

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

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

(b) Are above factors taken into account in the furnishing of the subject assistance?

Treatment of U.S. Citizens and Firms

3. FAA Section 620(c). If assistance is to government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) debt is not denied or contested by such government?

Sri Lanka has a tradition and history of democratic government with elected representation through a national assembly and associated democratic institutions and freedoms. Social, political and economic reforms consistent with Sri Lanka's democratic orientation and national aims are objectives of the GSL and are being undertaken in the context of domestic political, social and economic needs and in an evolutionary manner. Specifically, land reform is being implemented which limits individual holdings to 50 acres. Tax reforms, contained in the 1976 budget presentation which are in the process of being implemented are expected to provide greater encouragement to private enterprise.

The GSL will contribute all local costs of the project. These local costs constitute more than 50% of total project costs.

The GSL is actively responding to the vital economic, political and social concerns of its people. It has a firm determination to come to grips with the economic problems of the country

Yes.

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The GSL is not known to be in violation of the requirements of this section.

4. FAA Section 620(e)(1). If assistance is to a government, has it (including government agencies or subdivisions) taken any action which has the effect of nationalizing, appropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities?

The GSL is not known to be in violation of the requirements of this section.

5. FAA Section 620(o): Fishermen's Protective Act, Section 5. If country has seized, or imposed any penalty or sanction against, any U.S. fishing activities in international waters,

The GSL has not taken any such action.

(a) has any deduction required by Fisherman's Protective Act been made?

Not applicable.

(b) has complete denial of assistance been considered by A.I.D. Administrator?

Not applicable.

Relations with U.S. Government and Other Nations

6. FAA Section 620(a). Does recipient country furnish assistance to Cuba or fail to take appropriate steps to prevent ships or aircraft under its flag from carrying cargoes to or from Cuba?

We are not aware of any GSL non-compliance with this section.

7. FAA Section 620(b). If assistance is to a government, has the Secretary of State determined that it is not controlled by the international Communist movement?

The Secretary of State has determined that the GSL is not controlled by the International Communist Movement.

8. FAA Section 620(d). If assistance is for any productive enterprise which will compete in the United States with United States enterprise, is there an agreement by the recipient country to prevent export to the United States of more than 20 percent of the enterprise's annual production during the life of the loan? Not applicable.
9. FAA Section 620(f). Is recipient country a Communist country? No.
10. FAA Section 620(i). Is recipient country in any way involved in (a) subversion of, or military oppression against, the United States or any country receiving U.S. assistance, or (b) the planning of such subversion or aggression? (a) No.
(b) No.
11. FAA Section 620(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction, by mob action, of U.S. property? No.
12. FAA Section 620 (l). If the country has failed to institute the investment guaranty program for the specific risks of expropriation, in convertibility or confiscation, has the AID administration within the past year considered denying assistance to such government for this reason? We are not aware of any GSL non-compliance with this section of the Act. An investment guaranty agreement is in effect with the GSL covering specific risks of expropriation, inconvertibility and confiscation.
13. FAA Section 620(n). Does recipient country furnish goods to North Viet-Nam or permit ships or aircraft under its flag to carry cargoes to or from North Viet-Nam? We are not aware of any GSL non-compliance with this section.

14. FAA Section 620 (g). Is the government of the recipient country in default on interest or principal of any AID loan to the country? No.
15. FAA Section 620(t). Has the country severed diplomatic relations with the United States? If so, have they been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption? No.
16. FAA Section 620 (u). What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the A.I.D. Operational Year Budget? The GSL is current in its payment obligations to the U.N. and has never been in arrears on U.N. obligations.
17. FAA Section 481. Has the government of recipient country failed to take adequate steps to prevent narcotic drugs and other controlled substances (as defined by the Comprehensive Drug Abuse Prevention and Control Act of 1970) produced or processed, in whole or in part, in such country, or transported through such country, from being sold illegally within the jurisdiction of such country to U.S. Government personnel or their dependents, or from entering the US. unlawfully? No.
18. FAA, 1973 Section 29. If (a) military base is located in recipient country, and was constructed or is being maintained or operated within funds furnished by U.S. and (b) U.S. personnel carry out military operations from such base, has the President determined that the government of recipient country has authorized regular access to U.S. correspondents to such base? There is no U.S. military base in Sri Lanka.

Military Expenditures

19. FAA Section 620(s). What percentage of country budget is for military expenditures? How much of foreign exchange resources spent on military equipment? How much spent for the purchase of sophisticated weapons systems? (Consideration of these points is to be coordinated with the Bureau for Program and Policy Coordination, Regional Coordinators and Military Assistance).

The Central Bank of Ceylon's updated 1975 estimate indicates that 6.3% of the GSL's national budget is for military expenditures. The precise amount of foreign exchange spent on military equipment is not available although it is known to be very minor. The GSL is not known to have purchased any sophisticated weapons systems.

CONDITIONS OF THE LOAN

General Soundness

20. FAA Section 201 (d). Information and conclusion on reasonableness and legality (under laws of country and the United States) of lending and relending terms of the loan.

Sri Lanka is relatively lesser developed country. The terms of this loan are the minimum rate permitted by U.S. law and are legal rates in Sri Lanka. There is no re-lending.

21. FAA Sections 201 (b)(2); 201 (c).

Information and conclusion on activity's economic and technical soundness. If loan is not made pursuant to a multilateral plan, and the amount of the loan exceeds \$100,000, has country submitted to A.I.D. on application for such funds together with assurance to indicate that funds will be used in an economically and technically sound manner?

Yes.

22. FAA Section 201(b)(2). Information and conclusion on capacity of the country to repay the loan, including reasonableness of repayment prospects.

Foreign debt service payments in 1975 are estimated to be \$134 million (Rs. 1,024 million converted at 7.65 to be \$1) as compared to \$102 million in 1974. (Rs.684 million converted at 6.69 to \$1). The 1975 foreign debt service payment consists of \$113 million (Rs862 million) for repayment of principal and \$21 million (Rs 162 million) for interest payments. The debt service ratio between 1974 & 1975 increased

to 22.9% from 17.8% in 1974. (Source: Central Bank of Ceylon's Annual Report for 1975). Based on the foregoing and upon or expectation that other donors will continue to provide assistance on grant or concessional terms it is concluded that AID's concessional lending terms (i.e. repayment within 40 yrs., including a ten-year grace period on repayment of principal; interest at 2% during the grace period, & 3% thereafter) are justified in Sri Lanka's case. On such terms, the proposed loan will not add significantly to Sri Lanka's debt service burden & the prospects for repayment of the loan are reasonable.

No other U.S. source of finance is available for this loan. Other donors are actively contributing to other projects designed to increase agricultural production.

(a) All plans necessary to carry out the assistance are completed with the exception of an implementation plan for providing assistance to private millers. This plan must be approved by AID prior to initial disbursement of loan funds.

(b) The cost of assistance by the United States is limited to the amount of the loan which is a reasonably firm estimate of the Foreign exchange required for the project.

Legislative action is required to provide financing for local costs as part of the GSL budget process. Availability of local financing sufficient for the first year of the project is a precondition to initial disbursements under the loan. These funds are expected to be available by December 31, 1976.

Yes. See Annex 4 Section 4.

23. FAA Section 201 (b)(1). Information and conclusion on availability of financing from other free-world sources, including private sources within the United States.

24. FAA Section 611 (a)(1). Prior to signing of loan will there be (a) engineering, financial, and other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the United States of the assistance?

25. FAA Section 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of loan?

26. FAA Section 611 (e). If loan is for Capital Assistance, and all U.S. assistance to project now exceeds \$1 million, has Mission Director certified the country's capability effectively to maintain and utilize the project?

Loan's Relations to Achievement of Country and Regional Goals

27. FAA Sections 207:113. Extent to which assistance reflects appropriate emphasis on: (a) encouraging development of democratic, economic, political, and social institutions; (b) self-help in meeting the country's food needs; (c) improving availability of trained manpower in the country; (d) programs designed to meet the country's health needs; (e) other important areas of economic, political, and social development, including industry; free labor unions; cooperatives, and voluntary agencies; transportation and communication; planning and public administration; urban development, and modernization of existing laws; of (f) integrating women into the recipient country's national economy.

The loan will have a direct effect on increasing food available from domestic production and a training component of the project will provide increased trained manpower in the areas of paddy procurement, storage, and processing, including maintenance of equipment. Increased food availabilities are necessary to improve health. Cooperatives that procure paddy under PMB auspices will be better equipped to perform this function. The loan has no direct impact on integrating women into the economy.

28. FAA Section 209. Is project susceptible of execution as part regional project? If so why is project not so executed?

No. The Project is not so susceptible.

29. FAA Section 201 (b)(4). Information and conclusion on activity's relationship to, and consistency with other development activities, and its contribution to realizable long-range objectives.

The loan is fully consistent with Sri Lanka's major objective of increased self-sufficiency in food production and thereby limiting food imports. It is also consistent with U.S. objectives to increase agricultural production. See project paper for additional discussion

30. FAA Section 201 (b)(9). Information and conclusion on whether or not the activity to be financed will contribute to the achievement of self-sustaining growth.

The project will definitely contribute to more efficient marketing of paddy without which self-sustaining growth in production is not possible.

31. FAA Section 209. Information and conclusion whether assistance will encourage regional development programs.

Not applicable. This is not a goal of the loan

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

The loan will assist in developing an efficient marketing system for Sri Lanka's paddy farmers, the vast majority of whom till less than 3 acres. It will provide modern measuring and paddy cleaning equipment to cooperatives which procure the bulk of paddy destined for the ration.

33. FAA Section 201 (f). If this is a project loan, describe how such project will promote the country's economic development taking into account the country's human and the relationship between ultimate objectives of the project and overall economic development.

Increased efficiency in marketing paddy and additional milling and storage capacity are essential to a program of greater self-sufficiency in food production, a major development goal for Sri Lanka. In addition the increased rice that will be available from more efficient processing will directly effect foreign exchange expenditures for food imports allowing these funds to be used for other development efforts.

34. FAA Section 281 (a). Describe extent to which the loan will contribute to the objectives of assuring maximum participation in the task of economic development on the part of the people of the country, through the encouragement of democratic, private, and local governmental institutions.

The project funded arises out of the needs of the consumer for a better quality product, and the farmer for a more efficient marketing system. Direct assistance is planned to modernize private sector mills.

35. FAA Section 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country: utilizes the country's intellectual resources to encourage institutional development; and supports civic education and training in skills required for effective participation in governmental and political processes essential to self-government.

The project directly responds to the needs of consumers and farmers but there is no direct effect on the use of the country's intellectual resources or on civic education and training in skills needed for civic participation.

36. FAA Section 201(b)(3). In what ways does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities?

The project contributes directly toward better use of economic resources and to increased productive capacities.

37. FAA Section 601(a). Information and conclusions whether loan will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture, and commerce; and (f) strengthen free labor unions.

The loan will contribute to decreased imports of food making scarce FX available for other trade; directly contribute to develop the private milling and manufacturing sector; make cooperatives more efficient in paddy procurement; encourage a sharing of rice milling between the public and private sector; directly improve the efficiency of industry, agriculture and commerce; and have no foreseeable effect on labor unions.

38. FAA Section 619. If assistance is for newly independent country: is it furnished through multi-lateral organizations or plans to the maximum extent appropriate?

Not applicable.

Loans Effect on U.S. and AID Program

39. FAA Section 201 (b)(6). Information and conclusion on possible effects of loan on U.S. economy, with special reference to areas of substantial labor surplus, and extent to which U.S. commodities and assistance are furnished in a manner consistent with improving the U.S. balance of payments position.

Procurement will be permitted from U.S. Code 941 countries. It is anticipated that technical assistance will come from a U.S. source as will a substantial amount, though not all of the equipment required.

40. FAA Section 602(a). Total amount of money under loan which is going directly to private enterprise, is going to intermediate credit institutions or other borrowers for use by private enterprise, is being used to finance imports from private sources, or is otherwise being used to finance procurements from private sources.
- The vast majority of loan and host country provided financing will be used for procurement of technical services and equipment from private firms.
41. FAA Section 601 (b). Information and conclusion on how the loan will encourage U.S. private trade and investment abroad and how it will encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprises).
- The loan will finance the FX costs of equipment from Code 941 countries. Some procurement from U.S. sources is anticipated.
42. FAA Section 601 (d). If a capital project, are engineering and professional services of U.S. firms and their affiliates used to the maximum extent consistent with the national interest?
- Yes.
43. FAA Section 602. Information and conclusion whether U.S. small business will participate equitably in the furnishing of goods and services financed by the loan.
- Normal small business notification will be required in the implementation of the loan.
44. FAA Section 620 (h). Will the loan promote or assist the foreign aid projects or activities of the Communist-Bloc countries?
- No.
45. FAA Section 621. If Technical Assistance is financed by the loan, information and conclusion whether such assistance will be furnished to the fullest extent practicable as goods and professional and other services from private enterprise on a contract basis. If the facilities of other Federal agencies
- Technical assistance is expected to be provided only from private firms; however if other institutions submit proposals they will not be barred from an equal opportunity to participate.

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will be utilized, information and conclusion on whether they are competitive with private enterprise, and can be made available without undue interference with domestic programs.

Loan's Compliance with Specific Requirements

46. FAA Sections 110 (a): 208(e).

In what manner has or will the recipient country provide assurances that it will provide at least 25 percent of the costs of the program, project, or activity with respect to which the loan is to be made?

The direct local costs of the project will be financed by the borrower and constitute more than 50% of project cost.

47. FAA Section 660. Will loan be used to finance police training or related program in recipient country?

No.

48. FAA Section 114. Will loan be used to pay for performance of abortion or to motivate or coerce persons to practice abortions?

No.

49. FAA Section 201(b). Is the country among the 20 countries in which development loan funds may be used to make loans in this fiscal year?

Yes.

50. FAA Section 201(d). Is interest rate of loan at least 2 percent per annum during grace period and at least 3 percent per annum thereafter?

Yes, the Loan Agreement shall so provide.

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

Private domestic contractors are expected to perform civil works and construction as well as provide domestically manufactured equipment for the project. Private enterprise will receive assistance under the loan.

52. FAA Section 604(a). Will all commodity procurement financed under the loan be from the United States except as otherwise determined by the President?
- All commodities imported under the loan will be from the U.S. and other A.I.D. Geographic Code 941 countries. unless otherwise agreed to by A.I.D.
53. FAA Section 604(b). What provision is made to prevent financing commodity procurement in bulk at prices higher than adjusted U.S. market price?
- No bulk commodities will be procured.
54. FAA Section 604(d). If the cooperating country discriminates against U.S. marine insurance companies, will loan agreement require that marine insurance be placed in the United States on commodities financed by the loan?
- Yes.
55. FAA Section 604(e). If offshore procurement of agricultural commodity or product is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity?
- Not applicable.
56. FAA Section 604(f). If loan finances a commodity import program, will arrangements be made for supplier certification by A.I.D. and A.I.D. approval of commodity as eligible and suitable.
- Not applicable.
57. FAA Section 608(a). Information on measures to be taken to utilize U.S. Government excess personal property in lieu of the procurement of new items.
- Excess property is not appropriate for this project.

58. FAA Section 611(b): App. Sec. 101. Not applicable.
If loan finances water or water-related land resources construction project or program, is there a benefit-cost computation made, insofar as practicable, in accordance with the procedures set forth in the Memorandum of the President dated May 15, 1962?
59. FAA Section 611(c). If contracts for construction are to be financed, what provision will be made that they be let on a competition basis to maximum extent practicable? Construction contracts are not financed under the loan.
60. FAA Section 612(b): Sec. 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the United States are utilized to meet the cost of contractual and other services. The Government of Sri Lanka will contribute all local costs required by the project.
61. Section 30 and 31 of PL 93-189 (FAA of 1973). Will any part of the loan be used to finance directly or indirectly military or paramilitary operations by the U.S. or by foreign forces in or over Laos, Cambodia, North Vietnam, South Vietnam, or Thailand? No.
62. Section 37 of PL 93-189 (FAA of 1973): App. Section 111. Will any part of this loan be used to aid or assist generally or in the reconstruction of North Vietnam? No.

63. FAA Section 612(d). Does the United States own excess foreign currency and, if so, what arrangements have been made for its release? No.
64. FAA Section 620(f). What provision is there against use of subject assistance to compensate owners for expropriated or nationalized property? The loan will not be used for this purpose but only for the purpose of goods and services required for the project.
65. FAA Section 620 (k). If construction of productive enterprise, will aggregate value of assistance to be furnished by the United States exceed \$100 million? No.
66. FAA Section 636(i). Will any loan funds be used to finance purchase, long-term lease, or exchange of motor vehicle manufactured outside the United States, or any guaranty of such a transaction? No.
67. App. Section 103. Will any loan funds be used to pay pensions, etc. for military personnel? No.
68. App. Section 105. If loan is for capital project, is there provision for A.I.D. approval of all contractors and contract terms? A.I.D. approval will be provided for as required.
69. App. Section 107. Will any loan funds be used to pay UN assessments? No.
70. App. Section 109. Compliance with regulations on employment of U.S. and local personnel. (A.I.D. Regulation 7). Compliance will be in accordance with applicable regulations.
71. App. Section 110. Will any of loan funds be used to carry out provisions of FAA Section 209(d)? No.

72. App. Section 112. Will any of the funds appropriated or local currencies generated as a result of A.I.D. assistance be used for support of police or prison construction and administration in South Vietnam or for support of police training South Vietnamese? No.
73. App. Section 113. Describe how the Committee on Appropriations of the Senate and House have been or will be notified concerning the activity, program, project, country, or other operation to be financed by the Loan. Congress will be notified of this activity at least 15 days prior to authorization.
74. App. Section 501. Will any loan funds be used for publicity or propaganda purposes within the United States not authorized by Congress? No.
75. App. Section 504. Will any of the funds appropriated for this project be used to furnish petroleum fuels produced in the continental United States to Southeast Asia for use by non-U.S. nationals? No.
76. App. Section 901.b: FAA Section 640 C. (a) Compliance with requirement that at least 50 percentum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners and tankers) financed with fund made available under this loan shall be transported on privately owned U.S. flag commercial vessels to the extent that such vessels are available at fair and reasonable rates. The loan agreement will provide for this requirement.
- (b) Will grant be made to loan receipt to pay all or any portion of such differential as may exist between U.S. and foreign flag vessel rates? No.

77. FAA Section 901. Has the country denied its citizens the right or opportunity to emigrate? No.
78. FAA Section 653 (b). Is this assistance within the country or international organization allocation for the fiscal year reported to Congress (or not more than \$1 million over that figure plus 10%)? Yes.
79. FAA Section 662. Will arrangements preclude use of funds for CIA activities? Yes.
80. FAA Section 116. Does the assistance directly benefit the needy people? If not, does the country engage in a consistent pattern of gross violations of internationally recognized human rights? The assistance will directly benefit the needy people.