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AN EVALUATION REPORT OF THE P.L. 480 TITLE II PROGRAM IN SRI LANKA

Submitted to

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Agency for International Development
Under Contract AID/SOD-PDC-C-0003

by

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Consulting Economists
Washington, D.C.

May 23, 1978

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INTRODUCTION

In accordance with the terms of a contract between Robert R. Nathan Associates, Inc. (RRNA) and the United States Agency for International Development (USAID), an evaluation team visited Sri Lanka between April 1-23, 1978 to review the P.L. 480, Title II program there. The team included Ms. Phylicia A. Fauntleroy, RRNA economist and team leader; Dr. Paul Weswig, nutritionist and consultant to RRNA; and Mr. Edwin K. Fox, Evaluation Officer, Bureau of Private and Development Cooperation at AID. In addition Mr. Joseph Gunn, Vice President of RRNA, visited Sri Lanka between April 10-13, 1978.

This evaluation report is based on two principal sources of information. First, the evaluation team gathered and reviewed numerous reports and studies on a broad range of subjects pertaining to the Sri Lankan program. Interviews were conducted in the American Embassy, USAID mission, CARE, Government of Sri Lanka (GSL) Ministries (particularly Education and Health), other bilateral and multilateral donors, as well as recipients and personnel directly involved in the food distribution. A list of all persons contacted during the evaluation is appended to the report.

Second, the evaluation team visited a cross section of health centers and schools throughout much of the country including 12 of the 23 administrative districts spanning both the wet and dry zones and containing both some depressed and some developed areas.[1] Thirteen health centers of various types and 13 schools located in urban, rural and estate areas were also visited. Some centers and schools were participating in either the Maternal/Child Health (MCH) or School Feeding projects or both; some were currently nonparticipants but desire to participate. In some instances the distribution of Thriposha or the biscuit were observed, although on other occasions only discussions with recipients and staff were held.

CARE assisted the team in refining the scope of the framework both by offering constructive criticism or confirming the basic structure which was proposed. Our scope of work matched the issues and organization of the CARE program quite precisely.

The team wishes to extend its gratitude to the many persons who cooperated with this evaluation. Special thanks go to all the CARE staff ranging from the Director to nutritionists, secretaries, and drivers who quickly responded to every request we made no matter how tedious. The team feels particularly fortunate to have had the guidance of both Dr. Beatrice de Mel, nutritionist with the Ministry of Health and Mr. Francis Kulatunga, who patiently guided the team on the field visits.

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1. Districts in which activities were reviewed are Colombo, Kegalle, Kandy, Nuwara Eliya, Badlulla, Ratnapura, Monaragala, Kalutara, Galle, Kurenegale, Anuradhapura, and Matale.

SUMMARY AND CONCLUSIONS

Despite Sri Lanka's extensive health, education and transportation systems compared both to other Asian countries and to countries of comparable per capita GNP, malnutrition is a problem documented by most nutrition surveys since 1970. Intakes of calories and proteins are inadequate, particularly for low income groups, while intakes of other nutrients (calcium, vitamins, etc.) are inadequate for all income groups. The problem is pervasive, both geographically and sectorally (urban, rural, estates).

The full eradication of malnutrition requires a combination of health, nutrition, water and sanitation, education and employment programs, with benefits accruing only in the long run. However, for more short or medium run purposes and goals, supplementary feeding programs are warranted. Despite a controversy over whether malnutrition is or is not a serious problem, there is a consensus among all relevant foreign and domestic agencies that the Title II program operated by CARE is adequately fulfilling this need. Thus, no other agencies are considering any involvement in this area, nor is there any need for another voluntary agency to become involved. It is generally agreed that the CARE program is fully utilizing the logistic capacity of Sri Lanka to support such a program.

The Title II program in Sri Lanka is composed principally of Maternal Child Health (MCH) and School Feeding projects. The MCH organizational concept, however, is weak primarily due to weaknesses in the extensive but inefficient health delivery system. Meanwhile, the commodity emphasis is contrastingly strong because of CARE's intensive orientation of the program in this regard. Impressive progress has been made in the very recent but successful introduction of a virtually new blended food product, Thriposha,[1] throughout much of the country.

The School Feeding project has the exactly opposite structural emphasis. The organizational structure is more sound while the total product, a biscuit, requires further improvement.

For program direction purposes, the evaluation team recommends that more time and emphasis be placed on building up the MCH concept as a spinoff of Thriposha, and improving the quality and nutritional contribution of the School Feeding project. The latter is likely to involve not only improvement of the biscuit but also adding more local foods.

The overdependence of the program on Sri Lankan Government and foreign inputs further weakens the Title II program. There is a definite need for more development of the program from the bottom up, i.e., introducing more direct community

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1. Thriposha, meaning "three nutrients," is a dry, precooked, fortified food. Originally intended as a weaning food, it is actually consumed by all age groups because it can be prepared so many ways -- hot or cold, as a drink, or mixed with other foods and soups.

involvement. The School Feeding project needs more local participation and foods, and MCH activities could benefit from the assistance of community health workers.

One way of increasing local participation in the MCH operations would be for community workers trained by Sarvodaya, (a leading community development organization) to be used in Title II for organizing local communities in providing more local support and inputs as well as assisting with food distribution. In this way Sarvodaya workers would have viable projects with which to become involved, and Title II would have the local input it needs. This recommendation should be followed up by the CARE director with the aim of strengthening local surport, participation and input into the project.

The CARE staff has excellently managed and operated the Title II Program in Sri Lanka. It fully controls and evaluates all aspects of the program and properly monitors all problems and remedies on a regular basis. There was little in the evaluation coverage of their operations and management aspects which they had not also considered and acted upon. They regularly study various program aspects like the distribution network, identify the principal bottlenecks and remedies, and then implement the necessary action. The team was especially impressed with CARE's entire planning process.

Despite the use of an experimental process for producing the Thriposha, CARE has implemented an economically viable production and processing system. The distribution of the

Title II foods from the United States to Sri Lanka and the dissemination of the biscuit and Thriposha are undertaken on a regular basis and are not seriously hampered by anything other than normal daily mishaps. CARE maintains proper financial and accounting records, program statistics and data on number of recipients, centers, geographic distribution, etc. These are updated on a regular basis. Finally, CARE has developed a monitoring and evaluation system for Thriposha which is well integrated into such activities as selection criteria for beneficiaries, and charting recipients' health and nutrition progress. The multi-functional system makes feasible the planning and implementing of several effectiveness studies to be undertaken within the next year or two.

The fact that the program is so impressively good does not mean that there are not problems or areas needing strengthening. Some were already recognized by CARE and included in their MYP while others evolved on the basis of the present evaluation and discussions with CARE staff and others. The evaluation is intended both to corroborate and to criticize program content, and to assist the managers in dealing with some problems so the program can continue to progress. Thus, the team recommended a few management and operations improvements.

The School Feeding project has the most serious weaknesses. An ongoing monitoring and evaluation system should be introduced to enable the identification of a better selection criteria and the charting of each recipient's progress, to assess the nutritional contribution of the

biscuit. The system is also required to evaluate ultimately the Title II program's impacts at the project level. For the MCH the principal recommendation is to improve the supervision by medical officers of the Thriposha distribution, including a check that growth cards are being interpreted correctly.

It is also recommended that CARE continue to maintain cost information for all Title II program sources on a regular basis. This will serve as a check on program efficiency and become a basis for periodic cost effective assessments.

Program effectiveness has been measured in terms of its outreach, acceptability of products, community attitudes, nutritional contribution of biscuit and Thriposha, domestic production and consumption, and educational improvement.

The Title II program reaches nearly 10 percent of the population. Eighty percent of the population is categorized as poor, however, and an estimated 25 percent malnourished. Among the Title II target groups -- preschool and primary school children and pregnant or lactating women -- the percentages are higher. A coverage of 10 percent is not excessive in terms of need. Morever, enlarging the program's outreach does not necessary imply that more Title II foods are required, at least not after the next few years as Thriposha can be made entirely from domestically produced ingredients. The School Feeding project can and should utilize more local food inputs.

The program has been highly acceptable in most communities. In fact, the lack of the Thriposha or biscuit is the principal problem in some areas, not too much of it. Community attitudes have been highly supportive although this now needs to be translated into more community input.

The Thriposha significantly increases the nutritional intake of its target group while the biscuit is not sufficient, even in the maximum ration, to fill the nutritional gap in the primary school children. Additional locally available foods such as bananas or pineapples are warranted.

Title II imports do not hamper or help domestic production but they have been significant in developing new consumption habits. The shift to ICSM is a step in the right direction when totally local products will be distributed. There has been no study determining the effect of foods on learning and school attendance, but almost all teachers interviewed thought that attendance was higher when biscuits were distributed.

The evaluation team recommends that several studies be undertaken by CARE, MOH and MOE jointly. Conversations with CARE staff indicate these would be feasible in terms of current personnel and budget levels.

Because of the controversy over the School Feeding project, the team recommends that a limited nutrition survey be undertaken to (1) substantiate prevalence of malnutrition; (2) indicate whether recipient levels are currently too high or too low; (3) get a more accurate assessment of which

schools ought to be in the project; and (4) assess to the extent possible the effectiveness of the project in the last few years.

On an even more limited basis there now appear to be sufficient data to assess the nutritional impact of Thriposha. Growth cards have been maintained in enough centers to get an adequate sample and a good cross-section among rural, urban and estate sectors.

Most recommendations can be implemented within the next year. However, the team recognizes that for some, more substantial shifts in program or project direction a longer horizon is required. The team makes these recommendations, however, in order that a start on the planning and implementing processes for such changes may be made. The team feels especially confident that CARE can handle this. After all, within five years they have successfully developed, produced, processed and distributed a totally new product beginning virtually from ground zero. This is quite an achievement. The CARE program is an excellent example of what can be done when there is a strong commitment to reach program goals.

SUMMARY TABLE: TITLE II PROGRAM ANALYSIS
SRI LANKA

Chapter	Relationship	Issue	Level of Analysis	Analysis & Conclusions	Recommendations
I. The Nutrition Setting	Environment & Program	To what extent is malnutrition a problem in Sri Lanka?	Program	In the aggregate nutrition levels appear to be adequate. However, these figures mask a deteriorating nutrition problem especially among lower income groups in rural and urban and estate areas. Nutrition surveys since 1970 document this problem.	There is a malnutrition problem which should be the target of program action such as CARE's. No other voluntary agency is required. Don't emphasize only second and third degree malnutrition; first degree also important and will become increasing so as recipients improve. Supplementary feeding program without substantial clinical support might be more suited to first degree than more serious cases. This process should be monitored.
		To what extent is a supplementary feeding program needed in this context?	Program	Yes, program is needed at least to meet shortrun purposes & if it does not divert needed resources which can be used for more deep-rooted causes & broader objectives.	
II. Program Structure	Description & role of elements	What is the structure of the program & is it adequate to fit the nutritional needs of the country?	Program & Project	The program is designed for MCH & School Feeding projects. MCH concept weak but commodity - Thriposha strong. Just reverse in School Feeding - structure stronger than nutritive value of biscuit.	Need strengthen MCH infrastructure & improve nutritional content of biscuit in School Feeding project. (See below for specific suggestions)
		What are the role of the participating agencies and what changes should be made?	Program & Project	AID provides Title II commodities CARE responsible for all management & operations including processing goods & coordinating inputs of other agencies. Ministry of Health & Education provide institutional infrastructure & responsibility for distribution of foods.	USAID should be monitoring Title II program. CARE should encourage participation of Sri Lankan to learn the management & operations of all aspects of the program. Ministry of Health needs to strengthen its infrastructure and food distribution responsibilities. Reorganized Ministry of Education and CARE need to establish a working relationship.

Chapter	Relationship	Issue	Level of Analysis	Analysis & Conclusions	Recommendations
	Inputs & Program Needs	What are the inputs & are they sufficient	Program & Project	Title II foods adequate but need more local food input, especially in School Feeding. Because of lack of enough MOH, train community workers to help perform duties.	Take steps to increase local food inputs into School Feeding. Urge training of community health workers to improve personnel input of MCH. For MCH, team agrees with phasing in of more local food and phasing down of ICSM. Need to improve health units' quality and efficiency.
		What are outputs & are they sufficient?	Program & Project	Amount of Thriposha not a problem to date because recipient levels well geared to production levels. Because of addition of 5 year olds in program, number of biscuits per child reduced & this amount is insufficient relative to nutrition needs.	None
				Need improved health & nutrition education in both projects. This is weakest part of program.	Take steps to strengthen health & nutrition education aspects of both projects.
		What are recipient levels and are they appropriate?	Program & Project	MCH reaches 250,000 recipients which is less than approved level because of weaknesses in delivery system. School Feeding reaches more than approved 950,000. There are clearly more needy recipients for MCH which project will be reaching.	Continue to expand recipient levels for MCH consistent with delivery system capabilities and production of Thriposha. Plans to build another plant will aid this.
				Not certain of appropriate level of School Feeding.	Need updated study of nutritional status of primary school children to determine appropriate recipient levels.
III. Policy Making Component Analysis	A. Title II & General Economic Policies	To what extent are policies consistent with Title II program?	Program	High priority on health & education & rural programs. Increasing interest in estate areas.	None
				Lack national health & nutrition policy	Need national health & nutrition policy particularly as it relates to Title II.
				Newness of government complicates current efforts to expand or improve GSL participation	Need to establish a working relationship with new MOE senior officials.

Chapter	Relationship	Issue	Level of Analysis	Analysis & Conclusions	Recommendations
				Sri Lanka has chronic food deficit which has led to large imports. Import policy favorable to Title II but not necessarily for other development & economic purposes.	Despite favorable import policy, Title II program should be directed toward more local food input.
				There is lack of community development orientation to improve program from bottom up.	Introduce community development focus perhaps by working with Sarvodaya or other such organizations in obtaining more local inputs.
	B. Goals & Purposes & Impact on Program & Projects	To what extent are goals & purposes compatible among participating agencies? What are implications for program?	Program	General consensus on most goals & purposes. Deviations arise when GSL and/or CARE want to extend the the program further than AID desires. Major example of this is School feeding project & recipient levels.	
					Need better identification of number of primary school children in need in order to assess appropriate recipient levels.
	C. Priorities of participating agencies among projects	To what extent are project priorities consistent among participating agencies & what is impact on program?	Project	AID and CARE view MCH as more significant than GSL which views its School Feeding as equally important. CARE not consider its emphasis on MCH to imply School Feeding project should be phased down. CARE places greater emphasis on commodities it produces than on health & educational structures but it sees the need to strengthen these among GSL Ministries as being a principal area of concern in the future.	
	D. Policy Guidelines	To what extent do projects follow Title II policy guidelines?	Project	MCH recipients not cover all women of childbearing age & can only be implemented gradually because of production & delivery system constraints.	Before recommending this change be implemented, AID needs to assess by country & globally whether Title II commodities are available to be distributed to a larger group of women. Its not certain the change is feasible even from AID's perspective. If not, AID must establish guidelines or criteria for more consistent recipient selection.

Chapter	Relationship	Issue	Level of Analysis	Analysis & Conclusions	Recommendations
				School Feeding project includes 5 year olds, but USAID agreed to this.	Need to increase production of biscuits so that addition of 5 year olds does not mean biscuit per recipient is less.
				USAID not sufficiently involved in policy formulation of program and its monitoring.	USAID needs to focus more directly on its policy making & monitoring role.
IV. Operations and Management	Inputs & Outputs	To what extent is each function fulfilled?	Project & Activity		
		Regulation & Control		CARE has good control over its program responsibilities & runs an efficient & imaginative operations system.	CARE director should have a Sri Lankan counterpart who can learn how to operate such a program.
				CARE regularly monitors and supervises the activities. MOE adequately regulates biscuit distribution.	Need to check that growth charts are being interpreted correctly as part of supervision.
				Inadequate regulation of Thriposha distribution by MOH.	MOH needs to improve its regulation of Thriposha distribution.
		Are there criteria for selecting recipients and are these adequate?	Project & Activity	CARE has placed great emphasis on selecting recipients using medically determined criteria. This seems adequate for MCH children. Hemoglobin tests for anemia are adequate but unsure of correlation between anemia & malnourishment. This has not been tested.	System for MCH sound therefore no changes recommended.
				No one has found satisfactory criteria for selecting recipients of School Feeding project although present system is fair compromise.	Need a new study of primary school children nutritional status to determine better criteria for eligibility in program.

Chapter	Relationship	Issue	Level of Analysis	Analysis & Conclusions	Recommendations
		Production & Processing	Project	Excellent innovative system. No insurmountable problems other than daily mishaps. Much handling and inadequate packaging led to high biscuit breakage.	None. Agree with plans to build another production plant. Need better packaging (or changed shape of product) to reduce breakage of biscuit.
		Distribution	Project & Activity	CARE monitors shipment of food from U.S. to Sri Lanka while AID pays for it. Distribution to schools more efficient than MCH because MOE has larger budget & hence can pay truckers more for transport. Storage & warehousing adequate. Storage periods not excessive.	
		Cost and Budgeting	Project & Activity	Good financial records & statistical data on projects and activities	CARE should maintain financial and cost data for all sources of inputs into program and periodically review.
		Monitoring & Evaluation	Project	Good monitoring & evaluation system for MCH. Lack monitoring & evaluation system in School Feeding project	Need to institute monitoring & evaluation system for School Feeding project. To start with a limited school survey of nutrition & health status of children, community characteristics, etc. be undertaken. CARE should start maintaining data by sector as preparation for effectiveness studies.
V. Effectiveness	Program & Environment	To what extent is program reaching appropriate target groups?	Program & Project	Program extended throughout the country including critically depressed areas. Pregnant or lactating women, primary school children and preschool children are the neediest groups. School Feeding may be reaching more than needy but MCH reaching less than 30 percent of needy. This is why CARE plans expansion of MCH including commercialization of Thriposha.	Expand program further into estates and perhaps Mahaweli resettlement scheme areas. Need updated study of nutritional status of primary school children to determine those in need. Agree with CARE plans for MCH.

Chapter	Relationship	Issue	Level of Analysis	Analysis & Conclusions	Recommendations
	Output and Recipients	What are the nutritional impacts on the recipient of the biscuit & Thriposha?	Project & Individual	Thriposha 50 grams of Thriposha supplies more than total daily recommended allowance for children 1-6 years of calcium, iron, vitamin A and significant contribution of protein & vitamin B. Energy contribution is minimal but this provided in other foods eaten. Thriposha represents more than 50% of recommended allowance for primary school children. Thriposha contributes 1/4 or more of daily recommended allowance for pregnant and lactating women. Thriposha contributes at least 1/4 of recommended allowance for women of childbearing age. Energy (calories) minimal.	Thriposha should yield a positive nutritional impact. This should be measured through a limited study of recipients in the next year.
				Biscuit 5 biscuit supply 25 percent of daily allowance for vitamin A, calcium & thiamin & 15 percent for iron, protein & riboflavin. Caloric contribution minimal 8 biscuits improves contribution for children 5-6 years of age. Older children need even more calories, niacin & protein. Since it is doubtful children actually consume daily recommended nutrients, these contributions are inadequate. If children share biscuits as they do then nutritional contribution even less.	To the extent possible need to improve nutritional composition of biscuit. Because of limitation here need to increase local food to also be distributed
		Is the product acceptable?	Project	Both Thriposha & biscuits are well accepted. Thriposha acceptance verified in a pre-market survey. While recipients say they like the biscuit they also admit it is too dry and could be improved.	Improve quality of biscuit or provide something to drink with it.
		Effect of Projects on Community attitudes (Responsiveness)	Project & Acitivty	Communities highly receptive to both project, but need to translate this into more community input and participation.	CARE should work with community organization to encourage more local participation & input.

Chapter	Relationship	Issue	Level of Analysis	Analysis & Conclusions	Recommendations
		Effect on Local Production and Consumption	Program	Title II imports not a disincentive on local production. More positively, CARE has designed the program so that ultimately all the inputs for Thriposha will be local and thus it will stimulate local production. Program has changed consumption habits by introducing new good - Thriposha. Substitution of wheat or wheat products for rice not considered a problem now because rice is in short supply thus people need the supplemental food.. There is strong evidence that Title I imports do serve as disincentive in production of other local grains.	Continue to increase local food content of outputs to stimulate local production.
		Cost Effectiveness	Project	MCH costs per recipient higher than School Feeding but nutritional contribution of Thriposha also higher than biscuit. Lack data to be more precise in comparing cost effectiveness of 2 projects. There is scope to reduce costs of MCH by shifting to a totally local product. This will also increase employment benefits of project in Sri Lanka.	Undertaking of effectiveness study for MCH will improve extent to which its cost effectiveness is also assessed.
VI. Title II and Other Programs	Title II & Other Programs	To what extent is Title II integrated with other programs?	Program	Title II serves as core of CARE programming in Sri Lanka so its other projects are directly related. Other donor agencies have provided inputs like milk or scales to the Title II program as needed. WFP is deliberately separated from the CARE program. Program also well integrated in MOH family planning program. Weak integration in school system.	Should increase integration of Title II with curriculum of schools.

CHAPTER I. THE NUTRITIONAL SETTING

The first order of business in evaluating a nutrition program, especially utilizing a systems approach, is to analyze the extent to which a malnutrition problem exists in the respective country. While such an assessment should be made before a program is conceived or implemented, it is also important to reexamine the nutrition setting as part of periodic evaluations for relevant changes which could affect the program and its direction.

In Sri Lanka, there is no consensus on whether a malnutrition problem exists or how serious it is. As an indication of the range of views on this subject, the recent World Bank economic report may be contrasted with the results of various nutrition surveys.

The World Bank report indicates that nutrition levels in Sri Lanka are "fairly adequate."[1] The report continues: "Nutrition levels have been adequate in terms of per capita availability of both calories and proteins in most years, though malnutrition, particularly among estate workers, has remained a problem."[2] This statement is supported by evidence that in 1970, 107 percent of Sri Lanka's per capita caloric

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1. Development in Sri Lanka: Issues and Prospects, Report No. 1937-CE March 22, 1978, page 1.
2. Ibid., pg. 2.

requirements was available. Protein supply, at 50 grams a day, was also adequate that year. The high priority placed on health delivery systems by the previous government and the maintenance of an extensive food subsidy program throughout the country seem to support the World Bank statement. The implication of these conclusions is that malnutrition in Sri Lanka, where it does exist, is localized, and the vast majority of the population is consuming adequate protein and energy foods.

There are several qualifications to the World Bank statements which must also be considered before accepting the above conclusions.

1. The evidence supporting the World Bank contention is based on 1970, an exceptionally good year. The same chart used in the World Bank report, indicates that 1970 is the only year in which available calories exceeded estimated requirements.

2. The nutrition situation has deteriorated considerably in the 1970s, as Table I-1 indicates; hence, the use of 1970 data is not a proper indication of current nutritional status. Both the food balance sheet data and consumer survey data indicate that there was a deterioration in availabilities of most foods in the early 1970s such that the foods were below recommended allowances.

Several factors influenced the decline in food availability. First, a series of droughts have reduced domestic production considerably because of yield and crop intensity

Table I-1. Apparent Availabilities of Selected Food Items, by Different Source, and Recommended Allowances for Sri Lanka, 1968-73

(Kilograms per head per year)

Item	Food balance sheet data		Consumer survey data		Recommended allowances[e]
	1968-70[a]	1971-73[b]	1968-70[c]	1973[d]	
Rice	101.35	94.85	93.95	86.55	
Wheat flour	31.42	30.29	34.01	31.00	127.02
Other grains	2.59	2.11	3.10	--	
Potatoes	1.68	1.62	1.85	--	
Manioc	22.62	23.42	5.12	--	40.15
Sweet potatoes and other yams	4.08	3.83	1.80	--	
Sugar	22.57	18.66	17.85	11.00	10.95
Pulses	5.99	2.24	5.66	--	10.95
Beef	1.29	1.29	2.12	--	3.65
Milk	10.90	15.07	8.60	--	21.90
Fish	9.70	7.80	12.14	--	24.82
Coconuts	25.24	31.74	31.87	--	23.73
Coconut oil	3.69	3.68	4.50	--	4.75

a. Government of Ceylon, Statistical Abstracts of Sri Lanka (Colombo, Department of Census and Statistics).

b. Department of Census and Statistics.

c. Government of Ceylon, Preliminary Report on the Socio-Economic Survey of Ceylon 1969-70 (Colombo, Department of Census and Statistics, 1971).

d. Survey of Sri Lanka's Consumer Finance 1973 (Colombo, Central Bank of Ceylon, 1974).

e. Medical Research Institute of Sri Lanka.

declines. Rice production alone has reached 1970 peak level of production only twice, in 1974 and 1977. The average volume of rice produced between 1971 and 1976 was 17 percent below the 1970 level. Paddy production, which grew at 7.4 percent per annum between 1964 and 1970, slackened to 0.7 percent in the 1970s. Between 1974 and 1976, total availability of wheat and rice fell from 1.9 million tons to 1.7 million tons, or 7.1 percent. Although the shortage of domestically produced rice served as an incentive to the production of local grains - sorghum, maize, millet and manioc -- initial production levels were so small that the high rate of growth was still insufficient to meet food grain consumption demand.

Second, production has been low because of a fall in use of fertilizers and other inputs reflecting high prices and distribution failures. Third, there was also a shortage of farm equipment.

Pulses and fish are principal protein staples, and their availability fell with food grains in order to conserve foreign exchange. The Government of Sri Lanka banned the importation of pulses in 1972 and dried fish imports were cut 50 percent. The continued ban of these imports was supposed to stir domestic production but even with some growth, protein availabilities were still insufficient.

Sri Lanka has a chronic food deficit as a consequence. Population growth has increased aggregate food requirements even though the growth rate is lower than it was 10 years

age. Meanwhile, production has been low or declining. In order to maintain comparable consumption levels, there has been substantial importation of grains. Imports generally account for 52 percent of food grain needs and 25 percent of rice consumption. Of the wheat and rice available in 1976, 51 percent was provided by imports.

The increased imports of grains can serve as a disincentive on local food availabilities (sorghum, maize, millet) and a burden on balance-of-payments which have also been chronically in deficit. Scarce foreign exchange has been used to finance these imports while the proportion of aid-financed imports has actually declined from about 21 percent to 16 percent in the 1970s. This burden, plus the large expenses in maintaining the health and education delivery system, has greatly constrained growth of GNP and exacerbated unemployment levels.

3. The statistics used to support the World Bank statement are based on national availabilities as determined from food balance sheets. Availabilities do not necessarily correspond to actual consumption. Seasonal factors, aggregation errors and income distribution are not accounted for in the availabilities. In fact, when geographic differences in food production and supplies, inequitable distribution of income, and different age groups are taken into account, malnutrition appears to be much more prevalent throughout the country, not just on estates.

The following tables reflect these impacts.

Table I-2 indicates that even in the good year of 1969-70, per capita daily nutritional availabilities among the lowest income groups were inadequate. The caloric and protein availabilities averaged 2,064 and 47.4 grains respectively, or less than the minimum 2,200 and 50 grams required as determined by Ministry of Health. The tables also indicate how these availabilities vary by sector -- urban, rural and estate and by year. Other essential nutrients such as calcium, vitamin A and riboflavin are also below recommended allowances.

Table I-2 also lists some nutrient intakes per capita per day for rural low income persons in Sri Lanka. In only one of the seven surveys did nutrient intakes exceed the 2,200 calories recommended daily allowance.

Table I-3 indicates the percentage of daily recommended allowances consumed by distinct income classes. Persons with incomes less than 200 rupees a month ($405 a year in 1969-70 U.S. dollars) consumed less than required amounts of calories, and persons with incomes less than 100 rupees a month consumed an inadequate amount of proteins as well. Persons with income less than 200 rupees a month comprise 28 percent of the population.

The recommended allowances in Table I-3 are also understated, it may be noted. Since most of the population of Sri Lanka is rural, the effect of rural living on energy should be considered. Table I-4 lists the effect of occupation on energy expenditures of a 55 Kg reference woman. This

Table I-2. Some Nutrition Intakes Per Capita Per Day, Rural Low Income, Sri Lanka, 1969-71

Nutrients	Kudirippuwa,[a] 1969	Hirigollagama,[a] 1970	Hiripitiya,[a] 1970	Kukulpone,[a] 1970	Kataragama,[a] 1971	Kandalama,[a] 1971	Ganthiriyagama,[a] 1971
Calories	2,080	2,018	1,979	1,863	1,721	2,310	1,955
Total proteins, grams	53	45	50	43	39	58	51
Animal protein, grams	15.7	7.8	12	7	4	6	11
Range	(6-25)	(1-24)	(2-23)	(2-22)	(0-14)	(0-34)	(2-15)
Calcium, milligrams	405	219	391	280	354	347	357
Iron, milligrams	19	18	16	13-5	19	20	18
Vitamin A as retinol (mcg)	455	286	745	494	626	510	683
Riboflavin (mcg)	650	544	648	527	618	882	800

a. Forty households random sampled out of about 200 households in each village.

Source: Dietary Surveys, Sri Lanka 1969-1971, Colombo, Department of Nutrition, Medical Research Institute, edited by Thomas T. Poleman and others, "The Effect of Income on Food Habits in Sri Lanka," FAO Nutrition Newsletter, Vol 11, No. 3, July-September 1973.

Table I-3. Percentage of Adequacy of Some Nutrients by Income Classes (All-Island), Socioeconomic Survey, 1969-70[a]

Nutrients	Per capita recommended daily allowance	Income classes							
		Below Rs. 100	Below Rs. 200	Rs. 200 - Rs. 399	Rs. 400 - Rs. 599	Rs. 600 - Rs. 700	Rs. 800 - Rs. 999	Rs. 1,000 and over	All income classes
Calories	2,200	88	94	103	111	114	116	120	103
Protein, grams	45	89	105	120	130	135	138	147	120
Calcium, milligrams	519	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
Iron, milligrams	23	(-)	83	86	93	94	97	97	86
Vitamin A, as retinel (mcg)	642	(-)	109	109	112	121	121	131	111
Riboflavin	1,220	(-)	51	56	62	69	75	82	57

Note: (-) indicates a detailed breakdown was not available for computing adequacy.

a. Income provided in rupees. The adequacy of the diet in respect to any nutrient is determined by expressing consumption of the nutrient as a percent of the Recommended Daily Allowances on a per caput basis. The recommended allowances for Ceylon are shown in the first column and the adequacy of each nutrient is given under the income class.

Table I-4. Energy Expenditure of a 55 Kilogram Reference Woman and the Effect of Occupation

Activity level	Mean Kcalories	Mean Kcalories per kg. of body weight
Light activity	2,000	36
Moderate activity	2,200	40
Very active[a]	2,600	47
Exceptionally active	3,000	55

a. Activity level of workers in peasant agriculture.
Source: Handbook on Human Nutrition Requirements, Food and Agriculture Organization, Rome, 1974.

table indicates that agricultural workers are considered very active, requiring 2,600 calories or 47 mean Kcalories per kilogram body weight. In addition, if one works at a higher temperature, both the body temperature and the metabolic rate increase requiring additional energy expenditure. The energy allowance should be increased 0.5 percent for each degree of temperature above 30 degree C[1] because Sri Lanka has a tropical climate.

4. Another frequently heard reason for why there is no malnutrition problem in Sri Lanka is that the health and educational status of the people is much better in Sri Lanka than in other countries in the region or of comparable income. The Director of WHO office in Sri Lanka told the team "Sri Lanka is like the United States in this part of the world."

It is probably true that citizens of Sri Lanka, relative to other countries, benefit from more social services because the Sri Lankan Government has placed a high priority on health, nutrition and education. However, this does not imply that in absolute terms no malnutrition problem exists. Even in the United States there is a malnutrition problem, and not just among low income groups. The United States has one of the highest per capita incomes in the world and relatively excellent health and education systems. Nevertheless, there is a need to combat malnutrition where it does exist. Similarly, in Sri Lanka, the question is not how its

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1. Recommended Daily Allowance, National Academy of Science, Washington, D.C. 1974.

development compares with other countries but whether there is a problem in Sri Lanka and, if so, what kind of action is warranted.

5. Finally, the World Bank statement was part of a more comprehensive report on a broad range of economic and economically related subjects. The macroeconomic perspective predominates as the economists seek to assist Sri Lanka in establishing new policies which will facilitate more rapid economic growth. The latter is seen as the principal failure of the 1970s. In order for this to occur, it is thus argued that Sri Lanka must reduce the financial burden from its extensive food subsidy program. One possible rationale for this is to assume that malnutrition is not a serious problem.

Nutritionists have also been concerned about the issue of a malnutrition problem in Sri Lanka. While their perspective is no more neutral than that of the economists, their life work has been aimed at combating malnutrition, making it important that they first assess the existence and seriousness of malnutrition in that context.

In sharp contrast to the World Bank conclusions, most of the nutrition surveys since 1970 support the contention that there is a serious malnutrition problem in Sri Lanka.

In 1973, a nutrition survey, using the measurements of arm circumference for height of over one million school

children from 6-12 years was completed.[1] This technique was a valid tool for diagnosing malnutrition when compared with weight, height, age or clinical assessment. The findings revealed that over 40 percent of the primary school population (450,000 out of 1,000,000 students) had below normal height-arm circumference measurements. These data were used for achieving nutritional selectivity for supplementary feeding programs.

In 1976 a more complete type of nutritional status survey was done on the preschool population of Sri Lanka. Selected anthropometric, biochemical and clinical measures were used from a reference population of 13,500 sample children for the entire country. Anthropometric measurements included the use of a measuring board, a Salter hanging scale with 0.1 kg divisions, and a arm circumference tape which could be read to the nearest 0.1 cm. Biochemical measurements of hemoglobin and vitamin A were made using the fingerstick method for obtaining blood. Heel or toe samples were taken on babies. The clinical identification of Bitot's spots and corneal scars associated with vitamin A deficiency was taught using slides from known deficient patients. A vital information questionnaire was also obtained from each student. The results from this survey now provide useful baseline material for further status surveys.

This same survey confirmed that protein-energy undernutrition in rural preschool children is a general problem.

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1. M.A. Anderson, "Use of Height-arm," Journal of Clinical Nutrition, 28, 775 (1975).

The distribution of acute undernutrition or wasting by age groups indicates that children age 12-23 months are most seriously affected, probably because of inadequate weaning foods. Chronic undernutrition or stunting among the health districts varied from 21 to 50 percent. Pedal edema of nutritional origin associated with kwashiorkor is not a general problem in preschool Sri Lankans. Weight-for-age, the most commonly used index of undernutrition, revealed that 42 percent of the children are in the combined second- and third- degree Gomez classification.

There was also a high prevalence of chronic under-nutrition as defined by height-for-age criteria. The major undernutrition problem in Sri Lanka is primarily a result of chronic food deprivation. Areas of greatest undernutrition were associated with the largest estate populations.

The anemia results from hemoglobin measurements were inconclusive due to the questionable reliability of the survey hemoglobin data. Other surveys indicate anemia can be a problem in this age group (De Mel Village Study). Vitamin A deficiency did not appear to be a significant public health problem in Sri Lanka as it is in other tropical countries such as India.

Of particular nutritional significance was a selected group of over 400 children age 48-71 months from Colombo private schools who, for all practical purposes in their growth parameter medians, approached the NAS reference group medians for height-for-age and weight-for-height. This would seem to indicate that ethnic differences for growth

standards are not applicable and that with adequate nutrition Sri Lankan children would compare favorably with those in the United States.

A nutritional and clinical survey was made of the total population of an isolated agricultural community in the dry zone.[1] It found that 67 percent of the families in the village had an inadequate energy intake, while 35 percent were deficient in protein and niacin. All families were deficient in iron, calcium, vitamin A and riboflavin.

Although the children had a "well rounded appearance," their age was always underestimated by as much as three years. (A similar situation was observed in most schools visited throughout Sri Lanka by the team.) However, in this village "there did not appear to be any major nutritional or health problem." This can only be said if the short, wiry body contour noted is an adaptation to a poor dietary intake which has been genetically fixed by centuries of natural selection. The studies on selected Columbo school children would seem to disprove this theory and indicate that a major nutritional problem reduced the growth rate by an estimated three years in appearance.

Past nutrition surveys are important, but it is just as important to continue surveillance studies so that the current nutritional status may be determined. The Department of Nutrition in the Medical Research Institute has just

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1. B. de Mel & K. Abeyaratne Ceylon Med J. 21:29:1976.

completed an urban survey similar to the rural survey on children in 1976. Other surveys are planned and the individuals concerned are to be commended.

The consensus from all the nutrition surveys indicates that general undernutrition as a result of chronic food deprivation is of primary importance in Sri Lanka.

Since the problem is documented by several nutrition surveys, the next issue becomes to what extent is a supplementary feeding program a proper means of combating this problem.

The major criticism levied against supplemental feeding programs is that they are "Band-Aid" responses which, because they are not aimed at the root causes, divert needed resources which ultimately will have a greater impact. In a general equilibrium model with complete substitutability of monies and goods, this argument may be true; but, resources available for supplementary feeding programs are not easily transferrable. This is especially true in analyzing AID's contribution to supplementary feeding programs around the world. While AID is interested in providing the commodities and paying for their transport to the countries, it is not willing to substitute money for foods which then can be used to subsidize food purchases of the poor and other target groups.

While supplementary feeding programs are indeed stop-gap measures they may still be warranted for the short and medium run while other programs aimed at combating the

longer run root causes -- unemployment, etc. -- are designed and implemented. This appears to be the case in Sri Lanka. Even the most vocal critics of supplementary feeding programs argue that programs like CARE are providing a needed service. In addition, the CARE program is so adequate in combating the existing malnutrition that there is no interest among other donors or government agencies to enter this area with new programs. Such groups have, however, assisted CARE by providing equipment, etc., as the need arose.

Therefore, the controversy over the nutrition and supplementary feeding program in Sri Lanka ought not to be centered on whether a malnutrition problem exists but on its seriousness. There is a consensus that, while other donors and other GSL agencies target the root causes such as insufficient growth, unemployment and agricultural production, supplementary feeding programs can make a contribution at least for the current population. The CARE program appears to be responding to this current need most adequately.

CHAPTER II. TITLE II PROGRAM STRUCTURE

Program Design

The P.L. 480 Title II program in Sri Lanka is composed of three projects -- Maternal Child Health (MCH), School Feeding and Institutional Feeding -- which address nutritional deficiencies. This evaluation focused almost exclusively on MCH and School Feeding projects. A chart summarizing the program structure is included at the end of the chapter.

Maternal Child Health

The MCH concept refers to the institutional structure through which the project is operated. This structure includes 596 health centers, 717 peripheral units, and health facilities on 352 estates. The accompanying maps indicate the distribution of these by health district (Figure II-1, II-2). The MCH concept is very weak; in fact, the project is identified by all persons involved as the Thriposha project instead of MCH. There are at least two reasons for this situation. First, a major innovation in the MCH project has been the processing of the Title II commodities into Thriposha. Thriposha is a relatively new

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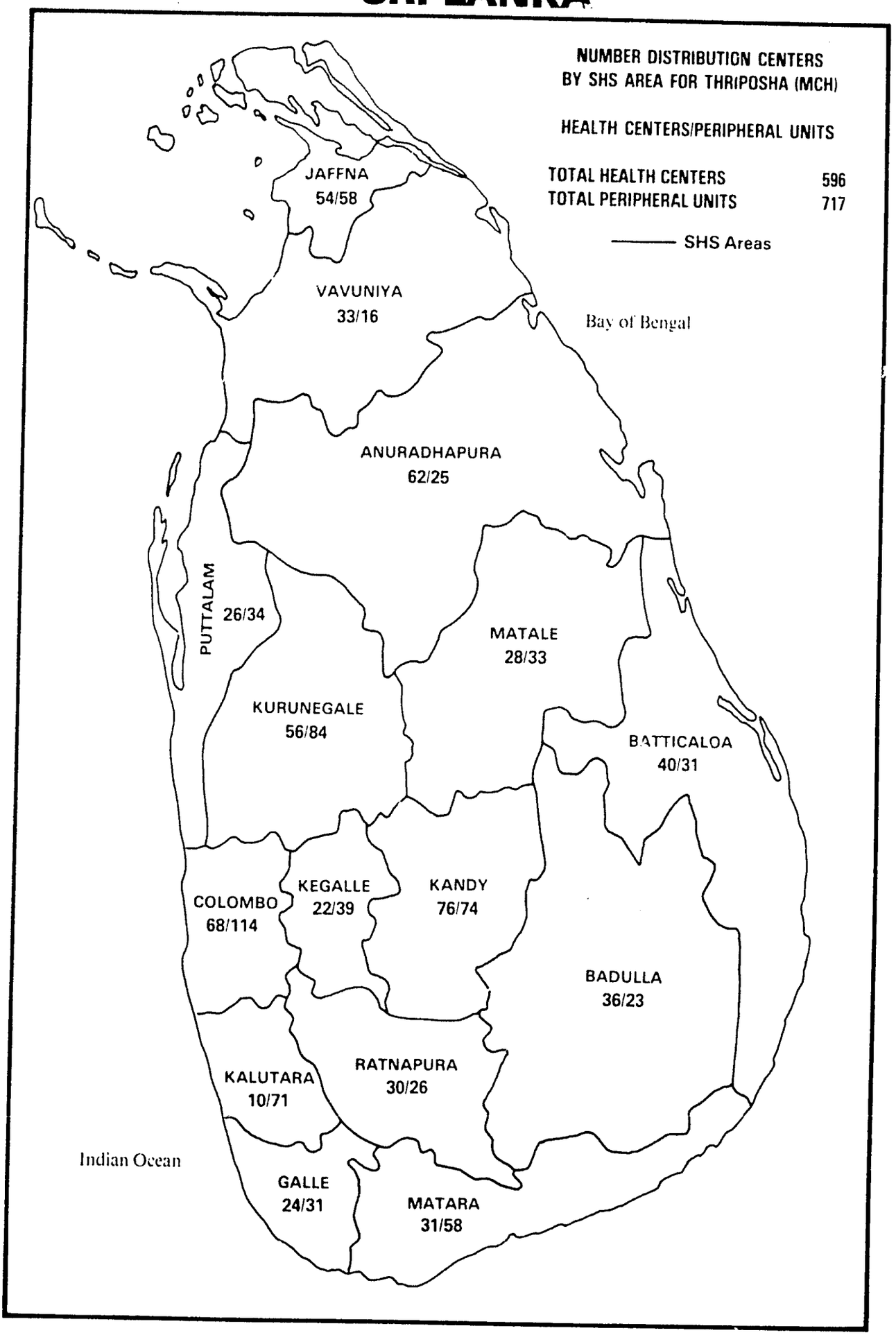
NUMBER DISTRIBUTION CENTERS
BY SHS AREA FOR THRIPOSHA (MCH)
HEALTH CENTERS/PERIPHERAL UNITS
TOTAL HEALTH CENTERS 596
TOTAL PERIPHERAL UNITS 717
SHS Areas
JAFFNA
54/58
VAVUNIYA
33/16
Bay of Bengal
ANURADHAPURA
62/25
PUTTALAM
26/34
MATALE
28/33
KURUNEGALE
56/84
BATTICALOA
40/31
COLOMBO
68/114
KEGALLE
22/39
KANDY
76/74
BADULLA
36/23
KALUTARA
10/71
RATNAPURA
30/26
Indian Ocean
GALLE
24/31
MATARA
31/58

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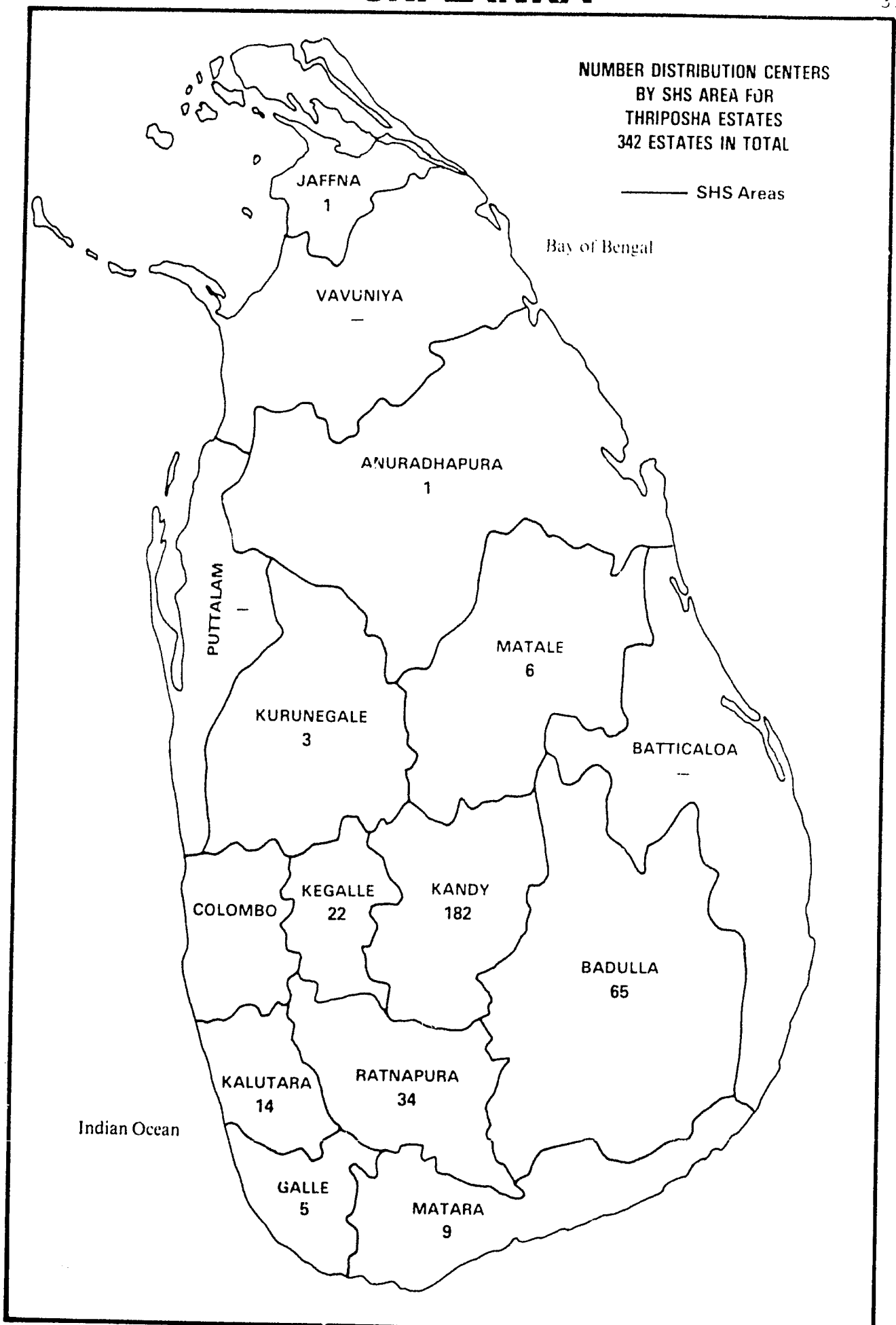
NUMBER DISTRIBUTION CENTERS
BY SHS AREA FOR
THRIPOSHA ESTATES
342 ESTATES IN TOTAL
SHS Areas
Bay of Bengal
JAFFNA
1
VAVUNIYA
—
ANURADHAPURA
1
PUTTALAM
—
MATALE
6
KURUNEGALE
3
BATTICALOA
—
COLOMBO
KEGALLE
22
KANDY
182
BADULLA
65
KALUTARA
14
RATNAPURA
34
Indian Ocean
GALLE
5
MATARA
9

product and CARE has devoted a substantial part of its time to promote its use throughout the country.

There is not an exact correlation between Thriposha and MCH. Thriposha is distributed through 968 schools and through 301 institutions -- hospitals, orphanages, etc., and the CARE budgeting process considers the distribution of Thriposha through the schools to be part of MCH, not School Feeding. Technically, as CARE recognizes, it is School Feeding since the school is the institutional context and the targeted recipient is the school age child. Thriposha is not, however, consumed at the school as is the biscuit.

Second, in Sri Lanka, the Ministry of Health, not CARE, is responsible for establishing and maintaining the health structure. Hence, persons are more likely to identify CARE with the product than with the structure. In addition, the health institutional structure has deteriorated while the distribution of Thriposha has become more well known. Therefore, even though there is mutual benefit between CARE and Ministry of Health in the project, many citizens perceive Thriposha as contributing more to the effectiveness of health delivery system than vice versa. This perception arises because of several weaknesses in the health delivery system.

The large number of health institutions which exist in the country is illusory. Most centers or units operate just a few hours a week, and many do not really have any health equipment or facilities. A clinic or unit is defined as a health facility merely when a health officer is working

there. Some local government offices are used for these purposes. In many cases, the main function provided by some units is distributing Thriposha and taking any tests or measures associated with its distribution. When this function is completed the unit closes.

This system, while giving the appearance of extending services to more of the population, is also inefficient and should be reviewed as a means of improving the quality of health services in the country.

Technically, MCH is also defined as wherever the Medical Officer of Health is operating. There are 103 so designated positions. A large percentage of these are unfilled, however, especially in the North Central area. Each officer is responsible for a broad range of activities including Title II MCH in a relatively large geographic area. In addition, the health officer is responsible for conducting clinics; providing antenatal care; child welfare and health care; operating any immunization and nutrition programs; testing; and dispensing family planning services. Futhermore, the officer is also responsible for improving environmental health and sanitation; controlling communicable diseases; supervising food services of hotels; and approving housing plans. Finally he examines, weighs and immunizes children in the schools; supervises the activities of all midwives and other staff in his region; and holds monthly conferences about various health problems and ways of resolving them. The officer travels from one clinic to another, and one town to another carrying out these responsibilities; thus much of the actual Thriposha

distribution is handled by midwives. Depending on the midwives' competency and motivation, the attendant nutrition education and anthropometric test and measurement exercises often suffer.

The team recommends for the MCH project that the institutional and organizational structure of the health delivery system be strengthened by overcoming some of the noted deficiencies. Specifically, the training of midwives and community health workers should be improved so that they may provide greater assistance in a fuller range of MCH services. CARE should assist in these efforts to the extent possible for its own project benefit.

School Feeding

Sri Lanka has an extensive school system throughout most of the country; in contrast to MCH, the School Feeding project benefits from a well established institutional vehicle. The School Feeding project operates through 7,336 schools. The following map indicates the distribution by province (Figure II-3).

A major weakness lies in the recent reorganization of the Ministry of Education. The principal contact with the CARE program is the Secretary or number three person in the Ministry. Although the contact has worked well in the past, a new working relationship has to be established with the new people in this and other relevant positions. Most have no knowledge or experience with the program.

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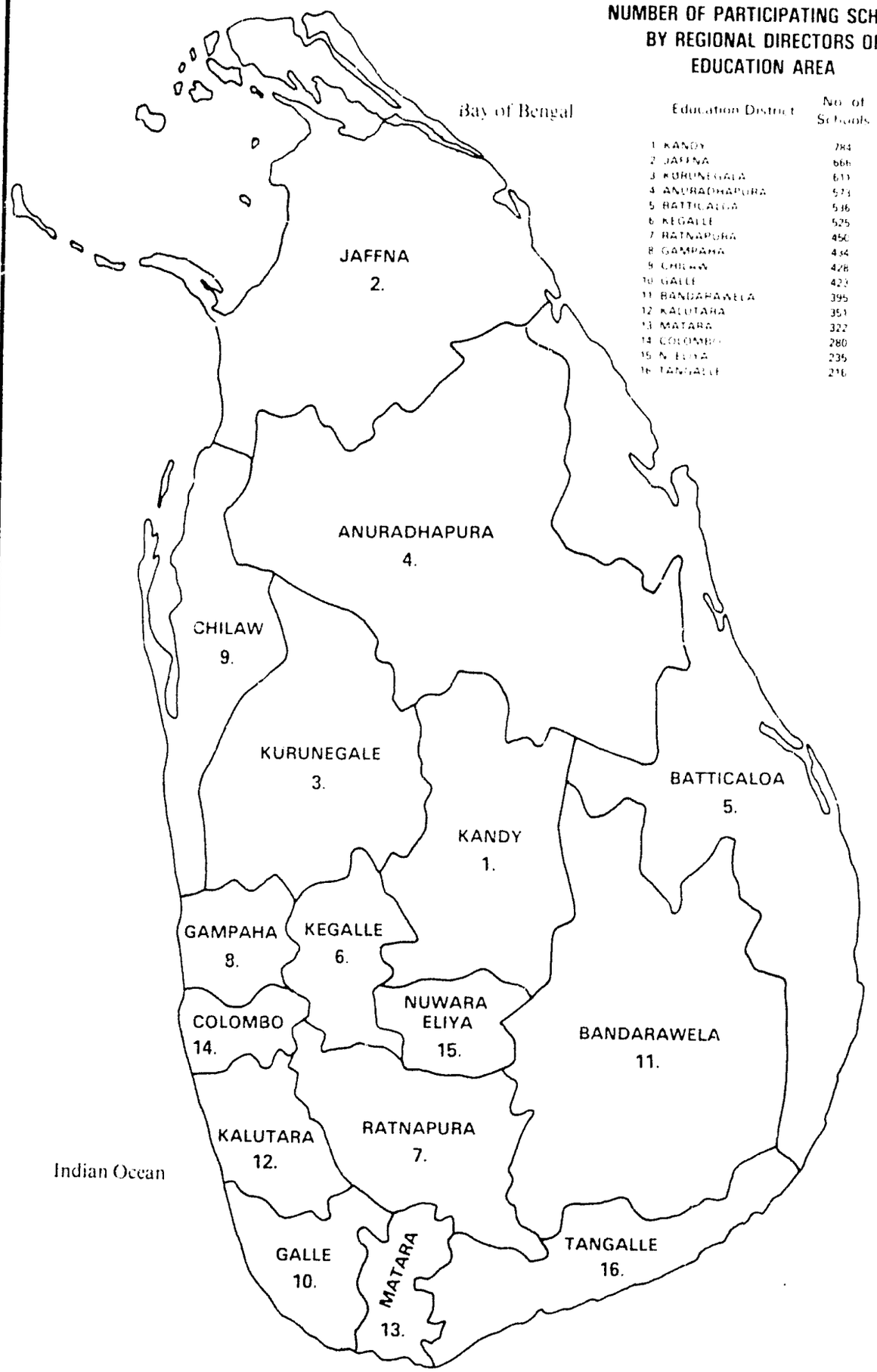

SOURCE: Information supplied by the Ministry of Education based on school reports as at end of 1977.

Institutional Feeding

The team did not evaluate the Institutional Feeding project separate from the Thriposha project. However, the following map provides an indication of the geographic distribution of the activities by province (Figure II-4).

Participating Agencies

Theoretically, participating agencies involved in the P.L. 480 Title II program in Sri Lanka include AID, CARE and the GSL through the Ministries of Health and Education. CARE dominates the design, operation and management of the program while ancillary but important contributions are provided by AID and the GSL. AID provides the Title II commodities, and the GSL is responsible for the institutional infrastructure so crucial to reaching the recipients. Since 1974, the Ministry of Education has been responsible for the storage and distribution of food from the warehouses to the schools. Distribution of food to MCH recipients is handled by Ministry of Health personnel.

CARE

CARE has the core role in the Title II program. Its role begins with calling forward the Title II commodities and handling the booking. It then manages the processing of the food into new products which are then distributed to regional warehouses; supervises the other participating agencies; directs the program design; and implements all aspects of the operation. CARE's responsibilities also

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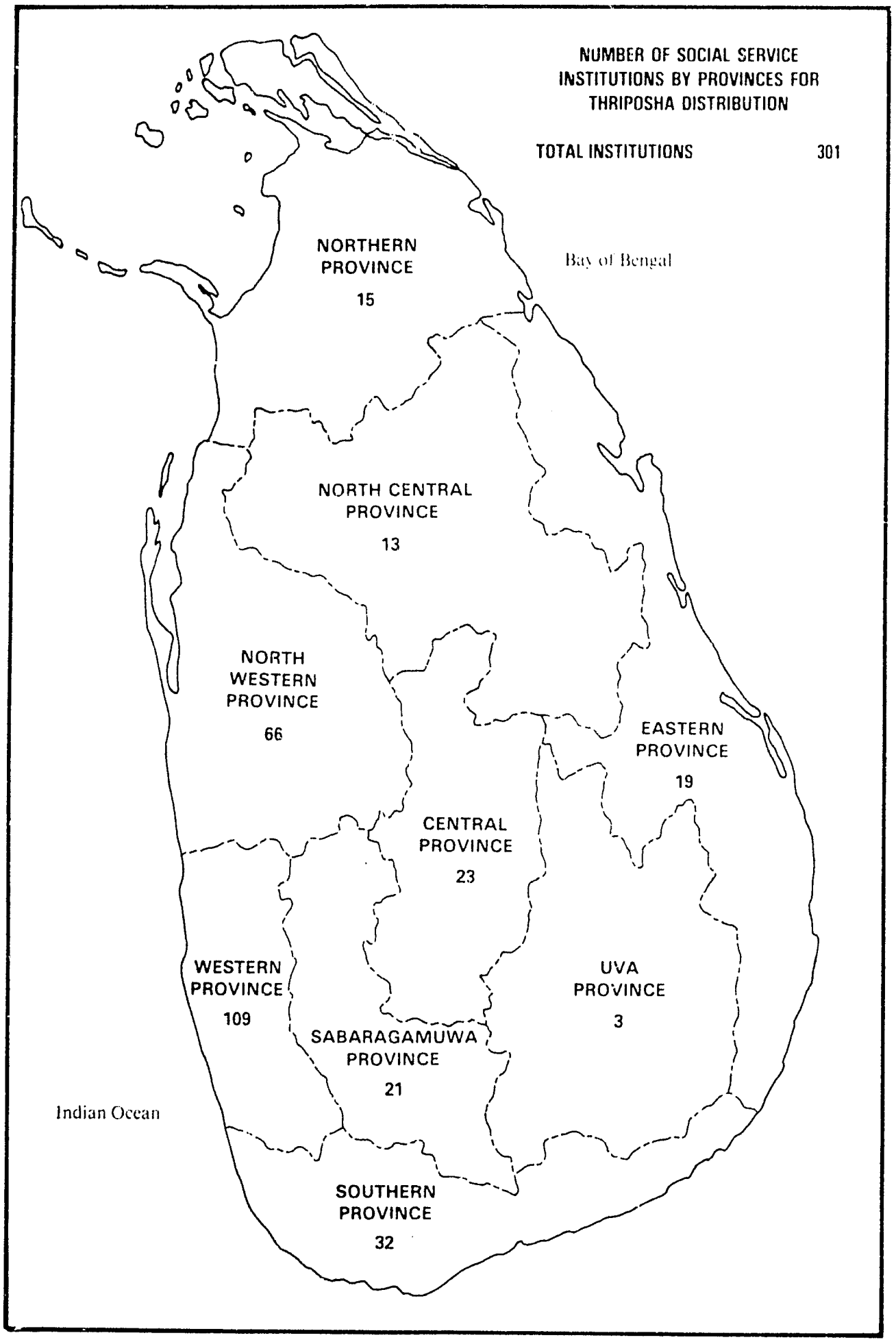
NUMBER OF SOCIAL SERVICE INSTITUTIONS BY PROVINCES FOR THRIPOSHA DISTRIBUTION
TOTAL INSTITUTIONS 301
NORTHERN PROVINCE
15
Bay of Bengal
NORTH CENTRAL PROVINCE
13
NORTH WESTERN PROVINCE
66
EASTERN PROVINCE
19
CENTRAL PROVINCE
23
WESTERN PROVINCE
109
SABARAGAMUWA PROVINCE
21
UVA PROVINCE
3
SOUTHERN PROVINCE
32
Indian Ocean

include directing any special studies or surveys relevant to the program. Table II-1 outlines these responsibilities, and provides a breakdown of inputs by quantity and value.

AID

AID provides the Title II commodities and pays for shipment to Sri Lanka. In addition, USAID should be monitoring the program but has done so only informally to date. USAID argues that they have not had sufficient staff to monitor the program. There was no Food for Peace Officer or anyone specially assigned to Food for Peace activities at the time of the evaluation. The USAID Program Officer is the principal AID contact but he devotes little time to Title II. The mission is rapidly expanding, however, and a local employee is being assigned to Title II responsibilities.

Government of Sri Lanka

The GSL provides duty-free entry for goods, and pays inland handling, transport and storage of goods. These services are carried out through two ministries - Health and Education.

Ministry of Health

The Family Health Program in the Ministry of Health is responsible for the MCH institutional context and provides personnel for that project. It also pays for some local foods. Medical Officers of Health are also supposed to visit schools where they weigh, examine and

Table II-1. CARE Input Analysis, Fiscal Year 1977
(Quantity in pounds; value in dollars)

		School feeding				Maternal child health			
		Approved		Actual		Approved		Actual	
Source	Item	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
AID	Title II foods:								
	12 percent soya fortified flour	12,096,000	2,607,897	10,345,270	2,228,285	--	--	--	--
	Vegetable oil	1,323,000	667,057	988,515	498,409	--	--	--	--
	Instant corn soya milk	2,349,000	668,525	661,950	188,277	8,964,000	2,524,262	1,785,350	410,630
	Wheat soya blend	783,000	177,976	2,179,930	495,511	2,839,000	645,307	8,484,150	1,399,885
	Sub-total	16,551,000	4,121,455	14,165,333	3,410,482	11,803,000	3,169,567	10,097,500	1,810,515
GSL	Local foods:								
MOE	Sugar	--	--	1,004,340	481,121	--	--	--	--
MOE	Special fat (oil)	161,213	74,255	161,213	73,255	n.a.	n.a.	45,410	7,708
MOH	Sorghum	--	--	--	--	n.a.	n.a.	223,834	n.a.
MOH	Maize	--	--	--	--	n.a.	n.a.	1,522,056	n.a.
MOH	Soyabeans	--	--	--	--	n.a.	n.a.	258,263	n.a.
	Other foods:								
MOE	Milk powder	601,476	--	448,290	267,453	--	--	--	--
MOE	Butter oil	112,234	189,676	110,757	187,179	--	--	--	--
CARE	Materials:								
	Polythene bags	--	--	--	--	n.a.	n.a.	6,928,065	109,104
	Paper bags	--	--	--	--	n.a.	n.a.	228,409	71,394
	Miscellaneous:								
	Transport	--	--	--	658,683	n.a.	n.a.	n.a.	200,000
	Production/ processing	--	--	--	1,823,821	n.a.	n.a.	n.a.	125,146
	Personnel by type or function:								
CARE	CARE Int/National staff			23	146,200			23	146,200
	MOE			7,608	195,312			--	--
	MOH			--	--			4,519	324,719
	(Other) 2 food storage consultants, SF and MCH			--	--				
	Sub-total				341,512				470,919
	Infrastructure								
	Thripasha capital development	--	--	--	--	--	--		65,000
	Growth cards	--	--	--	--	--	--	50,000	2,995
	Grand total				7,243,506				3,143,220

immunize the children, providing some support for the School Feeding project.

The Ministry of Education

The Ministry of Education is responsible for the institutions where the School Feeding project operates and for the logistics involved in distributing the food from the regional warehouses to the schools. The Ministry took over the latter role in 1974. With an adequate budget for transport the Ministry has been able to perform its duties without major problems. The logistics are appropriately supervised at the regional or local Superintendent of Schools level rather than from Colombo, which offers greater flexibility and more compatibility with local transport requirements.

Inputs

The major inputs into the Sri Lanka Title II program are classified as follows: Title II foods, other foods, (local and imported), personnel, infrastructure, materials, transport, production and processing. At the program level, the quantity and value of inputs actually distributed for FY 1977 were as follows:[1]

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1. Figures supplied by CARE.

	Quantity	Value
Title II Foods	24.3 million lbs.	$ 5.20 million
Other foods	3.7 million lbs.	$ 1.30 million
Personnel	9,152 persons (full & part time)	$ 0.80 million
Infrastructure	n.a.	$ .07 million
Materials	7.2 million bags 50,000 growth cards	$ 0.18 million
Transport	n.a.	$ 0.86 million
Production and Processing	n.a.	$ 1.95 million
Total		$10.36 million

The total cost of the program is estimated to be $10.4 million.[1]

Foods alone account for 62 percent of total value of inputs, while Title II commodities represent 50 percent of total value. Production and processing costs rank second, transport and personnel rank about third or fourth each.

The distribution of these inputs by project follows. School Feeding represents twice the costs of MCH, but receives only a little more than half the Title II food.

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1. It should be noted that the value is calculated in dollars using the 1977 exchange rate of 15 rupees = $1.00. However, prior to 1977 the exchange rate averaged 6-7 rupees per dollar and if one attempts to compare the FY 1977 values to earlier ones, the FY 1977 values are underestimated.

The foods in the School Feeding Project are more expensive than those in Thriposha.

	School Feeding	
Category	Quantity	Value
Title II Foods	14.2 million lbs.	$3.4 million
Other Foods	1.7 million lbs.	1.0 million
Personnel	7,620 persons (part time)	0.3 million
Infrastructure	--	--
Materials	--	--
Transport	n.a.	0.66 million
Production and processing	n.a.	1.82 million
Total	n.a.	$7.18 million

	MCH	
Category	Quantity	Value
Title II Foods	10.1 million lbs.	$1.8 million
Other Foods	2.0 million lbs.	0.3 million
Personnel	4,532 persons (part time)	0.5 million
Infrastructure	n.a.	0.07 million
Materials	7.2 million bags 50,000 growth cards	0.18 million
Transport	n.a.	0.20 million
Production and processing	n.a.	0.13 million
Total	n.a.	$3.18 million

n.a. = not applicable.

In 1976 CARE decided to switch from WSB to ICSM as a means of increasing the local food content of the two final products -- biscuit and Thriposha. Corn is locally grown but wheat is not; hence the shift to ICSM. Local foods, now used mostly for the Thriposha, are oil, sorghum, maize and soybean. CARE is the largest buyer of corn and soybeans in the country. It is proud of this record and hopes the program will serve as a stimulus to national production of these foods. There are no serious input constraints in the Title II program, which is a sign of good planning and the ability to obtain additional inputs as needed. The current need is for some weighing scales to be used in several surveys CARE is planning. CARE has already contacted other foreign donors as well as obtained some from its New York office for these purposes.

Outputs

MCH

Thriposha is the principal output of the MCH project. Iron, folic acid and calcium are also distributed to recipients suffering from anemia and calcium deficiency.

Because of CARE's interest in expanding the scope of the project from a narrow nutrition orientation to a broader health service, emphasis is also placed on health and nutrition education. To date, personnel in the Ministry of Health have been responsible for disseminating this and other information to accompany the distribution of Thriposha. This system varies with the competence and motivation of

health personnel so there is a logical variation both among personnel classification and individuals. The more highly trained personnel do not necessarily provide the best nutrition and health education services. Sometimes the midwives and lower level health staff take a greater interest in this phase of the project, while the doctors are more interested in clinical problems. A competent and motivated junior health person might be better suited for the task, at least in terms of direct contact with the recipient.

CARE has sought to strengthen the health education services by designing, printing and distributing 50,000 growth cards for the infants and preschool children. The monies for these cards come from an associated CARE project, Applied Nutrition Service Program (ANSP). One part of the card is kept by the mother so she has a record of the child's progress, and one part is kept by the health staff of the clinic or unit so that they can assess both individual and community health status changes. Since Thriposha is distributed only to malnourished children, the cards serve as a record of who is eligible for the project. This card is a needed addition to the project. However, CARE or the Ministry of Health will need to train some staff in how to complete and evaluate the cards. In time, the staff can train recipients in how to make the most use of the cards.

ANSP also provides nutrition education materials such as posters, leaflets, and exhibits regarding the use and

preparation of Thriposha. These posters were hanging in many health units visited by the team. In several instances the staff specifically requested more of them.

School Feeding

The biscuit is the principal output of the School Feeding project. Those schools with a high percentage of malnourished children may also receive Thriposha which is given to the child to take home and have prepared by the mother. Health and nutrition education instructions which are part of the standard school curriculum should be integrated with the feeding project, but this has not been done. To improve the quality of these ancillary services, CARE and the Ministry of Education must devote more direct attention to them. In FY 1978 the primary school children will receive the 100 percent locally prepared Thriposha as a pretest, while the recipients in the MCH continue to receive the Thriposha with primarily imported inputs.

The team suggests including the design of a set curriculum oriented around the School Feeding project. This can then be used by teachers to educate the children about the importance of the biscuit and better consumption habits, and how to attain them with available resources. Expanding the scope of these services is particularly important because the primary school child is at an impressionable age where, if the proper values and habits are instilled, they can have multiple effects on the health and economic status of the future generation.

Recipient Levels and Target Groups

Pregnant or lactating women and children under 6 represent the principal target groups for the MCH. In FY 1977 there were 246,274 such intended recipients. Pregnant women accounted for 18.5 percent of total; lactating women 8.7 percent; infants 9.2 percent; preschool children 62 percent. The remaining 1.6 percent are accounted for by wards. The actual number of recipients reached represent 74 percent of the approved levels. Failure to reach at least the approved level of recipients is attributed to the weaknesses in the health delivery system discussed earlier. A further breakdown by district is provided at the end of the chapter.

Recipient levels in the School Feeding project have exceeded approved levels. Over 1 million primary school age children between 6 and 14 years old were reached in FY 1977 while 900,000 were approved. Coverage of the School Feeding project is provided in Table II-2.

The appropriate recipient level for the School Feeding project is of particular concern to AID both in Sri Lanka and Washington. On a global basis AID would like to see a shift away from resources devoted to School Feeding projects and towards MCH. Recipient levels are used by AID as one indicator of this shift. In FY 1977 the School Feeding project reached 79 percent of enrolled primary school age children and as much as 65 percent of the primary school age population. AID thinks this is too high. However, the other participating agencies have different views on this

Table II-2. Statistical Data on Schools in the School Nutrition Supplement Program

Region	Total schools	Number of schools in program	Number of schools with Thriposha[a]	Number of schools with biscuits[a]	Enrollment, grades 1-5	Average attending, grades 1-5[a]
Colombo	441	280	20	55	111,195	84,890
Gampaha	595	434	22		114,831	90,568
Kalutara	429	351	23		83,054	59,432
Kandy	907	784	111	52	134,189	104,823
N' Eliya	267	235	28		46,502	35,480
Galle	508	423	42		77,744	60,873
Matara	412	322	21		61,738	59,124[b]
Tangalle	276	216	15		45,314	34,873
Jaffna	859	666	78		95,981	79,946
Batticaloa	649	536	82		96,785	74,854
Kurunegala	754	709	83		107,315	86,101
Chilaw	478	428	43		62,850	56,303
Anuradhapura	635	573	150		82,967	64,867
Bandarawela	459	395	93		62,435	47,689
Ratnapura	490	450	53		84,062	63,217
Kegalle	559	525	104		93,275	71,415
Total	8,673	7,372	968	107	1,360,237	1,074,455

a. Information in columns 3, 4, and 6 is based on CB3B forms.
b. Under further checking.

subject. The Government of Sri Lanka places a high priority on education for all school age children and desires the School Feeding project to reach as many children enrolled as possible, whether malnourished or not. Its willingness to devote substantial Ministry of Education resources to this end is further evidence of its support. The excellent infrastructure it provides is reflected in the project reaching more children. Finally, the structure of the schools is such that it is virtually impossible and socially undesirable to distribute the biscuit only to the malnourished children even if they could be regularly identified. AID, itself, acknowledges this inherent paradox in the project.

CARE's position falls between the AID and GSL extremes. To the extent possible, and probably more than in School Feeding projects in other countries, CARE has sought to target the project to malnourished children. A 1973 survey was carried out of over 1,000 schools and those schools with more than 40 percent of the enrollment classified as malnourished were eligible to receive the biscuit or bun. Several factors may make the 1973 study no longer relevant. The 1973 study has been critized for using the "quack stick" measure which is now not considered to be very accurate or reliable. Since 1973, there may have been enough changes in the communities and schools that a new survey on a sampled basis is warranted. Finally, further discussions will have to ensue to select a better measure of malnutrition, as well as the percentage criteria for determining whether a school should or should not be in the project. These steps may or

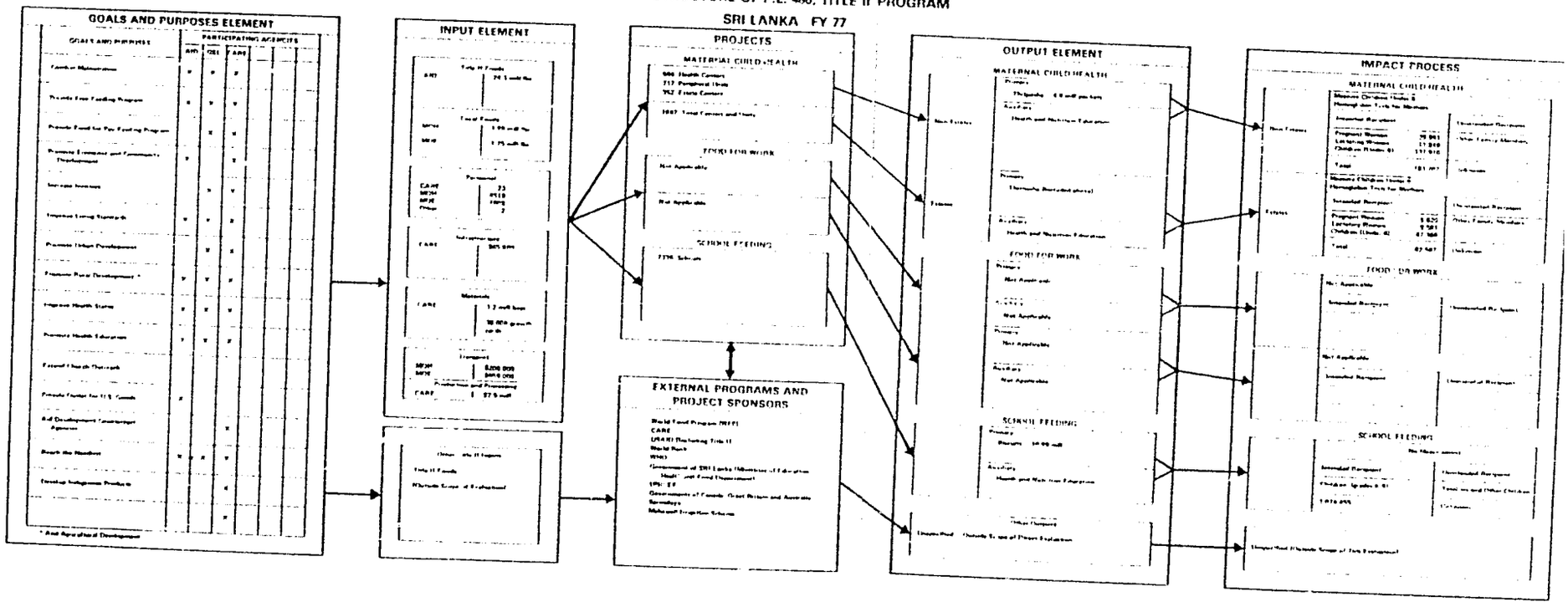
may not decrease recipient levels, but they will provide better criteria for determining what level of recipients is appropriate.

The evaluation team, in its travels through Sri Lanka, did identify two areas where the School Feeding project should be extended. The Government is in the process of taking over estate schools. Since these schools were not included in the 1973 survey, they do not now participate. Nutrition surveys indicate malnutrition among estate population is among the worst in the country and the School Feeding project ought to be directed to this target group.

The team also visited two Mahaweli resettlement schemes. The school system had only recently being introduced in one scheme, but the living conditions appeared to be some of the worst in the country. CARE should investigate the possible need for these communities to be included in the School Feeding project.

STRUCTURE OF P.L. 480, TITLE II PROGRAM

SRI LANKA FY 77



CHAPTER III. POLICY ANALYSIS

There are four critical policy relationships to be examined:

1. Relationship between Title II program under review and general economic, health and nutrition policies of Sri Lanka;
2. Relationship among goals and purposes of participating agencies and the Title II program;
3. Relationship of project priorities of the participating agencies;
4. Relationship between policy guidelines and Title II projects.

Within these relationships, the evaluation team identified a number of key issues listed below:

- To what extent are the policies of the Sri Lanka Government consistent with the Title II programs?
- To what extent are the goals and purposes of the participating agencies compatible?
- To what extent is the priority ranking of projects consistent among the participating agencies?
- To what extent do the projects follow policy guidelines?

Correlated with each issue and its analysis are specific recommendations for improving the Title II program.

Policies and Title II

The Sri Lanka Government has traditionally placed a high priority on health, education and nutrition programs including Title II. Between 1963-77, 7-10 percent of current expenditures and 1-2 percent of Gross Domestic Products (GDP) have been spent on health; 15-20 percent of current expenditures and 3-4 percent of GDP on education; and 12-24 percent of current expenditures and 3-4 percent of GDP on food subsidies. Thus 36-50 percent of current expenditures and 9-11 percent of GDP have been spent on social services. Although the trend for this type of expenditure is decreasing in favor of shifting resources to investment opportunities, the traditional high priority for social services remains.

The priority given to the Title II program is also impressive. The Ministry of Education increased its expenditures for the program from $1.5 million in 1973 to $2.8 million in 1976 although total capital expenditures were only $5.1 million. The MOE contribution to Title II accounts for 55 percent of its budget for capital expenditures. In addition, the Ministry of Health spends about 30 percent of its capital expenditures and 3 percent of its total budget for the MCH project plus distribution of Thriposha to schools and institutions.

The high priority placed on health, education and rural programs makes Sri Lanka suitable for the Title II program.

Its extensive health, education, and transportation (roads and vehicles) systems facilitate the distribution of the foods to target groups. Its current program to extend these services to other critical areas such as the estates will also enable the Title II program to reach needier persons. Finally, Sri Lanka's import policy is supportive of the program. The Title II commodities are allowed to enter duty-free and the Government places a high priority on wheat imports. The effect of these imports on production will be discussed later in this report.

Despite these advantages there are three principal policy constraints which now impinge on the program. The first two are interrelated. First, the present government came to power within the last year, after a long period during which a more socialistically-oriented party was incumbent. Second, the new government has not yet determined critical national policies including those in the area of health and nutrition. A different ideological slant from the previous government, an apparent popular mandate from the people, and increasing pressure from external donors have left the new government undecided on a precise course of action. In the absence of specific policies, the needed direction from the center is not being given, and weak areas in the system could continue to deteriorate to the detriment of Title II. Because some reductions in national food subsidy program have already been implemented, there may be an even greater need for the Title II program if new poor and malnourished groups formerly benefiting from food subsidies appear.

A lack of a community development orientation serves as a third constraint on the Title II program. The central Government of Sri Lanka has already committed sizeable sums of money to the Title II program so any further Sri Lankan input will have to come from the local community level. Because the traditional government support of welfare programs has led many people to expect handouts rather than to be more self reliant, this would be a desirable input. Despite poverty, there is scope for community involvement, and a means of balancing the program from the bottom up. The School Feeding project could benefit from community provided foods and MCH could use the help of community health workers. Therefore these two areas might become targets for community organization efforts. However, because Sri Lanka does not have the tradition of community development seen in Latin America, greater efforts on the part of program participants may be required to organize such activities. Coordination with Sarvodaya, a Sri Lankan community organization, might also be investigated.

Compatibility of Goals and Purposes and Priority Ranking of Projects

A strong commitment by all participating agencies to Title II has contributed greatly to its success. There is a consensus on the number one priority of combating malnutrition through a supplementary feeding program such as Title II.

CARE and GSL goals and purposes generally correspond to those of AID. Problems occasionally arise, however, in instances where CARE and GSL want to go further than AID

legislation or monies will permit.[1] To date AID has been satisfied with the scope and direction of the Title II program; however, if AID resources become tighter, greater differences between itself and the other agencies may arise.

Consideration of recipient levels may be one indication of this trend. While there is a clear consensus of the need for the program to reach the needy, AID would define the neediest more narrowly than would GSL and CARE. Accordingly, recipient levels would be reduced. Alternatively, it might be contended that pregnant and lactating mothers and preschool children represent a needier group than school age children, so that more resources should be put into MCH instead of School Feeding. Unfortunately, however, there are no objective criteria for selecting between the two recipient groups. From a nutritional perspective the MCH recipients appear to be more vulnerable and at risk, but from an economic development perspective, healthy, well-fed children are important for learning and school performance and the ultimate economic development of the nation. Both CARE and GSL view the maintenance and sustenance of the nutritional status of school age children as being important. They view the School Feeding project as not only a nutritional but also an educational project. Thus, while AID may put more emphasis on a smaller nutrition focus, the GSL is likely to consider health and education goals as being at least equally important.

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1. The one exception is the new AID legislation which calls for broadening MCH recipient levels to include all women of childbearing age. This is discussed later.

Because the differences between AID and the other participants may become more significant in the future, studies or limited surveys should be undertaken to gauge the effectiveness of each project to have reliable criteria for assessing each project's direction. The data exist for a survey of the MCH project to be undertaken before the end of 1978. A survey of the School Feeding project will require a larger effort but less than a full census as was done in 1973.

AID and CARE view MCH as having a greater priority than School Feeding, but GSL considers them to be equally important. CARE's position contrasts with AID's because CARE does not think the School Feeding project should be phased down to expand MCH. There has been growth in both projects though the rate at which this continues is now of concern to AID and could constrain further program expansion proposals if oriented toward School Feeding.

CARE also has placed a greater emphasis on producing and processing the biscuits and Thriposha than on the health and educational support infrastructure. Nevertheless, CARE sees the need for strengthening the latter as a principal area of future concern. It is especially alarmed at the impact the deterioration of the health delivery system has and could have on the program.

CARE perceives the Thriposha project as also being related to agricultural development. For this reason, it has stressed the importance of a totally indigenous product. CARE is the largest purchaser of domestically produced corn and soybeans and thus considers its project to serve as an

incentive for agricultural production. While agricultural production is also a USAID goal, it is not seen as a purpose of Title II.

Title II Policy Guidelines and Program Project Monitoring

The principal issue involving the policy guidelines is the extent to which they are being followed. The Title II legislation is one principal source of such policies as well as AID's own Food for Peace Guidelines.

Because USAID has not monitored the program it has not set down any such guidelines. In improving this situation USAID will have to assign someone to devote more attention to determining USAID's role and nature of its input into the program.

Women of Childbearing Age

The AID legislation has been changed so MCH should cover not just pregnant or lactating women but all women of childbearing age. AID needs to know if there are sufficient Title II commodities to implement this change globally. Such broadened guidelines are impossible to implement in the short run because only limited amounts of Thriposha can be produced in the one plant. The construction of a scheduled new plant will remove this production constraint in the future. The health delivery system probably can never reach all these women even if the food were available. However, since improving the health delivery system is a priority area, such efforts will surely be necessary, even though not

sufficient, when more Thriposha will be available. Only a gradual shift in compliance with this policy is likely but at least those steps now being taken are in a consistent direction.

Age Limitations

The School Feeding project now includes five year olds even though the AID guidelines list six as the beginning age. The lower age limit was initiated this past school year because the GSL decided to add five year olds to the school system. CARE, with USAID approval, agreed to provide biscuits to these children and thus increases recipient levels by about 30,000 children until a better system can be managed. To facilitate this change the daily ration of biscuits given a child was reduced from eight to five. The nutritional impact of this change is discussed in the effectiveness chapter.

Family Sharing

AID guidelines are very specific about the intended recipients of the Title II projects. However, it is widely acknowledged that in both the School Feeding and MCH projects, the Thriposha and biscuits are shared at least within the family. Primary school children who receive the biscuit save at least one (when five are given) and two or three (when eight are given) for younger or older sisters and brothers. This practice is part of a tradition for children to share what they have among their sisters and brothers. For social reasons the practice should not be discouraged.

Although more persons are being reached, each intended recipient is receiving less than the recommended amount.

The Thriposha is to be consumed only by anemic mothers who are pregnant or lactating and malnourished infants and children. One can assume, however, that family members share the food. It is estimated that, including the unintended recipients, the program may be reaching about 2.4-2.6 million persons or double the number of intended recipients. The effect of the family sharing on nutritional impact of intended recipients will be analyzed in the effectiveness chapter.

CHAPTER IV. OPERATIONS AND MANAGEMENT ANALYSIS

Operations and management focuses on the relationship between program inputs and outputs. It entails an analysis of how these inputs are converted to outputs. The other components examine relationships between the program and external factors, but this chapter is devoted entirely to the internal nature of the program. Such analysis is explained in terms of how the participating agencies (primarily CARE and the GSL ministry personnel) perform several functions at the program, project and activity levels. These functions are common to any organization regardless of its purposes or goals and thus serve as a uniform system for both evaluating and comparing these projects and activities. However, the way in which these functions are performed will necessarily differ, and these differences will also be assessed.

Five functions have been identified for evaluating the internal operations of the program. They are as follows:

1. Regulation and Control
2. Production and Processing
3. Distribution ans Storage
4. Cost and Budgeting
5. Monitoring and Evaluation

The purpose of this chapter is to evaluate the MCH and School Feeding projects in terms of how each function is performed.

Regulation and Control

CARE is in full control of all operations under its direct responsibility and has established an efficient organization and management system. This is especially impressive given the innovative aspects of the program. In establishing the Thriposha project the CARE staff has conducted economic studies regarding optimal location for plant; itemization of production costs; market outlook; production equipment; procurement; and use of alternate production techniques, etc. CARE implemented the management systems identified from their special studies. Unfortunately, the team noted that no Sri Lankan counterpart had been trained to work through these tasks with CARE staff and obtain practical training in program management. Sri Lanka has a well educated populace but many lack such experience. This would have been a good opportunity to involve Sri Lankans more directly in the project management so that, when they take over the project, as is planned, continuity and experience will have been maintained.

CARE also regularly devotes considerable time to the activities and participation of personnel from both the Ministry of Health and Education. A field work team of three to four persons spend three of four weeks a month in the field checking on the activities. An activity is visited by a CARE team about once a year. The general scope of

the review covers distribution schedules, storage facilities, recipient levels, extent of food damage, personnel, and status of measurement exercises, etc.

The primary omission found in the CARE supervisory format was that the team was not checking to insure the health personnel are properly interpreting the growth charts. Several instances were found where first degree malnourishment was being classified as second degree.

The Ministry of Education monitors and supervises its distribution responsibilities for the School Feeding project. The communication system between regional directors (who are often the principal coordinators) and the schools is quite impressive. In conducting field visits the team usually met first with the regional director who summarized the activities in his region, profiled the community and its needs, and commented on the strengths and weaknesses of the project in his area. In all cases, the regional directors were well informed and knowledgeable about the project, an indication of personal involvement. When the evaluation team asked to visit a cross-section of schools, the directors were immediately able to identify schools meeting the criteria of the evaluation. In a matter of minutes a director would arrange visits. The team soon realized that the schools had not been preselected but rather were chosen on the basis of the criteria given (rural, urban and estate schools; schools in the program which should not be and those not in the program which should be, etc.)

There is little regulation and supervision of the distribution of Thriposha by the Ministry of Health due to weaknesses already discussed which will not be repeated here.

Selection Criteria

Part of the regulative function is the establishment of criteria for selecting eligible recipients. Given the controversy over recipient levels discussed in Chapter II, justifiable criteria become an important means of measuring what program outreach should be and how it is being achieved.

CARE has established such criteria and has put time and attention into this responsibility. Criteria for women to be eligible for MCH are being pregnant or lactating (for up to 6 months), or anemic. Only malnourished pre-school children are to be given Thriposha. A monitoring and evaluation system including regular testing has been established to support the continual determination of eligibility so that non-eligible recipients can immediately be removed from the lists. The children are regularly weighed to gauge their progress and to determine the child's continued eligibility. If the child reaches and sustains a normal level for six months, then the child is to be removed from the eligibility list.

The system itself is sound. While it cannot prevent a midwife from dispensing Thriposha only to her friends or to persons not in need if she truly wants to, with

regular supervision by CARE and MOH staff, it does make it more difficult for such irregularities to occur.

CARE, through the 1973 school survey, determined that schools with 40 percent of the children being malnourished would qualify for the School Feeding project. No satisfactory selection criteria for individual children have been found which explains some of the controversy surrounding this project. The team has recommended that a new, more limited survey of schools be undertaken with all participating agencies joining together to identify an agreed upon criteria for both schools and individuals.

Production and Processing

At the beginning of 1976, processing equipment was imported by CARE and installed at Kundasale. An extrusion process using a Brady cooker which has only been developed for food production in the last two or three years was selected. Producing Thriposha is one of the first operations using this low cost extension cooking technology. Despite the experimental nature of the method, Thriposha is regularly produced 16 hours a day, 5 days a week without any major mishap or breakdown. The quality of the final product, including its very fine texture, makes the product highly acceptable to recipients as verified by recent pre-market surveys. Although the evaluation team did not visit the Kundasale plant as planned, there were no complaints made by ministry personnel regarding the quality of the product.

Principal production and processing constraints which are not insurmountable include availability of imported material inputs like the polythene resin and kraft paper; production of plastic bags; and packing of Thriposha. In discussions with CARE staff it was clear that to the extent possible, they were in control of these problems and had taken requisite actions to resolve them. The problems appear to be no more serious than the usual day to day mishaps.

Distribution and Storage

Because of the nature and purpose of Title II programs, the distribution function is eminently important. The effectiveness of a supplementary feeding program is fundamentally contingent on the function of distributing the food to the recipients. For this reason, the extent to which the Title II program participants carry out this function must be analyzed.

In the distribution path CARE in Sri Lanka calls forward, each quarter, a specified quantity of each Title II commodity. AID has responsibility for getting the Title II commodities to the appropriate U.S. port. Some critics of food aid argue that these imports clog the ports and delay the off loading of other materials. The principal constraint appears to be lack of adequate port facilities to handle all transports.

At the port, CARE handles the bookings and monitors the shipment although AID pays for the ocean transport

costs. The CARE office in Sri Lanka has large blackboards on which departure and arrival dates of ships carrying their needed food are noted. One U.S. staff member is responsible for monitoring the situation from Sri Lanka. CARE also handles the transport of the food inputs to the production and processing plants -- Kundasale for the Triposha and two factories in Colombo for the biscuit.

CARE is also responsible for obtaining the other program food inputs and insuring that they are received at appropriate times. It negotiates prices with sellers in order to incur the lowest costs.

With the relevant food inputs received, CARE takes over the production and processing as described in the earlier chapter and then forwards the new products -- Thriposha and biscuits -- to the Colombo railhead. From here the distribution channel is different for Thriposha and biscuits and each is discussed separately.

Distribution of Thriposha to MCH

As the accompanying map shows (Figure IV-1), Thriposha is distributed from Colombo by train to two principal rail lines and by truck on one road system. As the distance from Colombo increases, rail transport shifts from train to truck. Once the Thriposha reaches a railhead, it either proceeds by rail to another head, or it is stored in a nearby warehouse (for no more than a week) to be picked up and delivered to the civil medical store by trucks. The

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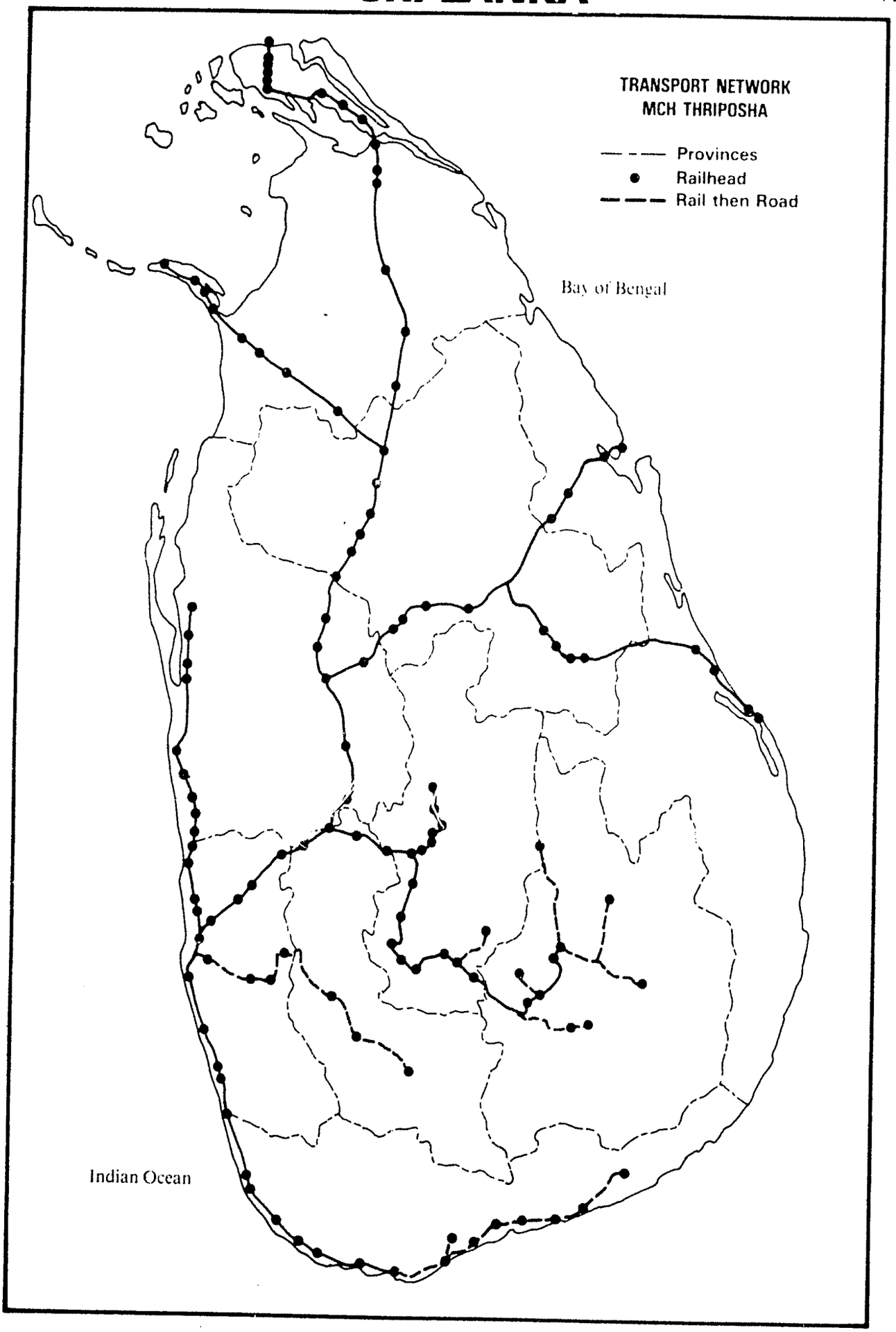

TRANSPORT NETWORK
MCH THRIPOSHA
Provinces
Railhead
Rail then Road
Bay of Bengal
Indian Ocean

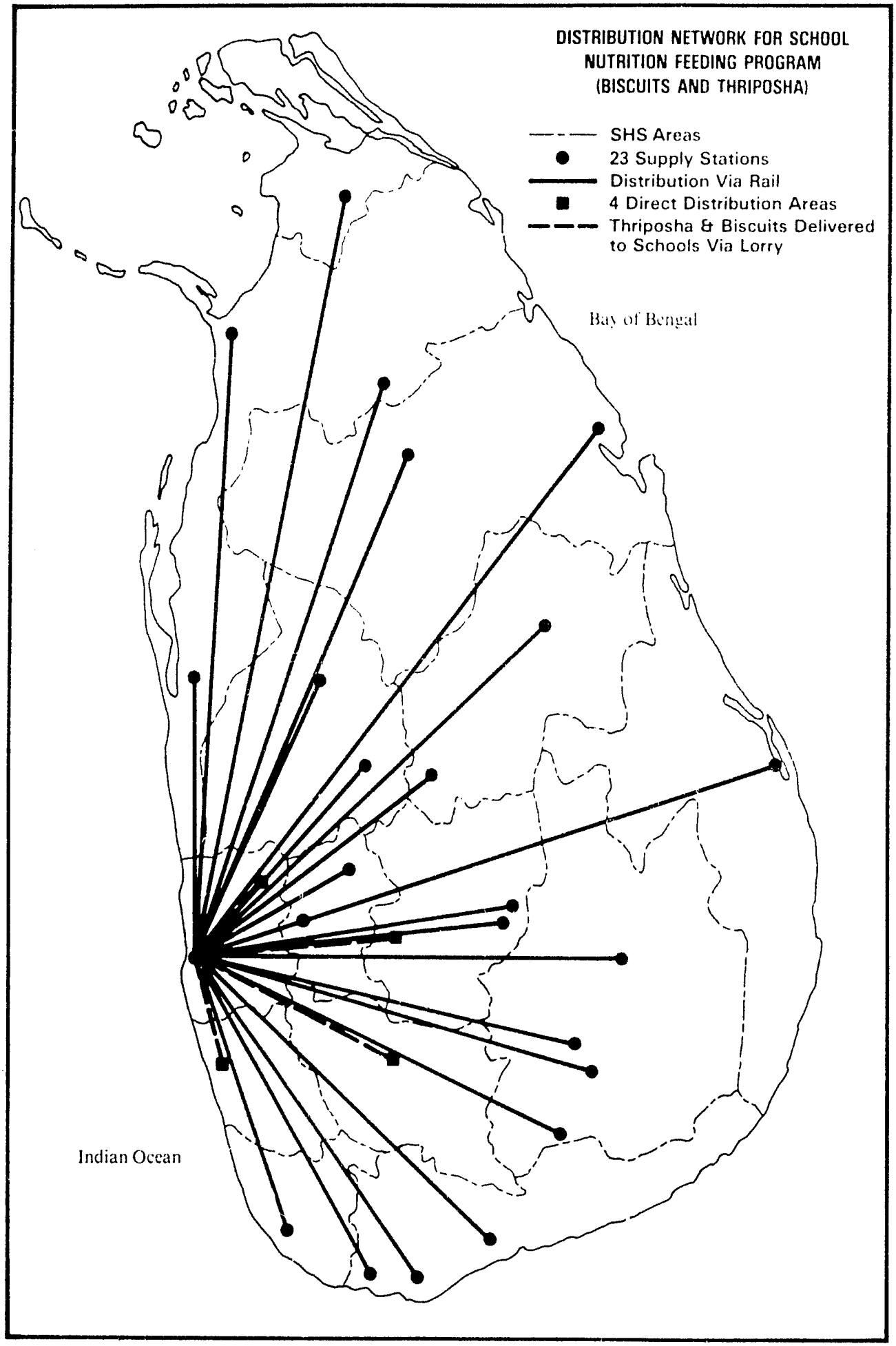
trucks are hired by the regional medical district officers and paid for by Ministry of Health funds. The system varies from district to district depending on budget size for transport and relations between local health officials and trucking firms. A principal weakness highlighted by the Chief Health Officer in the North Central Province, concerns the high price paid for this transport. He suggested that the Ministry purchase its own vehicles for such purposes; such a system has been tried in Galle already. In Galle, competition among MCH and other projects inhibited a regular distribution of the Thriposha in spite of the ownership of vehicles. It appears that the distribution problems encountered in MCH are simply another reflection of the weakness of the health delivery system.

Once the Thriposha is received by the appropriate health unit, it is distributed to the recipients. Although the medical offices should distribute the Thriposha to recipients, more often than not, junior personnel such as the midwives handle this responsibility.

Distribution of the Biscuit

The biscuit is distributed directly from Colombo by train via 22 rail lines and by lorry through four road systems as the accompanying map indicates (Figure IV-2). The biscuit is sent to four direct distribution areas and 23 supply stations. From warehouses near the supply stations and distribution areas the biscuits are transported by truck to schools in the region. For schools in areas inaccessible by truck, the boxes are headloaded for several miles.

SRI LANKA


DISTRIBUTION NETWORK FOR SCHOOL NUTRITION FEEDING PROGRAM (BISCUITS AND THRIPOSHA)
SHS Areas
23 Supply Stations
Distribution Via Rail
4 Direct Distribution Areas
Thriposha & Biscuits Delivered to Schools Via Lorry
Bay of Bengal
Indian Ocean

The regional director of education is responsible for supervising the biscuit distribution in his area. No problems, including budget constraints, were reported to the evaluation team. The major distribution-related problem appeared to be the excessive amount of handling required which caused about 20 percent of the biscuits, because of their shape and fragile nature, to be broken by the time they reach the schools. One solution being investigated by CARE is to produce a round instead of a square biscuit; also, perhaps a change in texture would cause less breakage during the transport phases.

Most schools receive the shipments of biscuits as planned and store them in the principal's office or another place where a careful check could be maintained. The outer cardboard container is often crushed along the corners. This may occur in shipment because of stacking. As a consequence, 10-15 percent of the biscuits are broken so they are difficult to allocate equally. There was also some crumbling -- probably not a significant amount. Such detriments could be corrected if the outside cartons were of firmer construction, and limits were placed on quantities stacked.

Although the distribution channels are different for the MCH and School Feeding projects, they are quite competitive locally and at the regional level. Since the Ministry of Education can pay a higher price for the trucks than the Ministry of Health, fewer distribution problems or bottlenecks occur in the School Feeding project.

Cost and Budgeting

CARE operations are run like a business with specific attention paid to cost and budgeting systems. To insure that it follows proper procedures and mantains appropriate financial records, CARE has its own auditor to review its records periodically. In the last year AID and GAO have also audited the program. To insure that proper accounting is being provided, at least one U.S. staff member plus the director are responsible for financial recordkeeping. A large proportion of the Sri Lankan staff is engaged in recording data and maintaining files. The team was impressed with the CARE staff's ability to respond quickly and accurately to requests for specific data and information.

The one major problem in the cost and budgeting function stems from the inherent nature of the Title II program. In reality, no one organization is responsible for all aspects of Title II. AID pays attention to its share of the program, CARE to its share and the two ministries to their shares. While CARE also supervises the ministries' responsibilities, it is neither necessary nor possible to directly control the inputs of any other agency other than itself daily. CARE may consult the other participating agencies on problems but it has no authority to control or enforce their action. As long as there is a consensus, this tri-partnership works well.

At some point, and the cost and budgeting function is one, someone must look at the program as a whole, not just in terms of each partner's role. This is no doubt one major

contribution of the evaluation using a systems approach such as this. For example, the team was particularly concerned about the total cost of the program. Such cost figures require consistent data from each participating agencies. Records are not normally kept in a consistant manner because each agency has a different system geared to its own parent organization's requirements.

The ability of CARE to provide the cost data requested in the tables is a particularly good test of the content and quality of their cost and budgeting system. The exercise proved to be useful not only to the evaluation team but also to CARE as it could verify and check some assumptions it had been operating under but not had time to examine. The team was also impressed with CARE's records of ministries' costs which it had requested and used for limited studies of various aspects of the Title II program. For other data not in its files, CARE staff knew what people had the data and could retrieve it quickly. The job then became one of reconciling the data for AID, GSL and CARE's own sources which required knowledge of appropriate accounting procedures. Despite all this CARE was able to give us an itemized breakdown of all program costs for FY 1976 and 1977 (approved and actual levels) within one week. It is hoped that CARE will maintain this system, so that future evaluations will readily be able to assess program cost effectiveness. Without a good cost and budgeting system such assessment is impossible.

Monitoring and Evaluation

The monitoring and evaluation practices in the MCH and School Feeding projects differ substantially so each is discussed separately.

MCH

CARE has a built-in monitoring and evaluation system in the MCH project. Crowth charts are distributed for each child under 6, and weights are to be taken regularly so that the child's progress can be charted. The same cards also serve as a useful basis for program effectiveness studies when they are undertaken. Although the field team checks regularly to see if the cards are being kept, the team's site visits revealed that some health personnel were not interpreting the graphs correctly.

For the pregnant or lactating women, hemoglobin tests are given and records kept. CARE has provided test cards for the centers, and the test is simple to take and to read. Based on the sites visited, the tests appear to be taken regularly and correctly.

School Feeding

Monitoring and evaluation in the School Feeding project is weak if not nonexistent, especially compared to the MCH. This may result from the failure to follow up the 1973 survey of schools. This is tragic since that survey could have served as useful baseline data for subsequent project effectiveness assessment.

CARE is aware of this weakness in the project. Quite independent of our effort, they have proposed doing another survey in FY 1979. The team discussed the problems associated with undertaking another national census and CARE agreed that a stratified random sample of a limited number of schools would be more appropriate.

CARE and the MOE must also work out a system to weigh the school age children regularly. This is a sizeable task since training of teachers, procurement of costly scales, design and distribution of charts, and other activities all must be planned and implemented. However, schools have experience in measuring older children although that project has now been suspended. Contact should be made with persons involved in the B/G program to determine how this previous program could serve as a guide. In the long run, the benefits merit the undertaking. The primary school child is at an impressionable age and if the child can be taught the importance of weighing himself or herself as an indicator of health status, the schools, through this feeding project, will make a major contribution to improving the health status of the next generation.

CHAPTER V. EFFECTIVENESS ANALYSIS

The two Title II projects in Sri Lanka relate to three target groups - preschool children, primary school children and pregnant or lactating women. The question arises as whether these are the critical groups -- ones in most need -- in the country. Existing studies support the contention that they together comprise the most vulnerable groups, especially in terms of nutritional deficiencies, at least partially because of the customary distribution of food within the family unit. It is customary for the father to eat first followed by the older male children, the girls, and toddlers and the mother last. The distribution of food is not according to need; mothers and young children are always the most adversely affected by food shortage.

Studies by the National Medical Research Institute and other organizations have indicated that about 250,000 pregnant and lactating women and 1,000,000 infants and preschool children need food supplements to improve their nutritional status. According to CARE, the Ministry of Health delivery system reaches about 60 percent of the pregnant or lactating women (150,000) and 45 percent of the preschool children (450,000). The MCH project in FY 1977 reached 67,000 pregnant or lactating women and about 180,000 infants and preschool children. This is about 45 percent of coverage of

the pregnant and lactating women and 40 percent coverage of the preschool children reached by the MOH. These figures correspond to MCH coverage of 27 percent of needy pregnant and 18 percent of needy preschool children. While the project reaches the needy, there is clearly scope for expansion. CARE has already planned for such expansion. The commercialization of Thriposha is seen as a major means of reaching an even higher percentage of the needy, without constraint by the Ministry of Health institutional infrastructure.

The program is well distributed throughout the country and extends into critical areas of the urban, rural and estate sectors, as indicated by earlier nutrition studies. The Thriposha project has reached estate areas even before the Government took over the health services of the estates. As the Government takes over the estate schools, these are also being included in the School Feeding project.

There are insufficient data to state unequivocally that among the three target groups, one is needier than another. A survey in the North Central Province indicates primary school children are more malnourished than preschool children, but this has not been confirmed nationally. Until this is studied further, the most definitive statement which can be made is that each Title II target group is comparably in need.

Nutritional Status Preschool Children in Sri Lanka

The nutritional status of the preschool children in Sri Lanka has recently been extensively surveyed. This survey was sponsored by the U.S. Department of Health, Education and Welfare Public Health Service Center for Disease Control in cooperation with the Ministry of Health, Government of Sri Lanka; CARE/Sri Lanka and USAID. The procedures used were simple but obtained the maximum useful nutritional data with a minimum input, using practical, inexpensive equipment and suitable statistical evaluations. The survey has provided a reliable reference data base; has established procedures for conducting further surveys; and has made nutritional assessments of the anthropometric, biochemical and clinical observations.

This survey was conducted because a number of nutritional disorders had previously been identified including protein-calorie malnutrition (pcm); iron deficiency anemia; endemic goiter; and possible vitamin A deficiency. In certain areas marasmus and kwashiorkor had been reported.

As a consequence, accurate height, weight, and age determinations were made on a statistically selected sample of children from 6 to 72 months of age from the 15 S.H.S. areas in Sri Lanka, and an additional special socioeconomically advantaged group from private pre-grade schools in Colombo. Blood samples were collected and clinical observations were made concerning vitamin A deficiency symptoms, such as Bitot spots, corneal scars, and night blindness.

Protein-calorie malnutrition was a general problem in rural Sri Lanka, particularly in the "estate" rather than the "village" populations (Table V-1). More than half the rural children were less than 90 percent of the NAS weight-for-height standard (Table V-2), one-third were less than 90 percent were of the NAS height-for-age standard (Table V-3), and only 9.2 percent were normal weight-for-age using the Gomez Classification (Table V-4). The central portion of the country had the worst affected areas with the very young (6-11 months) children being the more normal, and becoming worse with age up to 72 months.[1] There was a very low prevalance of pedal edema (0.2%) attributable to severe undernutrition with no apparent localization.

Clinical vitamin A deficiency symptoms including corneal scarring or the presence of Bitot's spots were found in insufficient numbers to indicate a significant deficiency of this vitamin in this country.

It was of interest to note that in certain areas of Sri Lanka, some of the children (8 percent) had fluorosis which results when the water supply generally exceeds 2 ppm fluorine. While the mottling of the enamel of teeth may be an esthetic detriment, the beneficial effect in the prevention of dental caries persists from infancy through adult life.

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1. From this it can be inferred that the primary school children are very similar if not in a more serious nutritional pcm deficit.

Table V-1. Percent Distribution Gomez Classification of Malnutrition, Estate and Village Children

Numbers of children; Location	Normal[a]	Degrees of malnutrition		
		First degree[b]	Second degree[c]	Third degree[d]
Village (12,301)	10.1	51.0	35.8[e]	3.1[e]
Estate (1,130)	2.9	33.3	54.7[e]	9.1[e]
Total Rural (13,431)	9.2	48.8	38.2	3.9

a. Normal is 90.0+.
b. First degree is between 75.0 and 89.9.
c. Second degree is between 60.0 and 74.9.
d. Third degree is less than 60.0.
e. Severe malnutrition is characterized by combining the second and third degree categories; therefore, severe malnutrition exists in 39.9 percent of village and 63.8 percent of estate children surveyed.

Source: CDC Survey, p. 42.

Table V-2. Weight-for-Height: Percent of Sir Lanka Survey Population by NAS Reference Weight-for-Height Median by Individual SHS Ares

	Percent of NAS reference median			
Population	Less than 80.0	80.0-89.9	90.0-99.9	100.0+
Total rural	6.6	46.0	39.8	7.5
Range	(3.7-8.8)	(41.3-49.2)	(36.5-43.5)	(5.6-13.4)

Source: CDC Survey, p. 94.

Table V-3. Height-for-Age: Percent of Sir Lanka Survey Population by NAS Reference Height-for-Age Median by Individual SHS Areas

	Percent of NAS reference median			
Population	Less than 85.0	85.0-89.9	90.0-94.9	95.0+
Total rural	9.0	25.7	41.7	23.5
Range	(3,7-17.2)	(17.0-34.5)	(35.7-45.9)	(14.7-35.4)

Source: CDC Survey, p. 95.

Table V-4. Percentage Distribution of 13,450[a] Children Using the Gomez Classification[b] of Malnutrition, by Age Group by Months

Age group	Number of children	Degrees of malnutrition			
		Normal[c]	First degree[d]	Second degree[e]	Third degree[f]
6-11	1,230	22.0	51.8	22.8	3.4
12-23	2,598	10.8	50.0	35.0	4.2
24-35	2,425	9.9	53.8	33.8	2.5
36-47	2,511	9.0	50.9	36.9	3.3
48-59	2,503	5.8	47.5	43.2	3.5
6-71	2,183	3.4	39.3	51.0	6.3
Total	13,450	9.2	48.8	38.2	3.9

a. Percent, weighted, NAS Reference Median Weight-for-age.
b. Adv. Pediatrics 7:131 (1955).
c. Normal is 90.0.
d. First degree is 75.0-89.9.
e. Second degree is less than 60.0-74.9.
f. Third degree is less than 60.0.
Source: CDC Survey.

Although nutritional anemia results from the survey were difficult to interpret, approximately 4 percent of the village children were involved. Their physical work capacity and hemoglobin concentration responded to iron supplementation.[1] Children must retain iron not only to maintain their hemoglobin concentration but also to increase iron stores during their period of growth.

Nutritional Status of School Age Children

In 1973 CARE and the Government of Sri Lanka undertook a nutrition survey of 1,122,773 school children aged 6-12 years. Arm circumference-for-height measurements (HT-AC) were used to indicate the incidence of malnutrition in each school. Local norms were established on the basis of a separate study of 7,000 well nourished male and female school children aged 6-16 years. On the basis of weight-for-height-for-age measurements of 364 children in a pilot pretest survey, 38 percent were classified malnourished as defined as less than 85 percent of Sri Lanka and Iowa standards. Of these 22 percent were degree one; 11 percent degree two and 5 percent degree three. Using the height-arm circumference measure, 30 percent of the children were malnourished as defined by less than 90 percent of the Sri Lanka standard. There was sufficient correlation between the two methods to warrant the use of the HT-AC measure. Signs of vitamin deficiencies -- Bitot spots, angular stomatitis, fissures of the tongue, epiphyseal enlargement and dermatitis -- were observed in 10 percent of the children examined.

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1. American Journal Chemical Nutrition 30:910-17 (1977).

The results of the larger survey also confirmed substantial malnutrition levels as evidenced by stunted growth. About 30 percent of the girls and 40 percent of the boys were determined to be malnourished. The problem was pervasive throughout the country even though there was considerable variation among schools.

Another survey in the North Central Province confirms the high incidence of malnutrition and other health problems among school age children. Using the Harvard standard, 65 percent of the primary school children were malnourished with most in the second degree range. The incidence of malnutrition was higher than in the 0-6 age group (Table V-5). There was a sharp increase in the higher grades of malnutrition with increases in age.

It is unknown how representative the above survey is of the nation. The CDC study is partially supportive of the above conclusion. As Table V-4 indicates, using the Gomez classification, the incidence of second and third degree malnutrition increased with age so that those in the 5-6 year old category were worse off. If the North Central Province survey is correct, these incidences of malnutrition might continue to worsen into later years.

An alternate means of comparing nutritional status of preschool and primary school age children is to compare their nutritional requirements with nutritional intakes. Nutritional requirements are available but not nutritional intake by age. Therefore, the team could not substantiate or confirm the above results using this approach.

Table V-5. Nutritional Disorders in Children Under 12 Years

(Percent)

Protein calorie deficiency	Preschool	Primary school
Normal	11	Nil
P.C.M. 1	61	20
P.C.M. 2	25	54
P.C.M. 3	3	26
Clinical marasmus		Nil
Kwashiorkor		Nil
Vitamin A deficiency (Xerophthalmia)		Nil
Phrynoderma (Follicular hyperkeratosis)		2
Ariboflavinosis (Angular stomatitis, glossitis)		3
Fluorosis		8
Anaemia (haemoglobin less than 11 g/100ml)		52
Arm circumference less than 14 cm		
Microscopic examination of faeces		25
Hookworm		10
Roundworm		33

Note: In all children, chest circumference had exceeded head circumference by 24 months.

Source: Beatrice De Mel and Kamahka Abeyaratne, "Diet and Health in an Isolated Agricultural Community in the Dry Zone," Ceylon Medical Journal, 1976, 21:34.

The implication of the North Central Province survey for the Title II program is that a School Feeding project is at least as significant if not more so than MCH at present. This is not consistent with AID's global policy to reduce School Feeding versus MCH project coverage and scope. Further substantiation or refutation of this policy requires a new survey of school age children along the lines of the CDC, or including nutritional intake data which can be compared with nutritional requirements to estimate nutritional gaps.

Endemic goiter was reported in the South West region of Sri Lanka in 1950 where it was observed in children and particularly girls. In some villages the incidence was reported to be over 50 percent. In 1963 another survey (MAHADEVA) found that the incidence of goiter had increased from the earlier survey, being primarily associated with females. There was a 11.4 percent incidence among 5,268 females. An even higher incidence was found in antenatal clinics where it ranged from 0.4 to 34.8 percent. The wet zone of Sri Lanka with an annual rainfall of 100-200 inches will have leached the iodine from the soil and the food produced there will have insufficient iodine to meet human need. Iodine-rich seafoods are the only good source of iodine in the diet. Although iodinization of all salt produced in Sri Lanka has been advocated, it is not being done at present and endemic goiter is said to be on the increase.

Nutritional Status of Pregnant or Lactating Women

The nutritional status of pregnant or lactating women of Sri Lanka is suspect for a number of reasons. The recommended allowance for energy during lactation is 2,450 calories, a value 10-20 percent greater than any dietary survey report. Even the value for energy during the second half of pregnancy (2,250 calories) exceeds most average survey figures regardless of economic status or geographic location. These data are substantiated by a high infant mortality rate and a high percentage of below normal birth weight.

The shortage of energy accentuates the protein deficiency by utilizing protein for energy rather than its more vital metabolic role. In addition, the protein found in the Sri Lankan diet is mainly vegetable which is of a lower biological quality than found in animal food. The daily protein recommended allowance for lactating mothers is 69g (1.5g/Kg body weight), a value approached only by income levels in exess of 1,000 Rs/month. The rate of malnutrition in pregnant mothers by S.H.S. areas is shown in Table V-6. The weighted average for maternal morbility rate is 1.0 with a 5-fold range within the S.H.S. areas.

A number of other essential nutrients of particular demand due to pregnancy and lactation are also minimal in this diet. These include calcium, iron, vitamin A and many of the B vitamins. The calcium allowance for lactation is 1,000 mg. daily, an impossible value to obtain by the usual

Table V-6. Rate of Malnutrition in Pregnant Mothers by S.H. Areas, 1974

S.H.S. areas	Maternal mortality rate	Number of pregant mothers	Numbers of anemic mothers
Comombo	0.5	89,640	16,135
Galle	0.6	25,260	7,578
Jaffna	0.7	23,850	4,770
Vavuniya	0.8	5,790	1,158
Kegalle	0.8	22,620	6,333
Ratnapura	0.8	22,560	6,310
Kalutara	0.9	25,140	7,542
Anuradhapura	1.1	19,620	5,493
Kurunegala	1.2	35,010	10,503
Badula	1.4	26,430	7,929
Puttalam	1.5	13,080	3,270
Batticaloa	1.5	18,060	6,321
Matara	1.6	31,920	9,576
Matale	1.6	15,930	4,779
Kandy	2.6	54,150	16,245
Weighted Average, Sri Lanka	1.0		
TOTAL		429,060	113,948

Sri Lankan diet with its limited consumption of dairy products. Calcium supplementation is commonly given at the clinics visited.

Another element whose allowance is maximized during pregnancy and laction is iron. The number of anemic pregnant mothers by S.H.S. areas was 114,000 out of 429,000 (27 percent) using the Talquist method for hemoglobin (Hb) estimation. This value probably reflects the possible contribution of prior iron supplementation as values in excess of 50 percent anemia have been reported in other surveys.[1] The contribution of iron from animal products is minimal in this diet although good sources are present in kurakken, gingelly seeds, mukunuwenna, certain pulses, green gram, and cow pea and some condiments although their total contribution is limited.

Other essential nutrients with increased demand during pregnancy and lactation which are deficient in many diets include vitamin A, and several B vitamins. Trace minerals such as iodine will be deficient in the diet in certain areas where iodine is lacking in the soil, and food consumption is limited to local produce. Endemic goiter will result.

Other contributing factors towards malnutrition within this group include the lack of potable water supplies resulting in diarrheal problems, dysentary and other related

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1. Gardner et al, American Journal Clinical Nutrition, 1977; and Beatrice De Mel and Komatka Abeyaratne, Ceylon Medical Journal, 21:34, 1976.

diseases. This is particularly true for the areas where piped water supplies are the exception. Other sanitation practices are poor or lacking in many areas, resulting in the presence of roundworms, hookworms, and other parasites which complicate the nutritional demands of the mother as well as her child. Up to two-thirds of the nutritional intake can be wasted when these diseases occur. The presence of parasites in children was acknowledged in all locations visited. It is certain that their families are likewise afflicted.

It may be concluded from numerous dietary survey data, that the nutrient status of the great majority of pregnant or lactating mothers is poor compared with that which would result if they were obtaining the daily recommended allowances for their metabolic status.

Economic Status of Sri Lankan Population

The population's need for food is based not only on nutritional requirements but also the ability to obtain food based on earnings and income. Therefore, the supply of food may not be the only constraint to meeting food needs. From the demand side, it is necessary to analyze the relationship between income and ability to purchase food available at market prices. If a substantial portion of the population cannot afford to purchase these foods, then a free supplementary food program is warranted.

According to the World Bank report, the per capita GDP for Sri Lanka was $200 in 1976, placing it among the poorest

nations of the world. However, because of strong government commitment to health and social services, Sri Lanka ranks very high on quality of life indicators (literacy rates, physicians or nurses per person, mortality and morbidity rates, etc.) both as compared to other Asian countries and as compared to other countries with similar GDP per capita. It is unlikely that the per capita income figure represents a reliable measure of Sri Lanka's relative poverty.

Social service programs must deal with the absolute poverty which does exist in the country. As Table V-7 indicates, households generally spend 50-60 percent of their income on food; those in low income groups spend even more. With little scope for decreasing these percentages, it is imperative that incomes increase in order to purchase adequate food. While employment and earnings opportunities are constrained, more food must be made available free or at affordable prices.

Data on poverty levels in Sri Lanka are based on household rather than per capita income. The extent of poverty is then defined using several different measures.

The national average income per household in 1969-70 was estimated to be $597 a year[1] or $961 in the urban sector, $544 in the rural sector and $413 in the estates. One study done by Ceylon Federation of University Women has

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1. Using an exchange rate of 5.93 rupees = $1.00.

Table V-7. Percentage of Income Spent on Food by Income Groups

(1973-74)

Annual income (rupees)	All island	Urban	Rural	Estate
0-300	64	66	54	61
301-600	68	82	68	76
601-1,200	64	58	65	66
1,201-2,400	63	66	62	68
2,401-4,800	60	53	62	68
4,801-9,600	53	53	53	56
9,601-12,000	44	46	46	15
12,001-18,000	26	20	38	15
Over 18,001	30	28	33	23
Overall average	55	47	58	59

Source: Figures based on Central Bank, Survey of Consumer Finances, 1973, Colombo, 1974 (pp. 502-505).

indicated that an average household would have needed an income of $971 in 1970 to sustain a minimum consumption basket of food, clothing, health, educational and household requirements. By this criteria, 86 percent of the population would be below the poverty line.

Another study in 1969-70 based on food values of actual quantities consumed indicated that urban households with incomes less than $809 and rural households with incomes less than $304 a year failed to achieve nutritional adequacy. This corresponds to about 40 percent of the population.

Finally, an alternate indicator of the extent of poverty in Sri Lanka is the percentage of the population obtaining rations under the GSL food subsidy program. Ration books were revalidated for 42 percent of the population but 15 percent of this is being further investigated. By this indicator 25-40 percent of the population are economically poor and probably in need of food supplementation.

Education Status and Need

Since independence, public education policy has been regarded as part of an income policy. Equalizing educational opportunities is seen as a first step towards greater socio-economic equity. The steady expansion of the formal education system has concentrated on making the same curricula and facilities as widely available as possible, so that those with ability (irrespective of background) might compete for the best jobs.

Public education has been provided free throughout the system (from primary to university level) since 1945. The distance a child has to travel to reach a free primary school does not usually exceed 2 miles in the remotest area. Any child who wishes to be enrolled must be provided a place as long as he satisfies the entry age requirement. However, in educationally backward areas, children drop out before attaining even functional literacy and the quality of the facilities and teaching provided is poor. The lower income groups are still very poorly represented at the secondary and tertiary education levels as can be seen from Table V-8. The main deterrent is economic. The parents, being poor, cannot support their children through school; cannot contribute to the P.T.A. to put up buildings for teachers' accommodation; and can seldom get good teachers to stay for long periods.

Participation rates have fallen from 57.3 percent in 1970 to 53 percent in 1973.[1] School enrollments declined 6 percent between 1971-72, and the 1973 level remained well below the 1971 peak.[2] Repetition rates in primary grades are high compared to later grades. Over 20 percent of the children in grades 1 and 2 must repeat, and 14-18 percent in grades 3, 4 and 5 repeat.[3] It is widely acknowledged that low health and nutritional status are contributing factors to these rates.

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1. Marga Institute Report, Table IX - Participation Rates of School Age Population 1970 and 1973 - All schools.
2. Ministry of Education - School Census, 1973.
3. Ibid.

Table V-8. Participation Rates in Education by Age of Students and Household Income Groups 1969-70

Income group	Age groups 5-9	10-14	15-19	20-24
Below Rs. 100	61.9	64.7	29.1	6.3
Rs. 100-199	68.9	73.9	28.9	2.2
Rs. 200-399	75.8	81.3	36.1	6.5
Rs. 400-599	79.6	85.7	48.7	6.3
Rs. 600-799	85.6	85.6	57.5	16.6
Rs. 800-999	76.3	83.8	55.3	22.2
Rs. 1,000 over	85.6	81.3	61.5	19.9
All groups	73.8	79.3	38.8	6.8

Source: Socioeconomic Survey, 1969-70.

Dropout rates are also very high. Out of 100 pupils who enroll in grade 1, only 52 will reach grade 5. The 1975 school census showed that 42 percent of children enrolled in grades 1-5 dropped out by grade 5.[1] The largest share of dropouts occur in the primary grades. These dropouts have received only a partial education and are poorly adapted to the country's social and economic environment. They tend to fall into the unemployed category which is already large because the traditional employment opportunities, especially in agriculture, are being eliminated.

If a School Feeding project can serve to keep children in school or to improve their performance, it is needed as an educational incentive. No studies have been undertaken, however, to verify this relationship although CARE is considering one in the next few years.

Nutritional Contribution of Thriposha

Thriposha provides a daily food supplement of 50 grams. The nutritional composition of the various components used in blending Thriposha are shown in Table V-9. Of particular nutritional interest are the significant concentrations of protein, calcium, iron, vitamin A, and ascorbic acid present in ICSM. There is also a high concentration of lysine which is usually the limiting amino acid in cereal eating countries. Local grains (corn) can be blended (25 percent) in the formulation of Thriposha. This will dilute the nutritional contribution to some extent for most nutrients (Table V-10).

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1. Ministry of Education School Census, 1975.

Table V-9. Nutritive Value, Selected Nutrients Found in Triposha

(Values per 100 g finished dry commodity)

Nutrients	ICSM	Corn	Soy-fortified flour[a]
Food energy calories	380	348	357
Protein, grams	20.0	8.9	16.0
Crude fat, grams	6.0	3.9	1.3
Crude fiber, grams	1.2	2.0	0.6
Ash, grams	4.0	1.2	1.8
Carbohydrates, grams	60	72.0	72.0
Calcium, milligrams	900	22	211
Phosphorus, milligrams	700	268	182
Iron, milligrams	18	2.1	5.0
Vitamin A, international units (IV)	1700	490	882
Thiamine (B_1), milligrams	0.8	.37	.64
Riboflavin (B_2), milligrams	0.6	.12	.36
Niacin, milligrams	8.	2.2	4.6
Ascorbic acid (C), milligrams	40	-	-
Lysine milliongrams/ grams protien	58	29	28
Threonine milligrams grams protien	39	40	31
Protien Efficiency Rate	2.4	1.2	1.9

a. Soy fortified flour at 12 percent.
Source: FFP PL 480 Title VI Commodities Reference Guide, 3/01/78.

Table V-10. Nutritive Value Selected Nutrients, Contribution of 50 grams Daily

	Thriposha	Thriposha, Domestic[a]
Food energy Kcal	190	185
Protien, grams	10.0	9.9
Crude fat, grams	3	3.1
Crude fiber, grams	0.6	0.9
Ash grams	2.0	1.8
Carbohydrate, grams	30.0	31.5
Calcium, milligram	450	340
Iron milligrams	9	6.9
Vitamin A, international units (10)	850	698
Thiamine (B_1), milligrams	0.4	0.3
Riboflavin (B_2), milligrams	0.3	0.2
Niacin, milligrams	4.0	3.2
Ascorbic acid (C), milligrams	20.0	15.0

a. Based on 25 percent corn (minimum nutrient value).
Source: FFP PL 480 Tittle 11 Commodities Reference Guide 3/01/78.

Age-height-weight tables for Sri Lanka children obtained during the period from 1950 to the 1970s from Dr. De Mel indicate that the weights of children by age listed in the Daily Recommended Allowances are for well-nourished children at the maximum age listed (6 year olds in the 4-6 class). Other tables (Gunasekara and Mahadeva) of age-height-weight obtained during the 1960s indicate that very few children achieve the weight listed in allowance table for age. Most children do not meet the age-weight mean listed for their particular age. The values calculated as the percent contribution made by Thriposha to the daily allowance is minimal; most children of a given age are smaller than the listed weight for those nutrients which are related to weight.

It seems incongruous to mention the contribution of ascorbic acid found in Thriposha in a fruit-growing country like Sri Lanka. However, it was observed, particularly in estate schools and clinics, that very little fruit was included in the diet. The ascorbic acid content of the major cereals used, rice and wheat flour, is nil, and the only available ascorbic acid in the diet comes from vegetables which may not be a rich source of this vitamin. The major contribution of ascorbic acid in Thriposha may actually serve a vital purpose for certain children who are unable to obtain fruit even in this fruit laden land.

Nutritional Contribution for Pregnant or Lactating Females

The recommended daily allowances for the pregnant or lactating female are in some instances higher than those for

the heavier adult males. This is to be expected as there is a heavy demand for nutrients in milk production. In spite of this, Thriposha contributes approximately one-fourth or more of the daily recommended allowance for calcium, iron, vitamin thiamine, niacin and ascorbic acid. The vitamin A contribution is of particular significance in Sri Lanka as it increases the concentration of this vitamin in the mother's milk. This is probably one reason that the symptoms of vitamin A deficiency have declined. For the females of childbearing age, Thriposha contributes at least 25 percent of all the recommended allowances with the exception of energy (calories). As mentioned previously, energy can be obtained from sources which are not necessarily abundant in the other essential nutrients.

The Daily Recommended Nutrient Allowances for Sri Lanka are based on the Handbook on Human Nutritional Requirements, WHO Monograph Series No. 61 (1974). The body weights of the various classes of individuals in Sri Lanka are listed to be about 90 percent of that listed by the WHO monograph. For many nutrients this difference is not of consequence but body weight is important in terms of energy and protein. Thriposha would have a greater nutritional impact in Sri Lanka for those nutrients related to body size.

There is no doubt that Thriposha provides an excellent dietary supplement for the medically selected mothers and preschool children (Table V-11). However, the primary school recipients should be reevaluated and consideration be given to new schools since 1973 and the estate schools.

Table V-11. Nutritional Contribution of 50 Grams of Thriposha Daily; Percent of Daily Recommended Nutrient Allowance for Sri Lanka for Participants in MCH

Type of participant	Nutrient Allowance								
	Food energy Kcal	Protein	Calcium	Iron	Vit. A	Thiamine	Ribo-flavin	Niacin	Ascorbic acid
Male/female[a]:									
1-3 years	16	42	100	110	340	80	38	44	100
4-6 years	11	32	100	110	283	57	27	33	100
Female:									
20-29 years	10	24	100	32	113	44	23	30	66
20-29 years, lactating	8	14	45	23	71	36	18	22	66

a. Individual average weight per Kg: ages 1-3, 12.0; ages 4-6, 18.2; ages 20-29 (female), 47.0; ages 20-39 (female lactating), 47.0.

Source: Department of Nutrition, Medical Research Institute, Colombo, 1976.

Nutritional Contribution of Biscuits

The nutritional contribution of the biscuits as supplied to the school children is found in Table V-12. The present distribution of five biscuits each supplies 115 calories, 4 grams of protein, 88 mg calcium, 219 IU vitamin A and 0.15 mg thiamine. The percent contribution of these nutrients towards the daily recommended allowance for the various ages within the primary school is found on Table V-13.

Over 20 percent of the daily allowance for vitamin A, calcium and thiamine is found in five biscuits for children 4-6 years old. Up to 15 percent of the daily allowances for iron, protein and riboflavin are also obtained. The caloric contribution toward the energy allowance is minimal which is unfortunate because this is of major importance but can be obtained from other not as nutritious foods, i.e. sugar. The caloric contribution from five biscuits is the least significant of all dietary allowances.

Table V-14 lists the percentage contribution from eight biscuits which was the original allocation. The percentage contribution becomes significant (over 10 percent) for all nutrients for the younger children (5-9 years). For the older children, the need for energy, niacin and additional protein are indicated, although 14 percent of the protein requirement from one food source is not to be overlooked.

The nutritional contribution of the biscuit can only be calculated from the daily recommended allowances for the various ages and sex involved. However, the percent contri-

Table V-12. Calculated Nutritive Value of Biscuits, Primary School Feeding Project

Nutrients	Per 100 g dry commodity	Per 5 biscuits[a]	Per 8 biscuits[a]
Energy, Kcal	406	115	184
Protein, g	15	4.2	6.8
Crude fat, g	9	2.5	4.1
Crude fiber, g	0.5	0.1	0.2
Ash, g	2.0	0.6	0.9
Carbohydrate, g	66	18.6	29.9
Minerals:			
Calcium, mg	312	88	141
Phosphorus, mg	241	68	109
Iron, mg	5.2	1.5	2.4
Vitamins:			
Vitamin A, I.U.	770	218	349
Thiamine B_1, mg	0.53	0.15	0.24
Riboflavin B_2, mg	0.38	0.11	0.17
Niacin, mg	3.9	1.1	1.8
Ascorbic acid, mg	4.4	1.2	2.0
Essential amino acids:			
Lysine, mg/g protein	29	8	13
Thionine, mg/g protein	27	8	12
Methionine-cystine, mg/g protein	28	8	13

Note: One pound = 80 biscuits; 5 biscuits = 28.3 g; 8 biscuits = 45.4g.
Source: FFP PL 480 Title II, Commodities Reference Guide, March 1, 1978.

Table V-13. Percent Contribution by Five Biscuits of Daily Recommended Nutrient Allowance for Sri Lanka

(Present distribution)

Item	4-6 yr (m-f) 18.2 kg	7-9 yr (m-f) 26.2 kg	10-12 yr (m) 34.0 kg	10-12 yr (f) 36.0 kg
Energy, Kcal	7	6	5	5
Protein, g	14	12	9	9
Calcium, mg	20	20	14	14
Iron, mg	15	15	15	15
Vitamin A, I.U.	73	55	38	38
Thiamine B_1, mg	21	17	15	17
Riboflavin B_2, mg	10	8	7	8
Niacin, mg	9	8	6	7
Ascorbic acid, mg	6	6	6	6

Source: Department of Nutrition, Medical Research Institute, Colombo, 1976.

Table V-14. Percent Contribution by Eight Biscuits of Daily Recommended Nutrient Allowance for Sri Lanka

(As planned distribution)

Item	4-6 yr (m-f) 18.2 kg	7-9 yr (m-f) 26.2 kg	10-12 yr (m) 34.0 kg	10-12 yr (f) 36.0 kg
Energy, Kcal	11	10	8	8
Protein, g	22	19	14	14
Calcium, mg	32	32	22	22
Iron, mg	24	24	24	24
Vitamin A, I.U.	117	88	61	61
Thiamine B_1, mg	34	27	24	27
Riboflavin B_2, mg	16	13	11	13
Niacin, mg	14	13	10	11
Ascorbic acid, mg	10	10	10	10

Source: Department of Nutrition, Medical Research Institute, Colombo, 1976.

bution as listed in Tables V-13 and V-14 are a minimum, for it is doubtful that many Sri Lankan children actually consume the daily recommended nutrients as listed.

The team learned that biscuits consumed during the morning recess were the child's "breakfast" for that day. If this is the case, biscuits should play a much more important role than the calculated tables portray.

Again, the contribution to those nutrients in short supply in Sri Lanka -- namely calcium, iron and vitamin A -- is very commendable. The vitamin A content in the biscuits may be one reason that deficiency symptoms for this vitamin were not observed in the last nutrition survey to a significant degree.

The values are calculated assuming each child consumes his allotted biscuits. Since the children are taught by the parents to share with their family, some biscuits are probably brought home. Others who are in need of additional nutrients may eat these biscuits so they are not wasted. However, this does reduce the nutritional impact depending on the number of biscuits shared. Most children need to eat all the biscuits as planned.

In addition to the nutritional contribution from the biscuits, their distribution influences better attendance at school, and more willing scholars. The palatability of the biscuits was good although they are very dry, and potable water can be a problem in many schools.

The biscuits at the Ceylon Biscuit factory were baked at higher temperatures and were browner than biscuits baked at Malibans Biscuit Manufacture Ltd (Table V-15). It is very doubtful that the difference in baking temperature would cause any significant measurable difference in the nutritive value of the biscuit.

Several attempts to improve the nutritional value of the biscuits have been made with only limited success. The goal has been to raise the caloric content and the energy level. One of the suggestions tried was to put two biscuits together with a creme sugar filling similar to a sandwich. This would increase the energy but would entail purchasing more sugar. Durability and storage can also be problems. The addition of more non-fat dried milk would certainly increase the nutritional value of the biscuit, but create baking problems. Additional oil could be added to bolster energy but would cause increased crumbling in shipment. The addition of defatted soy flour would enhance the protein content and better the biological composition of the amino acids. Scope for improving the biscuit may thus be very limited.

A few children in Kandy and Columbo have been getting a round soft dough biscuit. This program is being phased out in June during school vacation. One bun was said to weigh 65 g, contain 7 g of protein and 170 calories. This is comparable in nutrient value to the eight biscuit ration.

It was observed that the non-fat dry milk used in making the biscuits comes from New Zealand. The label did

Table V-15. Biscuit Recipe as Used in Sri Lanka by Malibans Biscuit Manufactories Ltd. and Ceylon Biscuits Ltd., April 1978

Composition per 100 grams mix	
Soy-fortified flour 12 percent	68g
Soybean salad oil	8g
Sugar	8g
Instant corn soy milk	10g
Non-fat dry milk (New Zealand)	6g

not indicate that the milk was fortified with vitamins A and D as is the U.S. product (2200 IU of vitamin A and 440 IU vitamin D per 100 g NFDM). Therefore, it is fortunate that ICSM which contains these vitamin supplements is a significant part of the recipe and supplies these missing vitamins.

Product Acceptability

In interviews conducted during field visits, recipients and other relevant personnel were asked about the acceptability of the Thriposha and biscuit. Almost unanimously, all spoke very highly of both products.

Thriposha can be prepared in about 30 different ways thus increasing its usefulness and acceptability to a wide range of persons. It can be served in a mixture; hot or cold; as a drink or as part of a soup or solid; and as a weaning food for infants as well as something appetizing for children and adults. In 1976 the Ministry of Health conducted a pre-market survey which included questions regarding its acceptability. Thriposha was consumed by all members of the family in 49 percent of the homes, most of which were in Colombo. Of the other 51 percent, the consumers were primarily the expectant mother or child below 12 years of age. This pattern of consumption was evident primarily outside of Colombo. Table V-16 summarizes Thriposha usage within the family by sector.

Thriposha was also generally eaten each day unless the supply had been exhausted because all members of the family were eating it. The estate and rural families used Thriposha

Table V-16. Thriposha Usage Within Families

	Total	Urban	Rural	Estates
Users sample size	550	300	200	50
	- - - - - Percent of families - - - - -			
Thriposha eaten by				
Whole family	49	54	45	42
Some members of family	51	46	55	58
Thriposha eaten by adults[a]	79	80	78	72
Husband	63	68	60	52
Wife	78	80	77	72
Other male adults	15	17	14	4
Other female adults	21	22	21	12
Thriposha eaten by children	92	93	90	92
Under 2 years	44	48	39	44
2-6 years	69	70	69	64
6-12 years	46	49	48	24
12-18 years	26	29	23	14

a. Figures do not add up to 100 because more than one person in family is consuming thriposha.

Source: Information obtained from Thriposha Pre-Market Survey, CARE, USDA, and Government of Sri Lanka, December 1975 - February 1976, page 25.

more often than urban families. About 91 percent of respondents liked the taste of the Thriposha. The major reasons given were because it "tasted good" or because the "children liked the taste" implying children generally like it more than adults. Thriposha was also found to be durable and easy to store by 82 percent of the respondents.

The overall acceptability of Thriposha was deemed so high, that on the basis of this survey, plans were initiated to commercialize the product. About 75 percent of the respondents said they would buy Thriposha because it was nourishing and good. Of the 25 percent who said they would not buy it; 7 percent said they could not afford it; and 7 percent said they did not like it.

Any problems associated with acceptability appear to arise from lack of sufficient amounts being provided. During the evaluation, the CARE office received two letters asking that clinics be dropped from the MCH project because they did not have enough Thriposha to give to everyone. It was impossible to decide who should get it or who should not. Apparently, there were more people in need than there was Thriposha available, and this situation was causing bad feelings between the community and health personnel.

The biscuit also appears to be widely accepted although no study has been undertaken to substantiate this. The children readily eat the biscuits and, in fact, share it with brothers and sisters because it is good. The biscuit is dry; because children do not have anything to drink with the biscuit, it is harder to eat the full ration. CARE is

investigating ways to improve the texture of the biscuit to make it more acceptable.

Effect on Community Attitudes

It is important to evaluate the receptivity of the Title II program at the community level. How do the citizens perceive the program? This has a major impact on program success and any further contributions to the community.

Citizens of local communities are most receptive to both the MCH and School Feeding activities. For the most part, they perceive the two projects as extensions of government social services programs and take them for granted. They do not think in terms of providing community participation or support to make the activities more responsive to their need. As has been stated earlier, a greater emphasis needs to be placed on contributions "from the bottom up," and both projects have developed to the extent they should now be oriented in this direction.

Effect of Title II on Local Production and Consumption

The issue often arises: do Title II foods serve as a disincentive on local production? Local production is defined in terms of both the same commodities imported by Title II, and substitute commodities.

Wheat and corn (in the form of ICSM) are the principal grains imported under Title II. Since wheat cannot be produced in Sri Lanka, its importation cannot serve as a

disincentive. Corn is indigenous, and CARE has shifted from the use of wheat to ICSM so that the Thriposha can become a totally local product. Then the program, as a major purchaser, can serve as an incentive to increase local corn production. The team commends CARE's willingness to view its role in terms of what it can do to help a situation. The sooner CARE can move to locally produced products the better.

The Title II program has been responsible for changing consumption habits and tastes through the development of Thriposha. In essence it has, in a very few years, introduced a totally new product in the consumption basket. The fact that this product will ultimately be made of all local foods is a step in the right direction.

The team asked recipients and program personnel if people seemed to substitute the biscuit or Thriposha for rice in their diet, and if the program might harm rice production. The common response was that this was not a problem. The two products were consumed in a supplemental matter. Rice remains a staple in the diet and is eaten several times a day. Because of droughts and perhaps other imports (like Title I), rice production has been insufficient to meet its demand. People have begun consuming other grains including local products such as sorghum and millet. Even with these, food availabilities are insufficient.

While Title II imports do not appear to be a disincentive on local production, Title I wheat imports, as well as those from other donor countries, do serve as a disincentive.

When such imports were low because of world wide shortages, the production of local grains dramatically increased. With more readily available imports, these production gains have been reduced. Subsidies have made wheat cheaper than rice and other grains, and thus have encouraged people to shift their consumption habits. Such moves make Sri Lanka overly dependent on volatile imports and inhibit decisions required to make the country more self-sufficient in food. Sri Lanka has a climate and soils which will support eventual self-sufficiency if it is willing to take the necessary steps to become so. Such steps should not impose undue hardships because of the continued food subsidy program and because of programs like CARE.

Cost Effectiveness

Ideally, the effectiveness of Title II would be defined in terms of the extent to which the Thriposha and biscuit improve the nutritional status of the recipients, and reduce the incidence of malnutrition among the target group. Such an assessment has not been statistically verified. However, the data obtained thus far indicate that Thriposha has a very positive nutritional impact on recipients, while the biscuit has only a minimum impact. It is recommended that local foods be added to increase the nutritional content of the School Feeding project.

Not only does Thriposha make a more important nutritional contribution than the biscuit, it also costs a good deal more. The School Feeding project costs $6.74 per recipient annually, based on total project cost, compared to $12.74

per recipient per year for MCH. Up to the present time, however, no effectiveness studies have been undertaken to judge conclusively whether the MCH program is more or less cost effective than the School Feeding program in Sri Lanka.

In terms of costs per output the MCH project is cheaper than School Feeding. Thriposha costs 23 cents per pound compared to 53 cents per pound for the biscuit (.66 cents per biscuit).

Title II food costs constitute roughly half the total costs of both the MCH and the School Feeding projects. Title II food costs per recipient for the School Feeding project is $3.71 compared to $7.35 for MCH. The corresponding costs per unit per annum output are 25 cents per pound of biscuits and 8 cents per pound of Thriposha.

While it is impossible to determine the relative cost effectiveness of the projects in this program, there does appear to be scope for reducing economic, if not financial, unit costs.

CARE analyzed the cost of Thriposha as a totally local product for either the commercial project on MCH project, and as a primarily imported product. Table V-17 indicates that the cost of the local product is 7-10 cents per pound less than the imported product because the cost of local raw materials is much less than cost of import. Even though AID, not CARE, pays for the imported product, the cost is still internal to the total Title II program and is thus an economic cost, if not a financial one. The cost of the

Table V-17. Production Costs of Thriposha
(data in cents per pound)

Item	Local commercial	Local MCH	Imported MCH
Raw materials			
Corn	0.044	0.044	--
Soy	0.063	0.063	--
Vitamins	0.005	0.005	--
Minerals	0.004	0.004	--
ICSM			0.220
	$0.116	$0.116	$0.220
Cleaning, processing and packing	$0.010	$0.010	$0.002
Packaging	$0.047	$0.008	$0.008
Overhead	$0.001	$0.001	$0.001
Total costs	$0.174	$0.135	$0.231

commercial product is higher than the MCH product because of the added marketing costs involved in the former product.

Other benefits are accrued from the totally local product. The use of local products serves as an added demand for these local raw materials and an incentive to local production. The cleaning, processing, and packaging costs, now located in Sri Lanka rather than the United States, serve as employment opportunities for Sri Lankans.

The similar substitution of local foods in the School Feeding project should also lower its unit costs considerably.

CHAPTER VI. INTEGRATION OF TITLE II WITH OTHER PROGRAMS

The Title II program is not the only program in Sri Lanka which directly or indirectly focuses on nutrition, health, education or development. It is important in assessing Title II's role to examine the extent to which it is integrated or interrelated with these other programs. These programs may be operating by one or more of the same participating agencies or by other agencies.

In examining this issue the team spoke with persons involved in the following organizations.

CARE USAID Ministry of Health Ministry of Education	Participating Agencies
World Bank WFP UNICEF WHO	Multilateral Donors
High Commission of Canada High Commission of Great Britain High Commission of Australia	Foreign Donors

Ministry of Planning
Food Department

Sarvodaya

Related GSL Agencies

Local Sri Lankan Organization

Participating Agencies

The Title II program serves as the core for CARE programming in Sri Lanka. Other CARE projects like the Applied Nutrition Supplement Project (ANSP), commercialization of Thriposha and soybeans project are all spinoffs in some way from Title II. For example, the nutrition and health education services of MCH needed strengthing so the ANSP project was established. The success in developing Thriposha and the desire for a totally local product with even wider distribution than is allowed within the MOH delivery system led to the Thriposha commercialization project. Because CARE is particularly interested in stimulating local agricultural production, which is needed if the health status of people is to be improved and sustained in the long run, it has designed a soybean project as well.

Similarly, the Title II program is only a part of a total Family Health Program under the Ministry of Health. Family planning and immunization services are provided by the same personnel who distribute Thriposha. The team learned from the health personnel that many people agree to be immunized to receive Thriposha. Women receiving Title II assistance are not forced to use the family planning service, but they are informed of available methods, including sterilization. After three children they are urged to utilize one of these services. The family planning services do not, however, appear to inhibit persons from trying to obtain Thriposha.

Other Agencies

Some organizations also provide assistance to the Title II program on a periodic basis. UNICEF has furnished milk and butter to Title II from time to time; trucks to the Ministry of Health to transport Thriposha; and scales and weighing cards for measurements and survey. The Australian Government in 1977-78 is donating 390 tons of non fat dry milk to the Director of Social Services. Some of this milk will be turned over to CARE for use in the biscuits.

As a principal recommendation, the evaluation team suggested more local and community participation in Title II. To this end, the team met with the Director of Sarvodaya, a large Sri Lankan community development program. Sarvodaya now operate in 1,200 of 22,000 villages in primarily depressed areas of the country. The meeting proved to be most worthwhile as a first step toward integrating the two programs. The Director indicated that his organization concentrates much of its efforts on training community workers. However, when they return to their villages, they often do not have projects in which to involve themselves. Meanwhile, Sarvodaya has not been able to assist in establishing the number of projects which are needed. To improve the effectiveness of the program the Director suggested that some community workers might aid CARE in organizing communities to provide foods or other services in support of the School Feeding project. The idea is particularly attractive because neither Sarvodaya nor CARE would have to sacrifice any of their own project components yet each has much to gain. It is hoped that the CARE director will pursue further this suggestion with the Sarvodaya director.

Many foreign donors including AID are jointly financing a large irrigation scheme, the objective of which is to increase agricultural production. To date the Title II program is not involved in the resettlement schemes but, based on the team's visit to the area, it was suggested that Title II might be introduced.

The WFP operates Food for Work projects, some in the Mahaweli scheme area. USAID prefers not to have WFP and CARE working in the same areas even though the projects are different. WFP has no plans for developing MCH or School Feeding projects, nor does CARE intend to undertake Food for Work projects. CARE's entry into the Mahaweli scheme would not necessarily conflict with WFP because the latter project is designed to help agricultural settlers only temporarily to establish themselves.

PERSONS INTERVIEWED

AID/State, Washington, D.C.

Mr. David Nelson	Food for Peace Office
Ms. Bernadette Bundy	Office of Bangladesh, India and Sir Lanka Affairs

U.S. Embassy

Ambassador	Dr. W. Howard Wriggins
DCM	Mr. Herbert Levin
Acting Econ./Commercial Officer	Mr. Jake M. Dyels, Jr.

USAID

Mission Director	Mr. Thomas M. Arndt
Program Officer	Mr. Clark H. Billings
Agricultural Officer	Mr. Charles H. Antholt

CARE - Sir Lanka

Acting Director and Project Director, Thriposha Project	Mr. Justin Jackson
Assistant Director - Soyabean Project	Mr. John McLeod
CARE Logistics & Support	Mr. Steve Goodyear
School Feeding Project	Mr. Frances Kulatunga
Nutritionist	Ms. Preethie de Silva

CARE - New York

Deputy Executive Director	Mr. Fred Devine
Nutrition Advisor	Dr. Merlyn Vemury
Program Director	Mr. William Langdon
Former Director, Sri Lanka	Mr. William Schellstede

Ministry of Health

Director of Health Services	Dr. L.P.D. Gunawardene
Environmental Statistics	Dr. Rajendra
Assistant Director, MCH	Dr. S.Y.B. Herath
Epidemiologist	Dr. La Monte
Anti-Malaria Campaign Medical Officer	Dr. Rubera
Nutritionist, Medical Research Institute & Project Supervisor, MOH/CARE Thiposha Program	Dr. B.V. de Mel
Nutrition Department, Medical Research Institute	Dr. Mahendra

Ministry of Education

Deputy Minister	Mr. Lionel Jayatilleke
Secretary	Mr. D.M.P.B. Dasanayake
Additional Secretary	Mr. E.M.D. Wickremasinghe
Nutrition Feeding Unit	Mr. N. Samarasundera
	Mr. Raja Subramaniam
	Mr. A.R. de Silva

Other Organizations

World Food Program

Senior Advisor	Dr. Edward von Schuh
Proje : Officer	Mr. Peter F. Witt

British High Commission	
Second Secretary	Mr. Barry E. Thorne
Australian High Commission	
Third Secretary	Ms. Jennifer Rawson
Canadian High Commission	
First Secretary	Mr. R. Bruce Wilson
Ministry of Finance and Planning External Resources Department	Mrs. Shakuntala Duruppu
World Health Organization	
Director	Dr. Sestak
UNICEF	
Director	Mr. Paul Ignatieff
World Bank	
Economist	Ms. P.J. Alailima
Sarvodaya Movement	
President	Mr. Ariyaratne
Others	
Director, INSOY Project	Dr. Carl N. Hittle
Physician in Kadurvath	Dr. V. Jayaweera

Field Visits

School Feeding Project

Kandy Region

Kandy Rural District Education Office	Mr. R.M.B. Karunaratne, R.D.E.
	Mr. Harry Silva, Chief E.O.
	Mr. Jayawickreme, C.E.O.
	Mrs. Wickramasuriya, Specialist Teacher Attached to Education Office
	Mr. C.B. Pethiyagoda
Swaranamali (Pilot) Vidyalaya School	Principal
Mahamaya Girls High School	Mrs. Perera, Principal (a prestigious school not in the program)
Mahamaya Lower V. School	(New section to accomodate Grade 1 only)
Pahala Mahayaya V. School	Mrs. Wijetunga, Principal (Not in the program but according to the R.D.E should be in.)
Heenagama K.V. School	Mr. D. Hemachandra Acting Principal
Rajawella (Estate) V. School	Mr. A. Murugesu, Principal

Bandarawela Region

Bandarawela R.D.E.'s Office	Mr. J. Munasinghe, R.D.E.
	Mr. K.V.W. de Silva, Chief E.O
	Mr. D. Subawickrame, E.O.
	Mr. W.M.W. Wanasinghe, A.O.

Kebillawela South V. School	Mr. K. Wickramasinghe, Principal
Dowa V. School	Mr. L. Gunadasa Perera, Principal (on transfer order)
	Mr. J. Wijeratne, New Principal
Southam (Estate) V. School	Mr. B.M.M.B. Cader, Principal
Pahalagama Bandarangayake K.V. School	Closed
Badulla Al Idam M.V. School	(Closed on account of G.C.E. A.L. Examination)

Monaragala District

Monaragala Education Office: This office does not handle CARE program work, except that the CEOs are expected to inspect operational part at school level.	Mr. Rupasinghe, Chief E.O., acting as Director
Muppama Valley Estate School	Mr. Kuganesam, Principal
Kumbukkan Estate V. School	(to be taken over)
Medagama Piyananda K.V. School	Mr. P.D. Fernando, Principal
Buttala Dutugemunu V. School	Mr. S. Ranasinghe, Principal
Katugehugalge K.V. School	Mr. W.M. Martin, Principal

Ratnapura Region

Ratnapura R.D.E.'s Office	Mr. C. Hettiarachchi, R.D.E.
	Mr. Premaratne, A.O.
Hidellana (Estate) V. School (IN Palm Gardens Estate)	Principal
Muwagankanda K. School	Mr. M. Gunawardena
St. Luke's M.V. School	(Not in Program)

Maternal Child Health Project

Poly Clinic at Watugedera T.C. under Medical Officer of Health Ambalangoda:

The Clinic was over by the time we arrived. The PHN had distributed Thriposha to 62 children, of whom immunization has been given and Growth Cards were maintained. The team had discussions with the PHN.

Poly Clinic at Goluwamulla V.C. under Medical Officer of Health Elpitiya:

The Clinic was in progress when we went. Medical Officer was sick and did not attend clinic. Two PHNs were carrying out the Clinic. No weighing scale and hence the selection of children had been done previously by the medical officer. The children were also given immunization.

Betota SPC (Estate) - Elpitiya:

Thriposha is given on any day throughout the week, so that he does not have a special clinic. Discussed the programme with the EMA. Growth cards were maintained for all children and has given the Megadose Vitamin 'A.'

Nakiadeniya SPC (Estate) Nakiadeniya:

A large estate with 13,445 acres, planted with Oil Palms. 175

malnourished children and mothers were given Thriposha. Growth cards were maintained. We met the EMA.

Visits to Anuradhapura and Kuranegala Districts

Galewala Antenatal Clinic	
Andiyagala Dispensary	Mr. C. Premaratne, Dispenser
Madalugama, S.P.D. Office Mahaweli Development Board	Mr. K. Sanchianathan, Chief Clerk
S.H.S. Office, Anuradhapura	Dr. P.H.D.C. Dassanaike
Anuradhapura Hospital	Dr. Reggie Perera
	Dr. (Miss) Arunachalam
	Miss Weeratunga, Matron
Kurunegala Hospital	Dr. Rajapakse, M.S.
	Dr. S.A. Potuhera
	Dr. (Miss) A. Dep
	Mrs. J.P. Fernando, Matron
S.H.S. Office, Kurunegala	Dr. J.A. Buddhades, S.H.W.
	Dr. Weerakkody, MOMCH

Monaragela District

Haymulate D.M.O.	Mrs. Murugesu

Ratnapura Region

Rural Hospital	Mr. Mallikarachchi
Peenkander Estate	Mr. R.A. Samarakoone Estate Medical Officer

Biscuit Factories

Secretary, Malibans Biscuit Manufacturers, Ltd.	Mr. K.G.N. Seneviratne

Managing Director,
Ceylon Biscuits, Ltd. Mr. Ramaya Wickremasinghe