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PROJECT REVIEW PAPER

Title:	Sri Lanka Agricultural Inputs Loan - ($8 million)
Fiscal Year Proposed for Financing:	1975
Appropriate Category:	Food Production and Nutrition
Date of Submission to Bureau:	November 1974
Project Development Team:	Richard B. Perry, NESA/CD Julius Coles, NESA/SA Jay A. Burgess, GC/NESA Charles R. Jenkins, COM/CPS/AT

Summary: The project will consist of financing, with Development Loan Funds, $8.0 million worth of imported agricultural inputs (chiefly fertilizer, with possibly some pesticides) needed to maintain or increase food production. As a corollary benefit, Sri Lanka's serious balance-of-payments deficit will receive modest relief.

goal?

I. Priority and Relevance: There are two major long-term goals of the national development policy of the Government of Sri Lanka (GSL) - the combining of economic growth with more equitable distribution of income and wealth. The GSL is pursuing these goals within the framework of a Five Year Development Plan (1972-76), and is following a strategy which has six major elements:

- the maximum use of available labor;
- an investment policy to make use of the limited foreign exchange availabilities;
- reduction of food imports by the development and diversification of agriculture;
- full and efficient use of existing industrial plants, further expansion of industrial capacity and investment on the basis of national priorities;

what does this imply?

- development of a new export sector; and
- involvement of people at the local level in the formation and execution of development projects.

The United States Government (USG) supports the development goals and strategy of the GSL and, acting in concert with the IBRD-sponsored Aid Group for Sri Lanka, has chosen to concentrate its (the USG's) assistance in Sri Lanka's agriculture sector.

Thus, the proposed loan discussed herein would contribute generally to Sri Lanka's national development efforts, and would be particularly supportive of that element of her strategy which emphasizes the development and diversification of the agriculture sector, by providing inputs critically needed to maintain and expand food production.

II. Borrower Administrating Agency: The Ceylon Fertilizer Corporation (owned by GSL), in conjunction with the Ministry of Agriculture.

III. Description of Project

A. Background and Introduction

1. The Economy

Like most of her Asian neighbors, Sri Lanka is basically an agricultural society. About 80% of the population lives in rural areas and, except for small employment in local industry, depends on agriculture for its total support. At present international prices, agriculture accounts for nearly 45% of gross domestic product, and accounts for over 50% 1/ of total employment. It is clearly Sri Lanka's most important economic sector, and the country is especially dependent on the success of that sector, since over 90% of export earnings are derived from agricultural products. Since independence in 1948, Sri Lanka has been a major world supplier of tea, rubber and coconut products. Sri Lanka has concentrated her internal resources on supporting the increased production of these crops and has depended almost completely on their foreign exchange earnings to finance her imports and other foreign exchange requirements.

Table 1. Composition of Exports
(in % of total earnings)

	1960	1965	1970
Tea	61.7	63.2	56.1
Rubber	21.3	15.9	22.0
Coconut products	10.4	14.4	11.9
TOTAL	93.4	93.5	90.0

1/ The apparent gap between (a) rural population being 80% of total population, and (b) agriculture providing 50% of total employment, is attributable in part to a considerable amount of daily commuting by rural dwellers to and from jobs in urban centers, and to the fact that the total population includes large numbers of unemployed women, children and elderly persons.

During the 1940's, 1950's and into the 1960's, a long list of imports became relatively permanent, supported by a good world market for her export products. Although surpluses were invested in some internal growth, the decision of earlier governments to guarantee ample food and welfare services to all people led to an increasing demand for imported goods--especially food--which narrowed available investment capital and little growth occurred in development of local productive facilities. Then in the 1960's, world prices for tea and rubber weakened and internal consumption of coconut products decreased export availabilities and earnings declined. In the meantime, imports remained high, with increases in essential foodstuffs such as rice and sugar. Prices for most food imports began to climb and have become a major portion of total imports.

Table 2. Food as Portion of Total Imports
(in millions of US dollars)

	1960	1965	1970
Total Imports	411.8	319.7	383.4
Food Imports	144.0	172.0	181.4
Food as % Imports	34.4	43.9	47.3

The result was a rapidly deteriorating balance of payments situation which was chronically deficit by the late 1960's. With a high public demand created by subsidies in food, textiles, fertilizer and transport, among others, the government had little room to decrease its imports to adjust to the relative decline in export earnings, since these subsidies were considered an important part of the government's guarantee to its people.

Then in 1972 the meteoric rise of worldwide industrial and food products began and the balance of payments problems are now reaching crisis proportions.

Table 3. Summary of Balance of Payments
(in millions of US dollars)

Current Account	1970	1971	1972	1973	1974
Exports (fob)	339	324	308	368	568
Other	43	46	54	69	68
Total Receipts	382	380	362	437	636
Imports, goods	392	372	349	415	758
Other	61	62	61	60	61
Total Payments	453	434	410	475	819
Net Current Account	-71	-54	-48	-38	-183*

*Estimates in September 1974 raise this to -210.

2. Economic Retrenchment.

Faced with the immediacy of its foreign exchange crisis, the Government of Sri Lanka took a number of steps to soften the severity of the deficit impact and began to reverse the trend; a number of them had high political content and took considerable courage by the government.

a. Restraining consumption: For a number of years, the government has guaranteed all its citizens four pounds of rice per week; for non-income tax payers, two pounds were free. In all cases the price was substantially subsidized. In October 1973, the free ration was reduced to one pound and prices of off-ration rice were increased from Rs. 0.70 to Rs. 1.15 1/ per pound. Wheat flour was rationed at one pound per week per person and the price of bread increased from Rs. 0.47 to Rs. 0.75. Sugar rationed at one pound per week, was increased from Rs. 1.15 per pound to Rs. 5.00 per pound. Imports of sugar have been greatly reduced and shortages (along with rice and flour) are widespread. — black market — price higher

b. Increasing productivity: Rice has been carefully controlled by the government for some years. As the sole purchaser of rice, a low price to the farmer was required in view of the wide range of subsidies mentioned earlier. In addition, fertilizer was supplied at about 50% of cost. To create an incentive to increase production, the government has progressively increased the purchase price of paddy from the farmer from Rs. 18 per bushel to Rs. 33. To some extent that has been offset by the removal of the fertilizer subsidy, which was done to partially relieve the government of the cost effects of the skyrocketing prices of fertilizer. On the export product side, subsidies remain for fertilizer and new credit schemes have been instituted for increasing production of tea and coconut, although their success is unknown. At the same time, there has been substantial activity in the organization and content of services to farmers, particularly paddy farmers. A national effort for self-sufficiency in rice is underway with price incentives and farm services previously mentioned in the forefront. The success of that effort will depend in great measure on the ability of the Government of Sri Lanka to finance and procure the critical input--fertilizer.

Rs. 33/bushel = $4.60/bushel

(Direct partial subsidy)

Do SL exporting fertilizer??

3. Consortium Pledging.

It was in the context of the economic crisis and the Ceylonese reaction just mentioned that the AID Group for Sri Lanka met in Paris in May of 1974. The opinion was expressed there that, in light of the need for immediate relief, donors should offer quick-disbursing types of assistance to ease the foreign exchange

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1/ Rs. 7.0 = $1.00

deficit and avoid the necessity to decrease imports critical to the country's long-range needs. The pledge of the United States at that meeting is the origin for consideration of renewed assistance to Sri Lanka and the loan discussed herein. Since AID has chosen to concentrate on assistance in the food sector where possible, and since fertilizer is so critical to food production, we have proposed to finance imports of that commodity with development loan funds.

B. Fertilizer.

1. History of Usage in Sri Lanka.

While usage of fertilizer on plantation crops such as tea and coconut has been decreasing slowly over the past ten years, a large increase has been registered in paddy as the country has turned increasingly to high yielding rice varieties. It is in paddy production that the clearest trend occurs reflecting production increases and fertilizer use.

Table 4. Rice Production and Fertilizer Usage

	Rice Production (000 bu)	Fertilizer Use (000 nutrient tones)
1965	36.3	11.6
1968	64.6	24.9
1971	64.5	29.8

In 1971, a poor monsoon season affected total rice production, but the relationship between fertilizer use and rice production is not lost.

Sri Lanka has a history of utilization of a large variety of fertilizers, although there has been some switching in quantities in recent years as high nutrient types have become popular. However, the Fertilizer Corporation and private plantation suppliers do a large amount of mixing of such products as muriate of potash, rock phosphate and ammonium sulfate along with the more nutrient urea, TSP and NPK. Table 5, following, provides a breakdown of Sri Lanka's fertilizer imports in recent years.

Table 5. Types of Fertilizers
(tons)

	1971	1972	1973	1974 *
Ammonium Sulfate	82,000	105,944	122,300	139,674
Urea	67,442	56,875	68,190	91,500
Triple Super Phosphate	13,500	12,300	23,000	8,790
Rock Phosphate	45,800	43,030	42,400	50,500
Muriate of Potash (60%)	45,113	49,427	49,250	62,231
Di-Ammonium Phosphate	--	10,000	--	4,300
N.P.K. (GDP)	14,136	14,000	10,000	64,300
Others	10,998	12,031	11,000	10,000
Total	278,989	305,615	326,145	395,295

* Projected

Over the past four years, Sri Lanka has been successful in getting most of its fertilizer needs in an increasingly short world market. Product has come from Holland, Japan, USA, West Germany, Egypt, U.K., Bulgaria and Poland, with Japan and Holland as major past suppliers.

2. Future Requirements.

As with most users, Sri Lanka faces an uncertain future in sources of all kinds of fertilizers, with the exception of rock phosphate where there are firm contracts with Egypt. It presently has its requirements through February of 1975 (the major Maha rice crop) but is energetically in search of the requirements for the following 12 months.

Subject to availabilities, the Fertilizer Corporation is planning to purchase the same quantities and same mix in 1975 as was purchased in 1974, minus carry-overs of 20,000 tons of TSP and 18,000 tons of NPK. However, the Fertilizer Corporation expects that many of its former suppliers will not have material for Sri Lanka that they have had in the recent past; Japan, for example, has formally told them so. There is some hope that the Eastern European countries will have material.

Even though substantial shortfalls in procurement are likely, there is little doubt that Sri Lanka will need the resources provided under this proposed loan. The nation's fertilizer bill zoomed from $15.2 million in 1971 to $80 million in 1974, with the prospect of breaking $100 million in 1975 if material is available. With that level of requirement, even a 50% shortfall in availabilities would still leave them in need of large amounts of foreign exchange.

The government is presently engaged in general benefit/cost analyses of various alternatives of short supply. They are attempting to identify crops, regions and quantities of fertilizer usage where short resources could be best used to achieve maximum production of highest priority products. In the priorities, rice production is of the highest order and will get first call on available fertilizer.

3. Distribution.

Once procured, fertilizer has a good chance of being effectively utilized. The distribution system is unduly complicated but has delivered reasonably well in the past, albeit at a fairly high cost.

All fertilizer products, except liquids, are purchased solely by the Ceylon Fertilizer Corporation. Allocation among the various users is made by a board comprised of representatives of the interested parties, such as the Ministry of Agriculture, Plantation Ministry and Ministry of Trade. That allocation is applied to each shipload as it arrives in Colombo or the port of Trincomalee (on the opposite side of the island). Distribution for the plantation sector (tea, rubber and coconut) has traditionally been handled by private distributors and remains so today. Typically, they are allocated about half of total imports and are expected to pick up their materials at the port, except for bulk supplies which the Fertilizer Corporation handles, since it owns the only bulk carriers. The private distributor is responsible for whatever mixing is required and for making transport arrangements. This system is long standing and apparently works without significant problems, except for transportation which is hampered by chronic shortages of spare parts for trucks.

The other half of total fertilizer supplies, designated for the food crop sector, is handled in the first instance by the Fertilizer Corporation which transports the material from dockside to a large warehouse/bulk mixing plant in Colombo or to the warehouse in Trincomalee. Warehouse capacity in Colombo is 79,000 tons in a modern facility and capacity in Trincomalee is 13,000 tons. The bulk mising operation in Colombo is a large one, handling about 65,000 tons a year of blending and automatic bagging in order to facilitate usage by the farmer who is informed by label as to what crop the fertilizer is for and what application is recommended. The large mixing/bagging operation is undoubtedly expensive and time-consuming and could probably be improved upon if the distribution

system, particularly at the farmer level, were simplified. When the fertilizer leaves the warehouses of the Fertilizer Corporation, it passes to the Department of Agrarian Services (Ministry of Agriculture) which has a chain of 85 regional warehouses located around the country. Distribution to the farmer is carried out by multi-purpose cooperatives through 4,000 branch stores strategically placed. The cooperative is supplied on demand by the regional warehouse as the requests of farmers accumulate.

Responsibility for distribution is shared by the three different organizations for a number of historic reasons, plus the desire of the Fertilizer Corporation to avoid the management problems of operating a system as large as would result from a consolidation. Inquiry among users and distributors reveals an expected array of problems centering around the lack of a particular product when it is needed, as cooperatives frequently have inadequate storage and transport difficulties slow delivery from the regional warehouses. Yet, the system has moved large quantities of fertilizers in a manner that is acceptable if not ideal.

There is some indication that the government is considering opening distribution to private dealers to widen the physical network of supply and bring into service additional transport as well as initiatives of entrepreneurs.

D. Utilization.

Fertilizer for paddy is widely distributed among farmers with holdings of all sizes. Since paddy is a crop grown mostly by small farmers (see Table 6, following), there is reasonable assurance--as demonstrated by the increased productivity of paddy--that fertilizer reaches the small farmer.

Table 6. Ownership of Paddy Land

Size of Holding (acre)	Numbers of Farmers	Acres Affected
Less than 1/2	289,800	97,100
1/2 to 1	253,600	171,000
1 to 2	148,500	252,300
2 to 5	117,500	440,000
5 to 10	22,400	192,900
Over 10 1/	4,400	119,700
Total	836,200	1,273,000

1/ Under current land reform legislation in Sri Lanka, 60 acres are the maximum any individual can own.

A variety of credit sources brings financing for fertilizer within the reach of all farmers. Official credit is available through the multi-purpose cooperatives located throughout Sri Lanka; however, studies show that it is probably used by only 25% of the farmers, the balance going to the more traditional sources of relatives or local money lenders. Through a recent reorganization of farmer services, Sri Lanka is constructing 475 Agricultural Productivity Centers which will bring together extension, animal husbandry, and similar services in a single center near the farmer. Part of this collection of services will be a branch of the government-owned Bank of Ceylon which, it is believed, will bring professional lending skills to provide supervised credit under conditions inspired by a government which is highly production minded and is willing to take risks to reach a maximum number of farmers.

IV. Beneficiaries: Pending discussions with the GSL on the subject of the country's specific fertilizer needs vis-a-vis possible sources of supply, it is intended that the proposed loan be used to finance only those fertilizer compounds which are applied primarily to food crops (paddy and perhaps some vegetables), and not for fertilizers applied to plantation crops (tea, rubber and coconuts). Paddy crops are grown almost exclusively by farmers having small-to-medium size holdings, and, therefore, such farmers would be the principal direct beneficiaries of the proposed loan. The GSL has and will obligate itself to give priority in the distribution of fertilizer to use for rice, the country's major food crop. Further, since Sri Lanka now imports nearly 40% of its rice requirements, the use of fertilizer is essential to the GSL's objective of increasing domestic production of food for internal consumption (see also Section III.B. above).

V. Project Design: Use of the logical framework approach is not felt to be necessary or particularly appropriate in order to consider the sector goals, project purposes, inputs, outputs, etc., related to this proposed loan. Such aspects are discussed in general at various places throughout this Project Review Paper.

VI. A.I.D. Experience: The Agency's experience in the general area of commodity financing, particularly with respect to fertilizer, pesticides and other agricultural inputs, is quite extensive. Implementation of the proposed loan should present no particular problem for A.I.D. provided eligible commodities are available from eligible sources. However, escalating costs and scarcities of both commodities and transportation services will likely continue for the foreseeable future, and such problems will simply have to be dealt with as best they can as they occur.

VII. Other Donor Coordination: As stated in Section III.A.3. above, the proposed A.I.D. loan is an outgrowth of the USG's participation in the IBRD-sponsored Aid Group for Sri Lanka. At the staff level,

A.I.D. and the IBRD maintain an unofficial dialogue, keeping each other informed of their current activities and plans with respect to assistance for Sri Lanka.

VIII. Financial Plan: Given the price volatility and supply uncertainty existing in present fertilizer markets--conditions which are likely to prevail for the foreseeable future--it would be very difficult and not particularly useful to prepare a financial plan per se for Sri Lanka's 1975 fertilizer procurement. As noted in Section III.B.2. above, the GSL hopes to procure about the same quantities and same mix in 1975 as was procured in 1974. The total import bill in 1974 was $80 million; the cost in 1975 could exceed $100 million. Obviously, the $8 million which would be provided under the proposed A.I.D. loan would meet only a minor percentage of the total need. However, if the proposed loan is viewed as assisting the GSL in financing only the high-nutrient fertilizers to be applied to paddy crops, e.g. urea, then the $8 million becomes more significant, perhaps on the order of 20% of the amount required. The balance would have to come from a combination of whatever other credits which Sri Lanka could arrange, plus expenditures of her own scarce foreign exchange.

IX. Project Development Schedule: The primary responsibility for drafting the Project Paper (PP) will rest with AID/W. It is hoped that our requirements for additional data and for understandings to be reached with the GSL (see Section X. following) can be handled by cable exchange, and that there will be no need for travel to Sri Lanka at this time. The target date for completing the PP is November 30, with authorization not later than December 31, 1974. However, in order to permit Sri Lanka to avail itself of purchasing opportunities that may exist between the present time and the end of January 1975, A.I.D. plans to make contracts entered into on or after November 1, 1974 eligible for financing on a reimbursable basis, provided all applicable A.I.D. requirements are met.

X. Analyses: The following areas require additional data, analysis and/or consultation with the GSL in order to complete the PP:

A. Identification of specific inputs to be financed, to include: (1) a determination of whether pesticides are needed and, if so, what quantities of what compounds and for what crops their use is intended, and (2) an understanding with the GSL concerning the fertilizers to be eligible for financing with proceeds of the proposed loan;

B. A more definitive picture of the GSL's overall fertilizer procurement plans, to include sources of financing, insofar as they are known at the present;

C. An analysis and appraisal of the existing fertilizer distribution and marketing system, with particular emphasis on the adequacy of the system with respect to farmers having small land holdings--this should include an examination of the availability and cost of credit to such farmers, and discussions with the GSL as to whether technical assistance is desired in the areas of distribution, marketing and credit;

D. An examination of the economics of fertilizer importing and use in Sri Lanka, with respect to (1) allocation of foreign exchange resources to fertilizer imports as opposed to food imports, and (2) return to farmers in terms of increased rice yields and higher rice prices vs. the cost (of the commondity and of credit) of fertilizer usage; and

E. An assessment of the adequacy of irrigation and of the quality of farm management needed to achieve optimal results from high yielding varieties of rice.

Al White suggests that the above studies are too ambitious for the loan proposal to encompass.

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

A.I.D. Loan No. 383-T-015

6p.

LOAN AUTHORIZATION

Provided from: FAA Section 103 ("Food and Nutrition")
(Sri Lanka: Agricultural Inputs)

Pursuant to the authority vested in the Administrator, 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 ("The Loan") pursuant to Part I, Chapter 1, Section 103, Food and Nutrition and Part I, Chapter 2, Title 1, the Development Loan Fund, of said Act, to The Government of Sri Lanka ("Borrower") of not to exceed Eight Million United States dollars ($8,000,000) to assist in financing the foreign exchange costs of procuring and importing fertilizers and carrying out feasibility studies and/or other types of technical assistance related to agriculture. Of the total amount, $250,000 will be available for such studies and technical assistance. This loan will be subject to the following terms and conditions:

1. Terms of Repayment and Interest Rate

The Borrower shall repay the Loan to A.I.D. in United States dollars within forty (40) years from the date of the first disbursement under the Loan, including a grace period of not to exceed ten (10) years from said date. The Borrower shall pay to A.I.D. in United States dollars interest at the rate of two percent (2%) per annum during the grace period and three percent (3%) per annum thereafter on the outstanding balance of the Loan and any due and unpaid interest.

2. Other Terms and Conditions

a) During the period from December 31, 1974 through June 30, 1975, fertilizer financed under the Loan shall have its source and origin in countries included in A.I.D. Geographic Code 899, provided that during the period February 1, 1975 through May 31, 1975 fertilizer shipments from the United States shall be ineligible for A.I.D. financing. Unless A.I.D. otherwise states in writing, fertilizer financed under the Loan subsequent to June 30, 1975 shall have its source and origin in the United States and other countries included in A.I.D. Geographic Code 941.

b) Unless A.I.D. otherwise agrees in writing, services, including ocean shipping, financed under the Loan shall have their source and origin in the United States and other countries included in A.I.D. Geographic Code 941.

c) The Loan shall be subject to such other terms and conditions as A.I.D. may deem advisable.

Assistant Administrator
Bureau for Near East and South Asia

2/6/75
Date

Clearances

NESA/CD	:RBPerry	Date 1/27/75
NESA/CD	:SATaubenblatt SAT 1/2/75	Date 1/2/75
NESA/SA	:CHRees	Date 1/2/75
NESA/DP	:RBirnberg	Date 1/2/75
GC/NESA	:MGKitay	Date Jan 31
SER/FM	:SLBrown	Date 1/3/75
PPC/DPR	:AHHandly RChailey	Date 1/22/75

Drafted by: GC/NESA:JABurgess:12/27/74

FEB 3 1975

ACTION MEMORANDUM FOR THE DEPUTY ADMINISTRATOR

THRU: EXSEC

FROM: AA/PPC, Alexander Shakow A Shakow Noted JEM

SUBJECT: Sri Lanka Agricultural Inputs Loan

Problem: Your approval is needed to permit the Assistant Administrator for NESA to authorize an $8 million loan to Sri Lanka for agricultural inputs (fertilizer). The DLC concurs in authorization.

Discussion:

1. Purpose of Loan: Sri Lanka's agricultural policy in recent decades stressed the production of crops for export, and gave only secondary attention to food production for domestic use. This policy has to some extent backfired with the recent dramatic increase in imported food costs; food imports now account for almost half the country's total import bill. To alleviate this situation, the government is devoting considerable attention to food production for local use.

Large amounts of imported fertilizer are necessary to carry out this new policy. This A.I.D. loan will assist by financing the import of a portion of the current year's fertilizer requirements. The exact types of fertilizers to be imported -- urea, triple superphosphate (TSP), NPK, and/or others -- will be determined by A.I.D. and government staff in the course of loan implementation. If, for example, only urea is purchased, and assuming an average urea cost of $430 per ton, the loan will finance about 18,000 tons, or 20% of the estimated calendar year urea requirement.

In addition to fertilizer, some $250,000 will be made available in the loan, and identified in the Loan Agreement, for specific studies related to development of the agricultural sector.

2. Loan Category: This loan falls under Section 103 of the FAA, Food and Nutrition, our highest priority category.

3. Important Considerations: The following considerations were thoroughly reviewed by NESA and PPC, and the two Bureaus agree that the loan should go forward.

a. Institutional Framework: The public sector Ceylon Fertilizer Corporation will implement the loan at the national level. It appears to operate on a businesslike if not

commercially aggressive basis, and seems to be amenable to further improvements in its operations. Some bottlenecks are expected to occur in the distribution system, but we believe that these problems will be manageable. Other institutional constraints such as credit and marketing also exist, but not in such degree to deter implementation of the loan. (See loan paper pp. 20-21).

b. Economic and Financial Viability: The Government of Sri Lanka, the Borrower, has a significant debt servicing burden, but nevertheless the loan paper concludes that repayment prospects are reasonable given the substantial concessionality of the loan (loan paper p. 23). Net benefits of the loan are positive (p. 20).

c. Government Contribution: The government will purchase some fertilizer with its own foreign exchange, and also pay inland transportation, storage, handling, and distribution costs for all imported fertilizer including that financed by this loan. The cost of this to the government is estimated at considerably in excess of 25% of the total cost for the fertilizer program. The government will provide assurance through a provision in the Loan Agreement that it will contribute at least 25% of the total cost of the entire program, as required by Section 110(a) of the FAA.

d. Congressional Notification: This loan was not included in the FY 1975 Congressional Presentation; therefore, prior Congressional notification as required under Section 114 of the Foreign Assistance and Related Programs Appropriation Act of 1974 was carried out by formal notification letters on December 27, 1974. No Congressional objection to the loan has been raised.

e. Relation to Overall Sector Strategy: This loan contains some of the same weaknesses as the Bangladesh Agricultural Inputs loan that you approved a short time ago, i.e., there is no overall, well-articulated and systematic long-run strategy to overcome a number of key agricultural bottlenecks. However, the government of Sri Lanka has taken some positive steps, including land reform actions, producer price increases, and reduction in fertilizer subsidies. We also note that Sri Lanka is an MSA country with a low per capita income, thus falling within that group of countries to which Congress asks us to pay special attention with assistance necessary to increase agricultural production.

In recommending this loan for authorization, NESA is cognizant of the necessity to do more in the future with respect to sectoral analyses and in defining such loans in the context of

comprehensive longer-term strategies to overcome major problems. However, the Bureau advises that in this case time did not permit the initiation of the lengthy studies necessary to fully assess agricultural bottlenecks and evolve a comprehensive strategy. Despite this shortcoming, the loan paper contains an assessment of Sri Lanka's agricultural sector and problems, including identification of a number of positive steps already taken by the government as mentioned above; also, NESA has assured itself of Sri Lanka's high priority need for this fertilizer.

To further develop the country's agricultural sector and take steps to break various bottlenecks in production and distribution of food inputs and food, various studies are needed of general problems and specific high priority projects. NESA will strongly encourage the government to undertake studies, both with its own resources and with assistance from aid donors. As mentioned earlier, $250,000 will be specifically made available in this loan to permit A.I.D. to finance certain of these studies to be jointly selected by ourselves and the government. Some of the studies relating to specific projects could form the basis for future A.I.D. loans to Sri Lanka. Also, a NESA TDY team will be visiting Colombo later this month to review/appraise a number of proposals for FY 1976 financing, including a possible loan to the Paddy Marketing Board for rice distribution and storage, a small farm implements project, and a number of irrigation projects. In the process, the team will be assessing the various agricultural constraints relating to increased food production.

Finally, NESA has drafted an airgram that will be cleared by PPC instructing its field posts that agricultural inputs loans in the future, if they are to be favorably considered, should include the elements indicated in your December 31, 1974 memorandum to Mr. Nooter regarding deficiencies in the Bangladesh loan.

Conclusion: NESA and PPC agree that this loan has weaknesses in that it does not fit into an overall long-term agricultural strategy to solve Sri Lanka's problems in this sector. On the other hand, Sri Lanka is an MSA country with a low per capita income, and this loan will provide fertilizer inputs to help increase agricultural production. The government has taken some limited but positive actions in the agriculture sector, as indicated earlier. NESA also is taking actions -- such as sending a team to Sri Lanka to assess project possibilities, encouraging the government to finance needed studies both with its own funds and with help from foreign donors (including the $250,000 provided under this loan), and advising its Missions of the requirements of your December memorandum to Mr. Nooter.

These actions could lead to better design of projects proposed for A.I.D. assistance to that country in the future.

Recommendation: That you approve the loan for authorization.

Approved: John E. Murphy

Disapproved: _____

Date: 2/3/74 FEB 5 1975

PPC/DPRE:RCMalley/imb:1/21/75

Clearances: AA/NESA, AWhite
GC, AZGardiner

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TATES GOVERNMENT

emorandum

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PD-AAD-072

See Distribution Below

DATE: April 2, 1975

FROM : NESA/SA, C. Herbert Rees

SUBJECT: Sri Lanka - Income Distribution Issues and Pricing Policy for Fertilizer and Other Inputs in Paddy Farming

26p.

Please find attached a copy of a paper prepared by Dr. Lawrence Rosen, who at the request of the NESA Bureau, spent four weeks in Sri Lanka examining production and equity issues of concern to AID in respect to paddy farming. The paper focuses particular attention on distribution costs and pricing policy for fertilizer in response to questions raised in connection with the recently approved $8 million fertilizer loan for Sri Lanka. The paper also analyses the pattern of income distribution, and the relative position of paddy farmers, and provides an assessment of desirable policy measures for the Government of Sri Lanka which may have an unfavorable impact on social equity objectives, but appear necessary if Sri Lanka is to succeed in substantially increasing food production.

Attachment: a/s

Distribution:

AA/NESA, RHooter
AA/NESA, ADWhite
NESA/TECH, DSteinberg
NESA/TECH, JDalton
NESA/TECH, JBalis
NESA/DP, GPatterson
NESA/DP/PR, FCorrel
NESA/DP/PL, RBirnberg
NESA/CD, TLustig
NESA/CD, STaubenblatt
PPC/RC, EGriffel
State/NEA/INS, JLeader
PPC/DPR, AHandly
PPC/PDA, RMuscat
TA/AGR, LHesser
TAB, EOwens

Sri Lanka
Income Distribution Issues and Pricing Policy for Fertilizer and Other Inputs in Paddy Farming

Summary and Recommendations

I. Income Distribution

Through tradition and political commitment, Sri Lanka has done more to redistribute both income and wealth than the majority of developing countries. Major elements in this effort in respect to upper income groups, include very progressive income taxation, heavy compulsory savings, tax on assets and legal limits on land and other property ownership. Redistribution programs include a wide range of free or heavily subsidized public services and goods of which the free rice ration is by far the most important (and costly).

Data on income patterns show that these programs have had an impact. Between 1963 and 1973, the proportion of total income received by the top 10% of spending units has declined from 37% to 28%; while the share for the lower 40% has increased from 14 to over 19%.

Rising unemployment (estimated to have increased from about 14% to 24% of the labor force) during the same period would seem to cast considerable doubt on the validity of these figures; but the bulk of the unemployment appears to be in the riddle income groups, a reflection of the educational system and prestige considerations attached to various occupations. Among the lower income groups in rural areas, there actually appears to be a labor shortage at least during periods of high labor demand for paddy production. This apparent shortage is confirmed by the fact that agricultural wages, outside of the estate sector, have increased about 50% during the past two years.

Although ration amounts have been reduced under budgetary constraints, the free ration program still has a very substantial impact, especially on the lower income groups through the provision of 1 lb. per person per week of rice, in addition to another 2 lbs. at about 1/2 the cost in the parallel market. For the lower 20% of the population, the imputed value of the free ration alone amounts to a 50% increase in effective income. For a small farming family, with 1/4 acre of paddy, the free ration could be considered equivalent to doubling the extent of land under cultivation.

Despite reduction in ration amounts, the total cost of the food subsidy program has jumped substantially during the past year and now carries a budgetary cost on the order of Rs. 1000 million, or roughly 1/4 of current receipts. While the food subsidy program has had a tremendously beneficial impact in terms of raising living

standards for the lower income groups, (and is no doubt also a major factor in Sri Lanka's relative success in restraining rural migration to urban areas), the budgetary cost of the program simply does not appear to be sustainable if Sri Lanka is to raise domestic savings and investment to levels necessary to maintain per capita production let alone for long term development.

An effort to situate paddy farmers within the income spectrum is exceedingly difficult owing to the wide variation in farming conditions and in resulting returns. On a hypothetical basis, however, double cropping on a 1 acre farm should provide cash or imputed family income for an owner-cultivator of approximately Rs. 2000 p.a., including the value of the food subsidy. This would place such a family in the 3rd lowest income decile. While Sri Lanka has never carried out an island-wide cadastral survey to determine land ownership, sampling studies suggest that approximately 40% of paddy holdings amount to 1 acre or less and another 25% consist of 1 to 2 acres in size. The majority of paddy farmers therefore clearly fall within the lower income groups. Tenancy arrangements moreover, entailing perhaps a 30% reduction in income for about 1/3 of these farmers reinforce this conclusion. On the other hand, returns to the 1/3 of paddy holdings above two acres would move most farmers with these larger holdings well into the middle and upper income ranges for Sri Lanka.

Although size alone does not determine income, most farms under 1/2 acre are probably too small to provide adequate returns; and it is the farms in the 1/2 to 2 acre range (46% of total paddy holdings) which comprise the low income groups that are effectively reachable.

II. Fertilizer Inputs

The cost of fertilizer distribution in Sri Lanka does not appear unreasonable. Against an average CIF cost for urea of about $325/ton, total additional charges, including 12.5% duty, amount to an increase of 1/3. Moreover, if fertilizer imports were valued at the FEEC rate of exchange to reflect the true foreign currency cost, internal distribution expenses would add only 10% to the basic CIF cost. The main problems in the physical distribution of fertilizer appear to be limited transportation facilities at the district store to coop level and the onerous administrative procedures that must be complied with. The necessity of trying to control the use of subsidized fertilizer, moreover, substantially compounds the administration burden.

The current fertilizer subsidy for paddy amounts to a 30% reduction against the full cost price. The same fertilizer intended for vegetable products is not eligible for a subsidy; and conversely,

fertilizer intended for estate crops of tea and coconut receive a 50% subsidy. The subsidy differentials not only create problems of inter-sectoral leakage, with probable application of less appropriate fertilizer mixes, but may also be intensifying paddy farmer resistance to higher fertilizer prices through the apparent contradiction the subsidy differentials pose in respect to the avowed priority the government attaches to increased food production.

Even with the 30% subsidy for paddy fertilizer, the current price reflects a 250% increase over the price a year ago. The impact of the price increases on fertilizer cannot be determined empirically since under current drought conditions, affected farmers would not use fertilizer at any price. On the basis of aggregate data for so-called "normal" conditions, however, it is reasonable to assume that the increase in the paddy procurement price from Rs. 30 to Rs. 33 per bushel offsets almost exactly the increased fertilizer cost, at the national average yield of 45 bushel/acre. Farmers enjoying higher yields would find profit margins improved, while those below the 45 bushel/acre figure would find margins eroded.

Whether or not the farmer changes the amount of fertilizer used depends on the actual (or perceived) difference fertilizer application has on his yield. Against the current procurement price of Rs. 33/bushel, it may be calculated that the farmer would be better off to continue, or even increase, fertilizer use unless its application results in a yield difference of less than 5.4 bushel/acre (7.7 bushels at the unsubsidized price).

Farmers who are producing below 45 bushel/acre, however, may find, or believe, that their fertilizer response is lower than the 5.4 bushel level, especially when uncertain rainfall conditions are taken into account. Conversely, those who have assured water, HYV seed, etc. could well find it advantageous to increase fertilizer application, even if there were no subsidy at all. While it is unlikely that on an aggregate basis the price changes should induce a net reduction in total fertilizer use, a shift in allocation can be expected from the less productive to the more efficient farmers, who would generally also tend to be the larger farmers producing a commercial surplus.* This is consistent with Sri Lanka's paramount need to increase food production; but it is, unfortunately, at the same time contrary to the social/equity objective of assisting the less efficient, and poorer farmers.

i.e. fertilizer supply is not constant to subsistence farmer - only cash seller.

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* While there is no direct correlation between the size of farm and yields or gross return per acre, the larger farms obtain economies of scale in the costs of production, which means that they have higher net returns per acre, and thus efficiency tends to correlate with the size of farms, even if yields per acre do not.

Elimination of the current paddy fertilizer subsidy could be offset on the aggregate level by a further increase in the procurement price of about Rs. 1.50, and without any net change likely in respect to the overall budgetary impact. Elimination of the paddy subsidy (along with those provided to the estate sector), is certainly warranted from the point of view of maximizing efficiency and resource allocation, but it will also have the probable effect of accelerating the shift of fertilizer away from the poorer farmers, who are producing generally for their own consumption and accordingly are likely to be much less sensitive to the market value of the crop than to the increased cost of the inputs.

In sum, the price relationship between fertilizer and paddy (about 1:1) appears quite satisfactory for a reasonably efficient producer. It may very well not be beneficial, however, for the poorer farmer. A major effort in terms of reducing administrative impediments and educating the poorer farmer in respect to the benefits and proper application of fertilizer mixes would be necessary to overcome his resistance. At the same time, since lack of adequate and dependable water in the dry zone area appears to be the principal cause of the relatively low fertilizer response in Sri Lanka, expansion of irrigation facilities for the smaller (2 acres) farmers would not only substantially improve the efficiency of fertilizer use, but would also provide important equity benefits.

III. Credit and Water

Credit in support of paddy farming is probably the sorest point in Sri Lanka's farming history. Numerous schemes have been established since independence, but each consecutive scheme has failed through farmer default on repayments. Poor performance in this area, if not condoned, has at least never been opposed by successful candidates for public office. The current effort established in conjunction with the Government's program to increase paddy production is based primarily on the creation of 400 new branches of the Bank of Ceylon with government guarantees to cover loans up to Rs. 900/acre. This new credit facility is also likely to fail, unless some means are adopted to break the cycle of credit/default/forgiveness, and prevalent attitudes which now seems established in respect to non-repayment.

Water availability, except under ideal circumstances of adequate and timely rainfall, clearly stands out as the major constraint to increased food production in Sri Lanka. This is particularly the case in the dry zone where inadequate water availability generally limits the second paddy crop to about 1/2 of that sown during the main cultivation season. Under these circum-

stances, improvements to existing irrigation systems and storage reservoirs would seem to warrant very high investment priority. By the same token, the fact that water is a free input to the farmer clearly seems inconsistent with the need to optimize the use of a scarce resource, and suggests that some form of water management and water pricing policy is essential. Movement in this direction, however, would collide not only with social and political obstacles, but also serious physical constraints in respect to implementation where irrigation is based on gravity flooding of each successive paddy terrace. Where, in contrast, each paddy can be fed separately as in new irrigation projects, such as the Mahaweli Ganga, the same physical constraint would not be present. Given the serious political difficulties associated with any form of water levy, it seems doubtful that the Government will move in this direction on its own initiative.

IV. Recommendations

1. Fertilizer Subsidies. The measures taken by the Government in July 1974 to raise the prices of fertilizer are highly commendable; but the subsequent re-introduction of subsidies and the price differentials which now exist between fertilizer for estate crops and that for paddy farming appear to be seriously compounding the administrative burden of fertilizer distribution, and may also be increasing paddy farmer resistance to fertilizer use. Full cost pricing of all fertilizers, for estate as well as paddy cultivation, would greatly mitigate these problems in addition to assuring the most efficient, economic allocation of this resource. As a minimum, overall coordination should be provided for the present separate fertilizer policies in the estate sector and paddy farming (formulated in and administered by two different ministries) and the price differentials should be eliminated by equalizing the current subsidies.

2. Water Use. Since inadequate water availability is recognized as the major constraint in limiting the acreage of paddy cultivation, it seems desirable that the Government move ahead with some form of water levy or local administrative controls designed to reduce excessive water consumption during the Maha or main crop, and thereby permit a greater acreage to be cultivated during the Yala, or second crop. If the political and physical difficulties that would be confronted in changing the present policy of "free" water on a national basis are judged insuperable, a water management policy should, as a minimum, be implemented in new irrigation projects to encourage more economic use of this scarce resource. This is in addition to the land betterment tax now under consideration, which should help to recover the capital cost of new irrigation facilities, but as presently conceived, would not provide any inducement to husband the use of the water itself.

3. Rural Credit. The long history of credit schemes and the series of failures characterizing this experience has now inculcated widespread and adverse attitudes towards loan repayment. The availability of credit is an essential element in expanding food production, but a major effort by the Government is now required to break the cycle of credit/default/forgiveness.

4. Increasing the Paddy Procurement Price. The substantial rise in the Government procurement price from Rs. 14/bu two years ago to the current price of Rs. 33/bu effectively offsets the intervening price increases in the costs of paddy production, including fertilizer, and now appears to provide a satisfactory price relationship for paddy production. However, the current paddy price is still substantially below the true foreign exchange cost of imported rice as well as the domestic paddy prices prevailing outside of Government procurement channels. In addition, the present favorable price ratio is based on subsidized fertilizer. A further increase of 10%-15% in the paddy procurement price, would help to reduce parallel marketing of paddy; and would serve to offset a desirable reduction or elimination of the current fertilizer subsidy as well as the impact of new land betterment and water taxes.

Moreover, rather than operating a simple, flat rate price for paddy procurement, as is presently the case, it would be desirable for the Government to incorporate premium payments which would be based on low moisture and impurity content of paddy deliveries.

5. Small Farmer Programs. Movement towards more economic pricing policies in paddy production will tend to allocate resources (and resulting benefits) more in favor of larger, commercial producing farmers, as opposed to many small farmers producing primarily for home consumption. (It should be noted, however, that rice yields do not correlate with size of farm and some small farmers have yields as high as any). While this is consistent with Sri Lanka's paramount need to increase total food production (which will provide important equity benefits in itself), it may not be fully supportive of social-equity goals. A major concomitant effort, therefore, appears essential to maintain the position of small farmers through the Agricultural Productivity Centers and through extension services focused directly on improving small farmer utilization of appropriate fertilizer mixes and other inputs. At the same time, since many small holdings are too small to offer much potential for increased returns, it also seems essential that greater attention be given to developing long term employment alternatives including a shift to less water-dependent crops in some cases, and the creation of new agro-business opportunities such as small tractor assembly.

I. Pattern of Income Distribution

Emphasis on Social-Equity Objectives

Sri Lanka, perhaps more than any other LDC, has developed a philosophy and tradition of social welfare concerns. Policies to implement these objectives have focussed, on the one hand, on reducing income and wealth, or means of income, of the upper income groups; and, on the other hand, on redistributing income to the less advantaged, primarily through the provision of subsidized goods and services. On a proportional basis the social welfare programs impact to the greatest degree on the lowest income groups.

From the rich: Principle measures taken in respect to removing income and wealth from the well-to-do include: very progressive income tax (recently increased to 75% on taxible income above Rs. 10,000); compulsory savings which might well be regarded as tantamount to a confiscatory tax on higher incomes; a wealth tax (recently increased to 8%); as well as the land reform measures which have restricted land ownership to 50 acres for estate cultivation and to 25 acres in the case of paddy land.

While the complexity and variety of exceptions, both legal and otherwise, make the real tax incidence difficult to assess, (income tax is collected from less than 5% of the population), the net impact very clearly has been to reduce income and wealth of the top income group. Inevitably, these results have been achieved only at the cost of generating a great deal of stress among those whose income and wealth is threatened or reduced, along with uncertainty for the future and erosion of economic incentives. In an effort to stimulate private investment, the Government has felt obliged to introduce numerous exceptions and new productive incentives, mainly of a fiscal nature. Paddy farmers, for example, apart from the limit on land ownership, appear to escape unscathed from all forms of income and wealth taxation. As an incentive to production, all revenue from paddy delivered to the Paddy Marketing Board is legally exempt from taxation -- although this situation appears to prevail on a de facto basis throughout the paddy sector, in any event.

To the poor: Policies and programs to redistribute income are based primarily on State provision of subsidized goods and services, notably the food ration program, but also on heavily subsidized public services, such as transportation, free health and education. Results of the latter have given Sri Lanka one of the highest levels of literacy (85%) among all developing countries. In addition to providing subsidized goods and services, the Government has also focussed attention on creating new employment opportunities in the rural area, mainly through various colonization schemes, tenancy laws and the recent land reform program.

New employment opportunities have not, however, kept pace with the growth in population and the labor force. Survey data from the

Central Bank indicates that unemployment has risen from 14% to 24% of the labor force between 1963 and 1973. While such figures are notoriously unreliable, it does seem clear that the unemployment situation has steadily deteriorated.

Income Redistribution and Unemployment

The dramatic increase in unemployment raises a serious question, or paradox: How can Sri Lanka's social-equity policies have achieved any real improvement in the relative position of the lower income groups, as income data suggests, if unemployment has, at the same time, risen so rapidly? In trying to answer this question, the statistics and underlying methodology which show a substantial shift in income from the top to the lowest income groups were examined skeptically and thoroughly. Since the results do not seem distorted, it is reasonably certain that the explanation lies elsewhere: in the nature of Sri Lanka's unemployment, and in the effect of the food ration program.

Unemployment in Sri Lanka is not a function primarily of the lowest income groups, but is spread relatively evenly throughout income levels, with the unemployed supported by family income and Government subsidies. The universal education system is perhaps the chief factor by raising job expectations beyond what is available, and by reinforcing what seems to be very prevalent and deep-seated notions regarding social status and prestige considerations associated with different occupations. Farming, unfortunately, appears not to rank very high on the scale.

That this is the case also provides a partial answer to another seemingly paradoxical situation: while unemployment is nearly as widespread in rural areas as in the urban, agricultural wages -- virtually the only market in Sri Lanka which is free from Government intervention and subject to economic forces -- have increased over the past two years by nearly 50%. While prestige considerations mean that many of the new entrants into the labor force are reluctant to accept agriculture work, and prefer to remain unemployed, the main explanation for the increase in wages is the doubling in paddy procurement price, and the close relationship by blood or marriage that frequently exists between the paddy workers and the owner who is accordingly under greater social pressure to pass the gain on through higher wages.

In addition, the seasonal nature of paddy farming strengthens the bargaining leverage of paddy workers. In peak periods of planting and harvesting there actually appears to be a general labor shortage, especially in the dry zone areas where farms are larger and population density is lower. Since paddy farming in Sri Lanka seems to involve some degree of staggering for both planting and harvesting, efforts to facilitate labor mobility could help to increase total production and the level of rural employment.

Food Subsidies

The food ration program is the single most important element in Sri Lanka's policy of income redistribution. At the present time, the basic ration consists of 1 lb. of free rice per person per week (excluding taxpayers), plus an additional 2 lbs. at Rs. 1.10/lb., about half of the price in the open market.* The fact that an individual grows rice, has no bearing on his eligibility for the free ration. A ration of flour is also provided, currently at the rate of 1 lb./person/week at the same price as rice, with an additional 1/2 lb. for estate workers. Sugar, a major staple in the Ceylonese diet is currently limited to 3/4 lb. per week, with virtually no parallel market availabilities.

Although the present food rations represent a substantial tightening both in volume and price from past years when the program provided 2 lbs. of free rice and 2 lbs. at Rs. 0.37, and unlimited flour at Rs. 0.33/lb., the impact of the food subsidies is still very large especially on the lowest income groups.* The subsidy element is the food programs at current prices, (approximately Rs. 1000 per household), is now equivalent to what total average household income was for the lowest 10% of the population in 1973. For the lowest 40% of the population, the subsidy element is equivalent to about 1/4 of family income. For a small paddy farmer double cropping on 1/4 acre, the household ration of free rice, which is equivalent to about 9 bushels of paddy, net of any expense, has the effect of doubling the land under cultivation.

Income Distribution Data

The Economic Research Department of the Bank of Ceylon has carried out two extensive surveys showing the patterns of income distribution in Sri Lanka in 1963 and 1973. The results are summarized in the attached Table 1, both for income receivers, i.e., individuals, and for spending units, i.e., combined household income for those living under the same roof. Income is defined to include not only cash income from what ever source, but also imputed income, including on-farm consumption, payment in kind and the value of transfers, i.e., primarily food subsidies. Transfers do not, however, include any imputed value for free or subsidized services, education, health, etc., which impact higher in relative terms on the lowest income groups, but which pose too many methodological problems of evaluation to be included.

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* estate workers and the population in the main paddy producing districts receive only 1 lb. at the subsidized price in addition to the free lb.

* While the efficiency of food distribution was not examined, it is interesting to note that problems of graft diversions or favoritism frequently implied in respect to other aspects of the economy were not mentioned in any of the discussions concerning food subsidies.

Percentage of Total Income Received by each tenth of Income Receivers and Spending Units (all Island)

Deciles	By 10th of income receivers		By 10th of spending units		Derived average TI income of spending units
	1963	1973	1963	1973	in Rs.
Highest 10%	39.24	29.93	36.77	28.03	10,452
Second	16.01	15.91	15.54	14.92	5,564
Third	11.46	12.65	11.22	11.65	4,344
Fourth	8.98	10.56	9.00	9.91	3,695
Fifth	6.82	8.75	7.54	8.75	3,263
Sixth	5.55	7.10	6.27	7.45	2,778
Seventh	4.51	5.70	5.21	6.52	2,431
Eighth	3.56	4.38	4.00	5.60	2,088
Nineth	2.70	3.17	2.95	4.38	1,633
Lowest	1.17	1.80	1.50	2.79	1,040

The data both in terms of income receivers and spending units, show a very substantial decline in the percentage share of the top 10% of the population -- from 39% to 30% and from 37% to 28% respectively. The second highest decile shows a very modest decline, while all other deciles show a relative improvement, increasing in proportionate terms, the lower the decile group. For the lowest 40% of the population, the share of total income has increased from about 12% to 15% for income receivers, and from 14% to 19% for spending units. The Gini concentration ratio (0 represents perfect equality) shows an improvement from 0.45 to 0.35 for total spending units and from 0.49 to 0.41 for total income receivers. Comparative data was not available in relation to other countries, but it seems likely that the income concentration ratios in Sri Lanka and the relative change compares very favorably with countries such as Mexico and Brazil, but still shows greater concentration than in India, Pakistan and Bangladesh with large masses equally destitute, or with countries such as Korea and Taiwan where relatively high employment levels have promoted better income distribution.

A further breakdown in income distribution data for Sri Lanka is available (Table 2) for income receivers showing relative shares and change for the urban population, estate sector and remaining rural population. The concentration ratio for the urban population is virtually identical to that for the island as a whole. The rural sector, with about 70% of total population, had a lower degree of income concentration in 1963 than the urban population, and has shown roughly the same relative change in respect to reducing income concentration during the 10 year period. The estate population, however, is the one sector where the trend has been in the opposite direction, towards greater income concentration. Between 1963 and 1973, the share of total income received by the lowest 40% of the estate population has declined from about 23% to 19%. The decline, to a large degree, reflects Government intervention to restrain increases in wages of estate workers in the interest of improving estate crop productivity. For example, tea pickers, who are predominantly from the Tamil minority group, have, at Rs. 4 to 5 per day, the lowest regulated wages of any sector of the economy.

Income Distribution and the Paddy Farmer

On the basis of 1973 income distribution data, average income can be derived for each decile of spending units. These derived figures are shown in the last column of Table 1. An estimate of earned or imputed income for paddy farming then permits, on a very crude basis, locating a farmer with given extent of land in the income spectrum. The results should, however, be viewed only on the most tentative basis owing to the wide variation in cultivation practices, amount of inputs, and differences in yield. For example, major variations, even under normal weather conditions occur between farmers in the dry zone (principal paddy producing districts) and the wet zone. In the latter, farm sizes tend to

Table 2

Percentage of Total Income Received by Each Tenth of Income Receivers

Deciles	Urban		Rural		Estate	
	1963	1973	1963	1973	1963	1973
Highest 10	42.78	29.99	34.23	27.27	24.87	31.79
Second	15.64	15.42	16.51	15.44	13.31	13.51
Third	10.77	12.17	12.35	12.72	11.21	11.12
Fourth	8.31	10.25	9.96	10.68	10.42	9.53
Fifth	6.64	8.68	8.11	9.16	8.71	7.99
Sixth	5.13	7.45	6.45	7.79	8.71	6.91
Seventh	4.28	6.25	5.04	6.42	7.33	6.16
Eighth	3.16	4.75	3.73	5.18	6.86	5.58
Ninth	2.00	3.42	2.54	3.53	5.56	4.61
Lowest	1.29	1.70	1.08	1.81	3.02	2.59

be substantially smaller, cultivation is more labor intensive (but with more family labor and less hired labor), and a greater proportion of production is consumed on the farm. Yields per acre show marked variations, ranging between 30 and 90 bu/acre, not only season-to-season, but from district-to-district, with the highest yields generally occurring in the dry-zone areas when adequate irrigation facilities are available.

With these caveats, returns to a one acre farm can be estimated as follows: average yield, based on island wide statistics, under normal rainfall conditions, amounts to 45 bu/acre. At a procurement price of Rs. 33/bu., the gross value of the crop, whether commercialized, or largely consumed on farms, as is likely in the case of the small farmer, would amount to Rs. 1485. Although the procurement price is referred to as a "guaranteed price", it is actually a legal ceiling price; and gross returns per acre could be raised to the extent that paddy is sold outside of Paddy Marketing Board channels. The main impediment to doing so is Government controls (including road blocks) to prevent transporting paddy across district lines.

In respect to costs of production, the paddy farmer appears to pay no taxes either because of legal exception, as in the case of paddy delivered to the PMB, or because of de facto exemptions owing to the political difficulties inherent in tax collection. He also incurs no expense related to water use, including that provided by facilities built and maintained by the Government.

On the other hand, fertilizer, even with the 30% subsidy on paddy mixtures, now constitutes a major cost input. On the basis of recommended applications, this would now cost well over Rs. 200/acre. The one acre farmer, however, relying to a greater degree on older paddy varieties less dependent on fertilizer use, may meet only half the recommended application. For the purpose of the calculation, 1.9 cwt/acre at Rs. 94/cwt is assumed. Chemicals, seed, and the cost of draft animals or mechnical power have all risen substantially during the past two years; and the total cost of these inputs may now amount to as much as Rs. 150/acre. The larger farmers would tend to use more mechanical power substituting both for draft animals and for hired labor, with the result of somewhat lower total cost per acre.

Hired labor constitutes the most important variable cost, with the amount of hired labor per acre increasing with the size of the farm, although total labor intensity (including family labor) tends to decline. On the basis of survey data, 50 man-days per acre, however, seems to be a reasonable average. With the cost of hired labor having risen during the past two years from about Rs. 5 to Rs. 8/man-day, the present cost of hired labor can be estimated at Rs. 400 per acre.

Net returns per acre-crop would therefore be:

		Rs.
Gross return (45 bu x Rs. 33) =		1485
Fertilizer (1.9 cwt x Rs. 94) =	180	
Seed, cultivation, misc. =	150	
Hired labor (50 days @ Rs. 8) =	400	
Total cost of production		730
Net return per acre-crop		755

Since the total cost of inputs have increased by roughly the same amount as paddy prices, net returns per acre are not appreciably greater than what would be calculated on the basis of prices two years ago.

Assuming that the land is double-cropped, total returns for the land and family's labor would be on the order of Rs. 1500 annually per acre. While acreage and average returns on the second paddy crop are generally lower, the difference is probably more than compensated through supplementary household income, including family labor hired out to neighbors and some vegetable production. In addition, of course, household income for a one acre paddy farm is also supplemented by the food subsidy program for which the free rice ration alone has a value at current prices of about Rs. 500, assuming an average of 5.2 members per farming household.

Against the derived average income per decile for spending units shown in Table 1, a paddy farming household with one acre would find itself in the second lowest decile on the basis of agricultural returns, and the third lowest with the food subsidy taken into account.* Assuming that net returns per acre are roughly proportional to the extent of land under cultivation, 2 acres of paddy would move household income for an owner-cultivator to above the lowest 40% of the population, and returns on 5 acres or more would move household income into the top 10% of the population.

Although yields per acre do not seem to correlate in any way with the size of the farm, i.e., small farms frequently have yields and gross returns per acre as high as any, production costs per acre or per bushel do decline, thereby tending to increase further net returns per acre on the larger holdings.

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* While the real value of the subsidy has been reduced, its monetary value has doubled over the past two years and exaggerates accordingly its importance in relation to income distribution data based on 1973 prices.

Taking the Rs. 1500 figure, nevertheless, as a reasonable estimate of the net income generated per acre of paddy, data on the number and size of land holdings provides an approximate indication of how many farmers are found at a given income level. Data on paddy holdings are, unfortunately, subject to a large margin of error in Sri Lanka (a thorough cadastral study has never been carried out) and extrapolated results from different sampling surveys do not yield highly consistent results. Results from the 72/73 pilot survey census of agriculture are shown in Table 3.

On the basis of these figures, the average holding is slightly less than 2 acres. In terms of distribution, about 17% of holdings are 1/2 acre or less, and comprise only 2/10 of 1% of total paddy land. (Since 1/2 acre is about the minimum amount of paddy necessary for household self-sufficiency, holdings below this level must be regarded as income supplements with alternative income necessary from other activities.) Holdings between 1/2 and 1 acre constitutes 23% of total holdings and 7% of total acreage. Similarly, holdings between 1 and 2 acres constitute 24% of total holdings and 16% of total paddy acreage.

Using these percentages, and Rs. 1500, for average per acre net income, 40% of paddy farm holdings constituting 1 acre or less would fall in the two lowest income deciles, and the nearly 2/3 of total paddy farms of 2 acres or less would all generate income below the mid-point of Sri Lanka's overall income distribution.

Conversely, the 1/3 of paddy holdings above 2 acres, and comprising in the aggregate 3/4 of total paddy land, can all be estimated to generate income in the middle and upper income ranges for Sri Lanka. Tenancy arrangements, however, although exceedingly complex with every possible variation of owner-tenant combination, appear to apply to about 1/3 of total paddy holdings, reducing gross income to the operators by 30% or so on the average through rent or other crop sharing arrangements. While the net effect cannot be readily assessed in terms of income per acre, it confirms the general notion that at least 2/3 of Sri Lanka's paddy farmers fall in the lowest 40% of the population in terms of household income.

II. Fertilizer Inputs - Cost of Fertilizer Distribution

All fertilizer imports into Sri Lanka are handled by a state monopoly, the Ceylon Fertilizer Corporation (CFC). Urea and other mixed fertilizers intended for paddy farming are then distributed to district warehouses under the responsibility of the Ministry of Agriculture's Agrarian Services, now called the Rural Institutions and Productivity Laws Division (RIPL). The RIPL, in turn, is responsible for ensuring that fertilizers are available for the village level Coops in proper time and volume.

Table 3

Size and Number of Paddy Holdings

Size	Number (thousands)	Total Acreage (thousands)
below 1/8	12.0	0.8
1/8 - 1/4	29.1	4.3
1/4 - 1/2	96.7	27.4
1/2 - 1	187.4	111.0
1 - 2	196.4	247.2
2 - 3	110.5	237.4
3 - 4	63.7	200.3
4 - 5	58.3	237.5
5 - 10	50.3	293.8
10 - 20	8.7	107.2
20 - 25	1.3	27.5
Unspecified and expropriated	9.1	59.7
Total	823.7	1,548.0

The staged approach to fertilizer distribution gives an initial impression of overlapping authorities and unnecessary duplication of administration, handling and transportation costs. Closer examination, however, indicates that the fertilizer distribution system operates comparatively well, at least to the level of the RIPL district warehouses, and that while some savings could no doubt be obtained through a more integrated system, present farm-gate prices could probably not be reduced by more than 5% without also substantially curtailing the labor intensive handling methods now being used. The CFC has not published an annual report for the past two years, but on the basis of interviews, sufficient information was obtained to construct the break-down of distribution costs shown in Table 4.

Given recent import prices, the total of all additional CFC charges (Rs. 700) amounts to 1/4 of the final retail price, or an increase of 1/3 over the basic CIF cost. If import duty, the single largest item in distribution expense, is taken out, the remaining charges represent an increase of 21% over the CIF cost. Shadow-pricing imports at the FEEC exchange rate, rather than the official rate actually used for fertilizer, reduces the percentage increase of distribution charges to 13%.

After import duty, transportation costs are the next largest item in distribution expense, amounting to Rs. 11 per ton from port to CFC warehouse and Rs. 45 per ton from CFC warehouse to RIPL district stores. A separate figure could not be worked out on a tonnage basis for transport from district to Coop Stores, but this probably does not amount to more than Rs. 15 per ton of RIPL and Coop overhead expenses. Total transport costs can be roughly estimated at Rs. 3 per ton-mile. The bulk of fertilizer is now carried by private contractors under competitive bidding procedures.

Handling costs which can be separately identified amount to only Rs. 35 per ton. Additional handling charges included in CFC, and RIPL overhead no doubt double this figure. Fertilizer imported in bulk increases stevedoring expense by Rs. 21/ton, in addition to any increase in demurrage charges incurred as a result of longer unloading time. Transportation and handling costs might be reduced by moving bagged fertilizer directly from the port (or from CFC warehouses) to the Coops, short-circuiting one or two transit points; but officials at both CFC and RIPL felt this would not be feasible -- primarily because of the very limited financial and storage capacity at the Coop level.

A profit margin of Rs. 35 per ton along with a contingency reserve of Rs. 5 per ton are factored into the CFC selling price, but in practice the corporation operates at a loss. Actual operating results could not be obtained to show the subsidy element in the CFC deficit.

Table 4

Fertilizer Distribution Costs

		Rs./Ton Urea	As % of Agrarian Selling Price
I. Ceylon Fertilizer Corp.			
Cost, Insurance & Freight (1)		2078	77%
Duty 12.5% CIF	260		
Rent & Dues to Customs	3		
Stevedoring (2)	19		
Transport to CFC Warehou	11		
Handling (3)	16		
Interest (4)	45		
Letter of Credit charges	21		
Business Turnover Tax	27		
CFC contingency reserves	5		
CFC Adm. overhead	31		
CFC profit margin	35		
	473		
CFC price to Agrarian Services		2551	18%
II. Agrarian Services (RIPL)			
Transport CFC to district warehouse	45		
RIPL overhead mark-up	89		
	134		5%
Agrarian Selling Price		2685	100%
Subsidy on Urea for Paddy	805		30%
Subsidized price to Coops		1880	70%
III. Coop Stores			
Mark-up 5%	94		
Coop price to farmers		1974	74%

1. Based on weighted average purchase price of $302 per ton for cost, plus freight at official rate (Rs. 6.46 = $1.00). Insurance adds Rs. 7/per ton.

2. Port unloading increases by Rs. 21/ - per ton for Urea in bulk.

3. Handling increases by Rs. 28/ - per ton for mixing and bagging.

4. Interest calculated at 7-1/2% p.a. for 3 months. Interest charges rise to 9% after six months.

At the present time, however, given the high level of stocks on hand, carrying charges resulting from penalty interest and storage charges in private warehouses (Rs. 2.50 per ton) are probably adding at least Rs. 20 per ton each month to CFC overhead. Since stock levels at the district stores also appear to be close to effective capacity, the CFC will have to continue to use private warehouses until draw-downs for the Yala planting season relieve the current need for additional storage capacity. Unless these additional charges are subsequently passed on through a higher CFC selling price, it may be assumed that the Rs. 2685 selling price will contain a hidden subsidy on the order of Rs. 100 per ton.

The main difficulties in the fertilizer distribution system seem to be at the district stores to Coop level. Compliance with the administrative procedures established by the RIPL to control the use of subsidized fertilizer poses a continuing problem especially for smaller farmers who are frequently unable to plan sufficiently far ahead to place fertilizer orders with the lead time the system seems to require. Secondly, limited financial resources and inadequate transportation equipment at the Coop level also appear to create frequent problems in respect to timely procurement and delivery. In a recent effort to alleviate these problems, a federation of Coops in the Hambantota district reportedly succeeded in pooling the financial and transport resources of a number of Coops; and through more efficient organization claims to have achieved a four-fold increase in on-farm fertilizer deliveries. This reported success is all the more impressive in that it was done in the face of the sharp increase in fertilizer prices.

Fertilizer Price Changes and Subsidies

Details on fertilizer price changes for the paddy sub-sector since July 1974 are shown in Table 5. The July 1974 prices reflect the simultaneous removal of the then existing Agrarian Services subsidies in conjunction with a three-fold upward revision in retail prices to reflect the increase in world market fertilizer costs. On a weighted basis, the July price hikes amounted to a 373% increase for all paddy fertilizers. For urea alone, the most important element in paddy fertilizers, the July increase amounted to 404%. As an off-set, paddy procurement prices were also raised from Rs. 30 to Rs. 33 a bushel. However, in the face of a virtual stoppage in fertilizer draw-downs, (which was probably due more to adverse weather conditions than to farmer resistance to the new prices), the Government felt compelled to re-introduce new subsidies in October 1974, despite the severe budgetary strain this entails. For urea, the new subsidy is Rs. 40.25/cwt or Rs. 805 per ton, reflecting a 30% reduction against the current RIPL unsubsidized selling price. Against the pre-July price, the current subsidized price of Rs. 1880 per ton for urea represents an increase of 253%.

Table 5

Changes in Fertilizer Prices issued for Paddy Cultivation

Price per Cwt.

Variety	1 Prior to 12th July '74	2 12th July to 8th Sept.	% Change 1 to 2	3 9th Sept. to 20th Oct.	% 1 to 3	Change 2 to 3	4 After 21st Oct. '76	% 1 to 4	Change 3 to 4
	Rs. Cts.	Rs. Cts.		Rs. Cts.			Rs. Cts.		
Urea	26.63	134.25	+404.1	134.25*	+404.1*	0.0	94.00	+253.0	—30.0
N.P.K. Pellets (Imported)	24.13	110.70	+358.8	110.70*	+358.8*	0.0	70.00	+190.1	—36.8
VI Mixture (with S.A.)	26.14	109.20	+317.8	123.35	+371.9	+13.0	84.00	+221.3	—31.7
VII Mixture (with S.A.)	15.38	48.10	+212.8	51.70	+236.2	+ 7.5	32.00	+108.1	—38.1
VIII Mixture (with S.A.)	26.38	113.25	+329.3	128.00	+385.2	+13.0	88.00	+233.6	—31.3
T.D.M.1 Mixture (with Urea)	24.32	110.70	+343.4	110.95	+343.3	+ 0.2	77.00	+191.0	—34.2
T.D.M.2 Mixture (with Urea)	26.00	110.55	+325.2	111.25	+327.9	+ 0.6	71.00	+173.1	—36.2
T.D.M.3 Mixture (with Urea)	25.00	93.20	+272.8	93.93	+299.8	+ 1.8	60.00	+140.0	—40.0
T.D.M.1 Mixture (with S.A.)	10.50	55.25	+426.2	73.00	+595.2	+32.1	73.00*	+595.2*	0.0
T.D.M. Mixture (with S.A.)	17.75	55.65	+213.3	72.60	+308.8	+30.5	72.60*	+308.8*	0.0
T.D.M.3 Mixture (with S.A.)	14.20	50.75	+210.8	71.50	+291.6	+26.0	71.50*	+291.6*	0.0
Sulphate of Ammonia	17.25	53.30	+209.7	73.10	+323.8	+36.1	73.10	+323.8*	0.0
N.P.K. Concentrated (Local)	n.a.	65.30	—	69.40	—	+ 6.3	69.40	—	0.0
VIII (Concentrated) ..	n.a.	n.a.	—	134.75	—	—	95.00	—	—29.5

*No Change.

Source: Ministry of Agriculture and Lands.

The unsubsidized prices of July 1974, did have the advantage, not only of economic pricing of imports, but also of eliminating price differentials between estate cultivation and paddy farming. Reinstitution of the subsidies has unfortunately also recreated price differentials with potential problems of sectoral leakage, and an increased administrative burden of trying to assure that each fertilizer is used for its intended purpose. The subsidized urea price, for example, does not apply to purchases by paddy farmers for vegetable cultivation. Conversely, higher subsidies for fertilizers intended for estate cultivation (50% against 30% for paddy farming) may stimulate leakage towards paddy farming.

To the extent that such leakages occur, financial returns to paddy farmers should increase, but probably at the expense of total agricultural returns, since the leakages are likely to result in the application of less appropriate fertilizer mixes.

Much more importantly, however, the differential on fertilizer subsidies in favor of estate crops raises an apparent inconsistency in respect to the Government's announced policy of attaching priority to increased rice production, and may be compounding the psychological problem of farmer resistance to increased fertilizer prices. Government officials interviewed, especially those involved with paddy farming, appeared very concerned over this issue, but generally felt that nothing could be done about it at the present time.

The price differentials do not result from a deliberate, overall policy decision, but rather from separate policies adopted in respect to estate cultivation on the one-hand and overall budget limitations on the other. Under a package incentive program, export producers are provided substantial fertilizer rebates; and it is feared that any reduction in this program would adversely affect export earnings. At the same time, the critical budgetary situation the country now faces makes it practically impossible to eliminate price differentials by the less desirable action of increasing the subsidies on fertilizers intended for paddy farming.

Impact of Price Changes on Fertilizer Usage

The very substantial decline in fertilizer usage this year cannot be attributed on an empirical basis to the price increases since, on the aggregate level, adverse weather conditions have made fertilizer use, at whatever price, essentially irrelevant in many areas of the country. The question can still be asked, however, as to what might be expected in respect to fertilizer demand when inadequate rainfall does not impose the same constraint, and also what effect the increased prices should have in respect to shifts in usage from less efficient to the more productive farmers.

If the price relationship between farm inputs and crop value is reasonably beneficial as appears to have been the case before July 1974, one could expect demand for a single input such as fertilizer to be highly inelastic over a comparatively broad range of price variations; i.e., with no real substitute for the fertilizer, the quantity demanded would remain more or less constant despite changes in its price. Although this assumption is not entirely realistic in the case of the sudden and quantum jump in prices which has occurred, it does permit a quick assessment of the profitability of fertilizer use by comparing the increased cost of fertilizer against the increased revenue derived from higher paddy procurement prices.

Data from several agricultural survey studies suggest that average fertilizer use has been on the order of 1.9 cwt per acre of paddy. At the pre-July 1974 price, this volume would have cost the farmer Rs. 50 per acre. At current subsidized prices, the same volume of fertilizer would cost nearly Rs. 180, or an increase of Rs. 130. Against an average yield country wide of 45 bu. per acre, before the current drought, the increase in paddy procurement prices from Rs. 30 to Rs. 33, would raise gross revenue per acre by (45 x 3 = Rs. 135) or slightly more than the increase in per acre average fertilizer costs. The "average" farmer, on the basis of this calculation is no worse off and would presumably be inclined to continue to use the same volume of fertilizer with the same net returns as he had before the price changes. By the same token, any farmer enjoying yields above the 45 bu/acre average would find his profit margins improved, while those below would find them eroded.

The Government's choice on the appropriate subsidy level may very well have been based on a similar calculation. Prior to re-installment of the subsidy, analysis done by the economic research department of the Central Bank of Ceylon suggests that the "offsetting" yield necessary to leave farmers no worse off with unsubsidized fertilizer was on the order of 60 bu/acre. Since the majority of small farmers fall below this yield level, the Government was clearly under strong pressure to re-introduce a subsidy.

Profit margins alone do not, of course, show whether it is advantageous to increase or decrease the amount of fertilizer actually used, since decisions on the volume depend not only on the relative price changes, but also on the yield difference fertilizer affords. On an aggregate basis, fertilizer use in Sri Lanka is thought to provide

an average yield increase over its non-use of about 5 to 6 bu/acres.* With a procurement price of Rs. 33/bu and fertilizer usage of 1.9 cwt/acre, yields would have to vary by less than 5.4 bu/acre, at the subsidized price and by less than 7.7 bu/acre at the unsubsidized fertilizer price before suspension of fertilizer would be warranted. If the "average" farmer, however, perceives only a 5-6 bu/acre yield attributable to fertilizer, he might be expected to be more or less indifferent, while at the unsubsidized price he would appear to be better off to save the cost of fertilizer.

The actual yield difference afforded by fertilizer use for each farmer would of course vary considerably from the 5-6 bu/acre figure. Farmers with below average yields may well find (or at least believe), that fertilizer has less than a 5 bu impact on their yields and will not respond to fertilizer availability even at the subsidized price. Conversely, farmers with substantially higher yields, who would customarily use fertilizer in conjunction with more assured water, higher yielding varieties, agro-chemicals and better management techniques, no doubt see that fertilizer constitutes a major input for their production, and would find continued, if not increased fertilizer use to be warranted even at the unsubsidized price.

The net effect of the changes in paddy procurement and fertilizer prices can, therefore, be expected to shift fertilizer use from the less efficient farmers to the more productive. This is consistent with the objective of maximizing the use of a scarce, or least more expensive resource; and to the extent that the more efficient farmers are also those producing a commercial surplus, it is also consistent with the national goal of increasing food production for the non-farming population.

It is conceivable however, that total paddy production could actually be hurt, if the shift to commercial producers were significant enough, and if the marginal return on fertilizer use is substantially lower than the average return. That is, if there is a fertilizer response curve which shows sharply diminishing returns, total production might

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* This figure should be viewed with a great deal of caution, since there is very little in the way of empirical evidence to support it. Several research organizations with which this was discussed maintain there is no way of determining actual fertilizer response in Sri Lanka owing to the wide differences in cultivation practices and the number of imponderables affecting actual on-farm fertilizer use. In a controlled environment, fertilizer would no doubt offer a substantially higher yield difference; but the uncertainty of sufficient and timely rainfall might well introduce a probability factor of as much as 50% in farmer perception of fertilizer yield response. Readers of this paper have suggested by extrapolation from other Asian experience, that the fertilizer response ratio (at 1.9 cwt/acre) should not be less than 12 bushels/acre and probably is higher. The low response in Sri Lanka warrants further examination to see if it is actually as low as it appears from aggregate data, and if so, what must be done to improve it.

actually be raised by spreading a given amount of fertilizer evenly over all farms, including both inefficient and efficient producers rather than concentrating its usage on the latter.

While the impact on total production of a shift in fertilizer use to commercial producers may be somewhat ambiguous in respect to the effect on total production, it is unfortunately much more certain that the shift will not support the social objective of improving the economic situation of poorer farmers. To the extent that the shift occurs, the poorer farmers will be worse off in relative terms, and in comparison to the pre-July 1974 situation, they will also be worse off in absolute terms.

The alternative to the present fertilizer subsidy would be a further increase in the paddy procurement price by another 1 1/2 Rs. to Rs. 34.5 bu. At a desired total commercial procurement level of say 45 million bushels, the additional cost would be on the order of Rs. 70 million. Against this, the current subsidy of Rs. 800/ton would be Rs. 80 million (assuming 100,000 tons required). Even given the margin of error inherent in these figures, it would appear that the budgetary cost would be no greater if fertilizer were fully priced with the subsidy differential added to the current Rs. 33 paddy procurement price. An increase would also be justified on foreign exchange grounds since the shadow-priced value of imported rice is about 50% higher than the rupee value of rice under the current procurement price.

Full cost pricing of fertilizer would, however, accelerate the shift in fertilizer use away from farmers whose fertilizer response is below 8 bu/acre. At the same time, any further increase in the procurement price is unlikely to have much real impact on the poorer farmers who are producing primarily for their own consumption, and as such, are likely to be much less influenced by the procurement price than by the increased cost of inputs.

Fertilizer Stocks and Requirements for Balance of 1975

The failure of the Maha rains, in conjunction with resistance by farmers to the quantum jump in fertilizer prices, have together resulted in a 75% decline this year in the take-down rate of paddy fertilizers. On the basis of information obtained from CFC and RIPL officials, current stocks are estimated as follows (February 1975):

	Paddy Fertilizers	Of Which, Urea
CFC and private godowns	55,000	38,000
RIPL	35,000	10,000
Coops	10,000	10,000
	100,000	58,000

The Director of Marketing for the CFC also indicated that the corporation now has on hand sufficient supply of all types of fertilizers, except urea, to meet Sri Lanka's requirements through the balance of 1975.

In respect to urea, the problem of estimating requirements is compounded by the uncertain outlook of the Yala season (April-July) given the depleted state of the storage tanks. On the assumption, however, that sufficient rains do occur at the outset of Yala, there will be sufficient paddy fertilizers on hand to cover this crop plus half of next Autumn's anticipated Maha requirements. Additional urea requirements for 1975 are accordingly estimated at 30,000 to 50,000 tons. On the basis of recent CFC purchase prices, rapid utilization of the AID fertilizer loan would cover 50 to 75% of the estimated additional 1975 urea requirements. While carrying charges on present fertilizer stocks suggest that further arrivals should be deferred until stocks are drawn down next Autumn, the possible savings that may be obtained through opportune purchases made earlier could substantially outweigh any additional carrying charges the CFC would incur.

Since urea is the only import requirement now foreseen, and since this is directed entirely to the paddy sector, one can be reasonably certain that any fertilizer import under the AID loan will be to the benefit of paddy farmers as opposed to other sectors. Moreover, given the present subsidized price differentials between the paddy sector and estate cultivation, any inter-sectorial leakages that occur should be from the estate sector (e.g., coconuts) to the paddy sector, rather than vice-versa.

In respect to differentiating among paddy farmers, however, there does not appear to be any feasible way in which AID financed fertilizer can be directed to the poorer farmers as opposed to the more productive. Possibilities for attempting to do so through specific allocations, variable subsidies, or special credit facilities were explored with GSL officials, but the administrative problems inherent in any such effort together with the priority now being placed on increased production make any organized effort to favor the poorer farmers as a distinct group pragmatically unrealistic through such approaches. However, an expanded effort through the new Agricultural Productivity Centers and extension services focussed directly on the small farmer would help to overcome the psychological resistance to higher fertilizer prices as well as improve yield responses through better utilization of fertilizer mixes.

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