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HEALTH, POPULATION AND NUTRITION SECTOR REVIEW  
FOR SRI LANKA - 1980

PREPARED FOR THE USAID MISSION  
TO SRI LANKA

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1. EXECUTIVE SUMMARY

A three person team from AID/W and HEW spent about three weeks in Sri Lanka reviewing (1) host country goals and activities in health, population and nutrition (HPN) and (2) opportunities for USAID involvement in this sector.

Since 1977 the Government of Sri Lanka (GSL) has shifted its national priorities to increase its investments in economic development and employment generation programs and decrease its investments in general subsidies for social welfare programs (e.g., free education, free health care and subsidized or free food distribution). Budget data indicate that such welfare-oriented expenditures declined from 29% to 17% of the national budget between 1978 and 1980. Government policy statements contain strong statements about the need to continue and expand basic health services, particularly for low-income groups, until such time as rising income levels permit families to purchase such services. The tradition of providing free medical care is thus being continued but the problems of upgrading the quantity and quality of health services are complicated by the neglect of the system during the past decade. The major factors contributing to this deterioration of the health system include: (1) reduced public health appropriations, (2) reduced purchasing power due to inflation, and (3) serious staff shortages (partly created by migration of health professionals to other countries). Additionally, after the reduction of major communicable diseases during the 1950's and 1960's, the health delivery system became heavily curative in its orientation and most facilities have been concentrated in the more urbanized areas. While recent government policy statements indicate that higher priority will be given to expanding outreach services and upgrading preventive

activities, the current budget allocations within the Ministry of Health are still largely skewed toward curative functions. Facilities at the top of the system are heavily utilized while peripheral units are often bypassed by those seeking care. While some ayurvedic or traditional medical practitioners have been brought under the Ministry of Health network, most remain in private practice. The present Government is seeking ways to better utilize these service providers and a Project Ministry for Ayurvedic Medicine has just been created.

In spite of the shortcomings in health and social welfare services, Sri Lanka's national health status indicators have compared favorably with other AID-assisted countries in Asia. (A Physical Quality of Life Index of 82 was matched only by Korea). However, the use of national statistical averages results in the masking of serious health problems in particular localities and groups --- notably the estates, remote communities and the Mahaweli resettlement areas. Moreover, the current move away from general food subsidies and the rapidly rising food prices may exacerbate a nutritional situation which has apparently been worse than previously believed. (The GSL-USPH/CDC nutrition survey conducted in 1975-76 indicated that 42% of the rural preschool age children suffered from 2nd and 3rd degree malnutrition.) The most significant out of school supplemental feeding effort is being conducted by CARE and many of our Team's contacts questioned whether this was effectively impacting on the nutrition problem.

Recent GSL statements indicate a growing concern about the population growth rate and steps are being taken to meet the growing demand for family planning services. For example, in 1979 the Government began paying service fees for sterilization and a small client payment (100 Rupees)\* to cover transportation and other costs for government or public corporation employees who undergo sterilization. Disincentives for large families are also being built into the tax and family allowance systems. The demand for voluntary sterilization far exceeds the availability of services. These and other issues are discussed in a UNFPA Report on Sri Lanka which is now being completed in New York.

The Government and international donors are giving very high priority to the provision of safe water as a means of reducing the high incidence of water borne and water washed diseases. A detailed GSL action plan for the UN Water and Sanitation Decade is being developed with the assistance of WHO staff and, particularly, an AID contract group. USAID is preparing a Project Paper for the Market Town Water Supply Project (Jaffna) as its first venture into the Water and Sanitation field. USAID is also finalizing a project to help assist the GSL in improving the facilities at the National Institute of Health Sciences at Kalutara. This Institute will play a critical role in the expansion of preventive health services because it is responsible for the training and retraining of health field workers and for conducting operational research to improve health services. The Mission is also testing prototype rural water systems through a contract with Georgia Tech. Finally, the USAID-supported Malaria Control Program appears to be doing very well.

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\* to be increased to 500 Rupees (\$20) on October 1, 1980

Our team concluded that there are many areas of health, population, and nutrition where USAID assistance is needed and would be welcomed by the GSL. However, in view of the serious U.S. direct-hire staff constraints being imposed on the Mission, at least through FY 1983, we could not recommend pursuance of a strategy which ventured significantly into new territories -- either functionally or organizationally. While the GSL has outstanding administrative leadership in many ministries, the shortages of mid-level personnel and the continuing proliferation of ministries mean that any USAID project manager must spend a great deal of effort developing and maintaining effective working relationships. The demands on staff time are increasing further by our orientation toward increasing services for the rural areas. Therefore, since the Mission will have only one US direct-hire HPN professional, we recommend that USAID build on its existing water-sanitation initiative. However, we do feel that primary health services (including family planning) must be integrated with water and sanitation if we are to maximize the impact on health status.

If the GSL's current enthusiasm over mounting a major Water and Sanitation effort during the 1980's continues, there should be opportunities for USAID to make substantive investments in the health and water sector. If AID does provide substantial loan funds, it will be in a favorable position to influence an integrated approach to the provision of health and water services on the part of the GSL and other donors.

There are some major constraints on implementation which must be addressed very early in the negotiation and design of a Health and Water Sector Loan. These include the need for (a) an effective inter-agency coordinating mechanism

to ensure that water/sanitation projects include the basic components needed to maximize the impact of water on health and (2) measures to strengthen the project implementation capacity of the concerned national agencies and local communities. The Market Town Water Supply Project (Jaffna) will provide some useful models of organization and cooperation, but the full results may not be available in time to support the planning of the larger project.

The Team feels that the Mission should include the Mahaweli Resettlement Area as a priority area under the Health and Water Sector Loan, since this is a very underserved area and the influx of new families could lead to an increased incidence of communicable diseases --- and thereby discourage potential settlers.

The Mission should also give high priority to continued support for the anti-malaria campaign. A comprehensive malaria surveillance system is only now being installed, so accurate estimates of prevalence will probably not be available until 1981. The available evidence suggests that there has been a significant decline in active cases since the initiation of malathion spraying in 1977.

There is Mission interest in initiating population activities and a Population Advisor's position was planned for FY 1982. However, it does not appear to be feasible to do very much in this area unless AID staffing constraints are eased and the direct-hire position can be established. Limited past experience with centrally funded intermediaries in Sri Lanka has not been very satisfactory. After filling its HPN (Human Resources Officer) position, the Mission may identify population activities which could be carried out through bilateral or

centrally funded channels. Whatever is done in the population area should be consistent with the general recommendations of the recent UNFPA assessment on Sri Lanka.

The Team recommends that a limited health initiative be considered for selected estate areas, because this is where many of the most serious health needs are found. However, we also recognize that direct USAID involvement in a project of this nature may not be feasible because of staffing and other constraints.

Finally, we recommend that USAID support the establishment of a national nutrition surveillance system since regular monitoring of conditions over the next few years will be particularly crucial in view of significant policy and funding changes in this area.

## 2. BACKGROUND AND PURPOSE OF THE REVIEW

### 2.1 Origin of the Review

Except for supporting the Anti-Malaria Campaign and supplemental feeding programs, USAID/Sri Lanka has not been heavily involved in the Health, Population and Nutrition (HPN) sector. In response to requests from the Government of Sri Lanka and other donors (especially WHO and UNICEF), the Mission initiated two health-related projects for FY 80: the Market Town Water Supply Project (Jaffna) (\$5 million) and the National Institute of Health Sciences Project (Kalutara) (\$500,000). To help initiate a new AID sector loan strategy, the Mission included a Potable Water Sector Loan of \$10 million in its proposed assistance program of \$46.1 million for FY 1981. However, during the AID/W review of the Mission's FY 1982 CDSS (Country Development Strategy Statement), questions were raised by some participants about the soundness of undertaking water projects for health reasons. Because of a lack of agreement over the linkages between water availability and health status improvements, AID/W suggested that a team be sent to assist the Mission in reviewing its options for assistance in the HPN sector. ASIA/TR proposed a four-person team for three weeks, while the Mission suggested that two persons for two weeks would be adequate. It was finally agreed that a three-person team would be sent for about three weeks.

### 2.2 Team Composition and Approach

The Review Team consisted of Ms. Karen Lashman, Acting Director, Division of Program and Policy Analysis, Office of International Health, HEW, Dr. Donald W. MacCorquodale, Medical Officer, ASIA/TR, and James R. Brady, Chief, ASIA/TR/SIRD. Ms. Lashman and Dr. Brady were in Sri Lanka April 8-26,

while Dr. MacCorquodale was there April 13-26. With the exception of a one-week visit by Dr. Brady in November 1978, none of the Team had previously been in Sri Lanka. The total working period was 16 days (half-time on week-ends) of which three days were spent in the rural areas. While considerable data on particular health issues are available in Sri Lanka, the quality of the sources varies widely and few macro or longitudinal studies have been made in the major HPN problem areas. Consequently, the study of problems and the establishment of policies is sometimes based as much on intuition and political considerations as on systematic analysis. Our Team's report reflects similar shortcomings. While we have cited published sources where appropriate, much of our evidence is anecdotal. While the collective impressions of operational personnel in a program are valuable, the limitations of such information must also be borne in mind.

The basic mission of our Team was to quickly assess: (1) national HPN policies and priorities, (2) current activities and problems, (3) apparent gaps in meeting HPN needs, and (4) possibilities for USAID assistance. We had assumed that we could pay less attention to reviewing population issues since a UNFPA Needs Assessment Team had just visited Sri Lanka. Similarly, we had not intended to spend much time on food policy or consumption issues because Jim Levinson has been working in this area under an AID contract. But, we found it essential to discuss certain nutrition issues because of the widespread local concern over the current and expected negative impact on nutrition of recent GSL efforts to reduce government food subsidies. We also identified some needs in the population area where A.I.D. could play a useful role in consort with other donors.

### 2.3 Report Outline

Section 3 of our report provides an overview of macro-economic policies and developments which will undoubtedly influence national health status during the next several years. We were not able to delve into many of the complex political factors which condition policy formulation and program implementation, although "politics" was occasionally mentioned by career administrators and private citizens as the reason for lack of progress in certain areas. Section 4 uses available population and health data to discuss the most critical needs and identify the population groups which appear to be the most vulnerable to disease. Section 5 briefly assesses the program areas and gaps in service which we believe to be most relevant to AID priorities.

While there are several areas where AID health (HPN) assistance would be welcomed by the GSL, the very serious staffing and other restraints on USAID and the GSL must be considered in proposing future projects. Some of these constraints are outlined in Section 6, while Sections 7 and 8 discuss some assistance options and action recommendations for the Mission's consideration. Our short review will probably not provide the necessary information required to identify specific projects. However, we do hope to establish a basic framework which the USAID and GSL staffs could use in discussing new or expanded joint projects in the HPN area.

The Team is aware that there is also an option not to make additional investments in the HPN sector, but we did not consider this to be part of our mandate. Some observers feel that Sri Lanka's past progress in the HPN sector and its high ranking in comparisons of national statistics could be used as the

basis for making such a recommendation. However, our review suggests that there are still serious health (HPN) problems which merit priority attention, particularly at this apparently critical juncture in Sri Lanka's national development.

### 3. OVERVIEW OF CURRENT SITUATION

#### 3.1 Growth Versus Equity: Sri Lanka at a Turning Point

Since its election in 1977, the Jayawardene Government has been trying to alter national resource allocation patterns to give higher priority to economic development and employment generation programs. After almost thirty years of high public expenditures for "welfare" services (e.g., free education, free medical care, and free or subsidized food distribution), the Government of Sri Lanka (GSL) is encountering difficulties in reducing such services without producing serious political and social problems. On the positive side, it can be noted that, in spite of low per capita income in the mid-1970's, Sri Lanka's Physical Quality of Life Index (PQLI) of 82 was matched only by Korea in a comparison of AID-assisted Asian countries (See Table 3.1). This PQLI reflected an Infant Mortality Rate (IMR) of 51, Life Expectancy of 68 years, and Adult Literacy of 78%. (The IMR had reportedly declined to about 42 by 1978.)

However, these national statistics conceal serious health needs in certain groups and localities. After reducing major communicable diseases in the 1950's and early 1960's, high priority was given to the development of hospitals and other curative institutions, most of which are located in urbanized areas. The health delivery network was also significantly weakened in the 1970's by the emigration of health professionals seeking better incomes abroad.<sup>1/</sup>

<sup>1/</sup> For example, medical school admissions averaged 246 per year between 1970 and 1974 while at least 172 doctors left for foreign jobs each year during 1971-73. The causes of the outflow are discussed in Lalitha Gunawardena, "Medical Emigration, Inappropriate Education and a Distorted Health Care System," Marga, Vol. 4, No. 1, 1977 (Marga Institute, Colombo).

TABLE 31 - Socio-Economic Indicators for Selected Asian Countries

Country	Annual Per Capita GNP (US\$)	PQLI	Infant Mortality Rate	Life Expectancy At Birth (Years)	Adult Literacy (Rate %)
Malaysia	\$930	73	44	66	60%
Republic of Korea	810	82	38	65	91
Philippines	450	71	80	58	87
Thailand	410	71	68	61	82
Indonesia	300	48	91	50	62
Sri Lanka	200	82	51	68	78
Pakistan	190	36	136	51	21
India	150	41	122	50	36
Burma	140	50	140	51	67
Nepal	110	27	152	44	19
Bangladesh	90	32	153	46	22

Source: All data except literacy are from the 1979 World Population Data Sheet of the Population Reference Bureau, Incorporated (Washington, D.C., April 1979). Literacy data, except Sri Lanka's, are from World Development Report (The World Bank, Washington, D.C., August, 1979), pp.126-127. Sri Lanka literacy rate is from UNESCO Statistical Yearbook, 1977 Table 1.3.

- Notes: 1. The PQLI, or Physical Quality of Life Index, combines indicators of infant mortality, life expectancy, and literacy into an index running from 0 (lowest) to 100 (highest).
2. The Infant Mortality Rate is the annual number of deaths to infants under one year of age per 1,000 live births.
3. The Life Expectancy Rate is the average number of years a newborn child could be expected to live if current mortality conditions were to continue throughout his or her lifetime.
4. Data years vary but usually fall between 1975 and 1977, except for literacy estimates which usually fall between 1970 and 1971.

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(Reproduced from James R. Brady, Educational Policies and Economic Development in Sri Lanka, University of Virginia Social Foundations of Education Occasional Paper - Series No. 1, May 1980)

Consequently, there are now serious shortages of health professionals at all levels of the system, but particularly in the estate and remote areas. Earlier government policies to promote social equity by placing ceilings on income thus contributed to the professional braindrain and resultant decline in both curative and preventive health services. Moreover, significantly reduced appropriations for health facilities and equipment during 1972-76 accelerated the deterioration of public health services. The present government is therefore faced with the need to rehabilitate and redirect the health system at the same time that it is trying to find resources to initiate new programs in other sectors. Available data suggest that the percentage of national expenditures going to health, education, other social services, and food subsidies has already started to decline --- from 28.4% in 1977 to 17.4% in 1980. (See Table 3.2). Of particular interest is the decline in food subsidy expenditures from 11.6% of total budget in 1977 to 5.6% in 1980. This decline is reflected in the recent removal of government subsidies on wheat imports and the subsequent sharp increase in bread prices. During our team's field visits, we were frequently told that these changes were forcing low-income families to eliminate or drastically reduce their consumption of this basic food staple. Similarly, the GSL's efforts to reduce public expenditures by substituting food stamps for food rations in 1979 have reportedly had a negative impact on the nutritional status of low-income families, since food prices have been climbing rapidly. However, the most vulnerable group may be the low-income, non-citizen Tamil populations in the estate areas since they are not eligible to receive government food stamps. (The nutrition situation is discussed in detail in Section 5.3 and throughout Section 4).

TABLE 3.2 - Percentage of National Budget Allocated to Health, Education, Other Social Services and Food Subsidies. 1975-1980.

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	(Est.) <u>1979</u>	(Est.) <u>1980</u>
Health	4.5%	4.7%	5.1%	3.6%	4.4%	3.8%
Education	9.2	9.5	10.0	6.6	6.5	6.9
Other Social Services	1.2	2.3	1.7	0.7	1.2	1.1
	—	—	—	—	—	—
Subtotal	14.9	16.5	16.8	10.9	12.1	11.8
Food Subsidies	14.0	11.6	11.6	12.5	12.3	5.6
	—	—	—	—	—	—
Total Percentage	28.9%	28.1%	28.4%	23.4%	24.4%	17.4%
Total Budget (Millions of Rupees)	7770	9037	9405	16,831	19,614	23,387

Source: These estimates are based on working data provided by USAID Sri Lanka and which were derived from Government of Sri Lanka budget estimates.

Until the new economic development programs begin to generate adequate levels of family income, the need to provide free or subsidized welfare services to many Sri Lankans may continue. The government's Public Investment Program for 1979-83 notes that past gains in welfare must be maintained, although public funds are being shifted from "generalized subsidy programs" to investments for accelerated economic output:

With this end in view, support measures of one kind or another will have to be continued on a limited scale, until incomes accruing to the poor are adequate to meet their basic needs. Direct intervention programs designed to alleviate malnutrition among target groups, provision of drinking water to the rural poor, improvement of housing conditions of the urban shanty dwellers and preventive health care programs are among the priority areas for Government action. . . . (page 25).

During the next few years, the GSL will therefore be conducting an interesting experiment in trying to achieve a proper balance between economic growth and equity concerns. As one of the oldest continuing political democracies in Asia, Sri Lanka also provides a fascinating study of the interaction between politics and economic development decisions.

Our team found a high level of sophistication, frankness, and openness among the administrative leadership of the ministries and field units which we visited. Likewise, our limited contacts at the community level suggest that the people in general are alert and articulate concerning their needs, resources, and limitations. The potential for active community participation in development is probably high, although low income levels may preclude a significant financial contribution by local communities to new programs. We were also advised that foreign donor participation was now welcome in any sector, as long as it is consistent with national development priorities.

### 3.2 Data Limitations

While the availability of HPN data in Sri Lanka is relatively good, we did encounter some serious information gaps in trying to assess specific problems. Macro level data on the current nutrition situation are not available, so many people are using data from the USPHS/CDC-GSL survey conducted in 1975-76. While the nutrition unit of the Institute of Medical Research (MOH) is conducting baseline studies of nutrition in certain areas, it is not clear that this data will be used for analyzing current national nutrition problems or formulating program proposals. Similarly, we were advised that little research was being conducted on medium or long term population trends and their implications for national development and future demands for public services. (The UN/PA Needs Assessment report--being finalized in New York--will probably underscore the need for such research.)

Local health officers are collecting data on health problems and services provided, but it is not evident that this is being fully collated and utilized at the national level. For example, we were told at the Ministry of Colombo Group Hospitals and Family Health that they did not have current national data on contraceptive use patterns, although they thought that such data might be available in their parent agency: the Ministry of Health. Although the Ministry of Colombo Group Hospitals and Family Health was recently assigned the responsibility for the national family planning services program, it has apparently not been transferred the information and other resources necessary to discharge its new responsibilities.

We were told that the vital statistics reporting system is rather good, although information on specific items--such as cause of death--may not be reliable. Morbidity data appear to come largely from hospital records, so

disease levels may be significantly underestimated.<sup>1/</sup>

There are planning and evaluation units in the various ministries, but these have tended to receive low priority in the allocation of staffs and funds. Similarly, the universities have had few funds for research in the HPN area, although the medical schools are doing some studies in their local student practice areas for community medicine. The International Labor Office is funding some village level surveys on basic human needs at the University of Sri Lanka-Perideniya which should be completed in late 1980.

The Marga Institute in Colombo has considerable research talent and experience, but has focused more on studies of longer term social and political trends and less on operationally-oriented studies. The revamped National Institute of Health Sciences at Kalutara is charged with doing operational research on health delivery systems, but is hardpressed to recruit qualified staff for its expanded training and research programs.

In spite of these shortcomings in data and information systems, GSL study groups and task forces have done a commendable job of analyzing needs--particularly in areas related to primary health care. Stimulated by the 1978 Alma Ata Conference on Primary Health, there have been several seminars conducted and reports prepared on health problems, resource needs, and action alternatives. The two MOH reports on Country Health Programming and Development of Primary Health Care provided us with a great deal of useful background information. However, as noted in the discussion of HPN goals, there are inconsistencies within and between documents. Considerable data collection and analysis are also being undertaken as part of the GSL's effort to finalize a national plan for the Water Supply and Sanitation

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<sup>1/</sup> See the TAMS 1979 Environmental Study on Mahaweli (Chapter on Public Health) for more details on the morbidity data issues. Draft Report, December 1979).

Decade (1981-1990). USAID and WHO consultants are currently assisting this exercise and a detailed plan should be completed this autumn.

We suspect that the low priority accorded to research and data collection is primarily a reflection of the general crunch on resources. There is considerable interest in strengthening research and evaluation capabilities in several agencies. The Nutrition Policy Planning unit in the Ministry of Plan Implementation (MOPI) has requested Jim Levinson (under contract with the Asia Bureau) to work with them this summer to improve their nutrition policy research activities. Given the availability of the right resources, similar upgrading activities might be initiated with the Population Policy unit of the MOPI. The Ministry of Local Government staff told us that there was an urgent need for better collection and analysis of data on the various water and sanitation efforts planned or underway, in order to extract successful experiences and use these for establishing better national standards and guidelines. Our team endorses the suggestion by visiting AID consultant Jim Thompson that more research be done on alternative methods of designing safe wells and latrines since the current reliance on a few standard approaches (which are relatively expensive) seems to be an impediment to the expansion of facilities in rural areas. Some research of this nature will be included under the new USAID contract with Georgia Tech.

Better analysis of HPN data on a district basis will be essential if the GSL implements recent decisions to decentralize more developmental decisions down to the new District Development Councils and other local entities. This type of analysis is now complicated by the fact that health district boundaries do not always coincide with district administrative boundaries.

While there are many areas where external assistance could be provided to improve the collection, analysis, and utilization of HPN information,

priority in any A.I.D. efforts should probably be given to the following: (1) establishment of a national nutrition surveillance system (under the Ministry of Plan Implementation), (2) development of baseline and progress monitoring data on water, sanitation, and health needs and activities, particularly in USAID-supported areas, (3) analysis of population trends and family planning activities to identify implications for policy and program planning in the HPN and other developmental sectors. We assume that the Mission will continue to support special needs such as the development of a fully functioning malaria surveillance system. Any USAID-supported research activities should pay particular attention to the utilization of results by the appropriate policy and operating units within the GSL. Table 3.2.1 summarizes some of the more commonly used socio-economic indicators on a national and district basis. Note the significant variations among districts.

Table 3.2.1 - Selected Quality of Life Indicators - Sri Lanka (By District)

District	Population <sup>1</sup> (000)	Crude Birth <sup>1</sup> Rate (per 1000 pop.)	Crude Death <sup>1</sup> Rate (per 1000 pop.)	Infant Mor- tality Rate <sup>2</sup> (Per 1000 live births)	Maternal <sup>2</sup> Mortality Rate (per 1000 births)	Average <sup>3</sup> Spending Unit Income (in Rupees per 2 months)	Female <sup>4</sup> Literacy Rate (in percent)	Housing Units <sup>5</sup> without Tap/ Piped Water (in percent)	Prevalence of <sup>6</sup> chronic undernutrition (in percent)	Number of <sup>7</sup> Hospital Beds (per 1000 pop.)
<u>District</u>										
Colombo	2826	21.0%	25.5	8.0	33	638	84.4 %	71.3 %	20.7%	4.4
Calutara	795	5.7	27.1	6.9	35	651	77.7	95.8	26.8	2.3
Kandy	1273	9.1	27.4	8.9	63	603	63.9	84.3	49.6	2.6
Nuwara Eliya*	347	2.5	29.3	7.9	53	614	63.3	89.4	38.9	2.9
Nuwara Eliya*	467	3.3	27.2	8.4	76	526	48.3	88.0		2.7
Galle	802	5.8	24.7	7.5	44	617	77.2	96.0	33.3	2.1
Negama	642	4.6	26.0	6.8	40	598	71.4	93.5	29.7	1.7
Kandamottu	390	2.7	26.9	6.7	39	568	63.9	91.7		2.3
Jaffna	786	5.6	28.3	6.2	21	589	79.2	92.9	28.4	3.6
Manar	30	0.4	33.5	7.0	35		68.0	72.2		3.8
Kavuniya	193	0.8	34.6	7.1	35	450	69.9	96.1	29.6	2.7
Batticaloa	291	2.1	35.9	9.0	51		46.7	95.9	36.5	3.9
Norawal	307	2.2	32.4	6.5	33		50.7	65.5		1.7
Trincomalee	216	1.5	39.6	5.2	22	543	57.6	91.8		2.2
Curugalla	1137	8.2	25.7	6.6	37	595	74.0	98.0		2.3
Battalana	426	3.1	33.1	7.2	30	606	79.1	92.6	30.4	2.3
Anuradhapura	444	3.2	37.5	6.7	35	500	66.2	95.9	24.4	3.4
Polonnaruwa	185	1.3	32.0	5.8	29		69.6	97.4	30.7	2.4
Negalla	660	4.7	26.7	8.2	61	426	51.5	73.1	49.4	2.4
Amberapala	321	1.6	49.2	6.2	28	445	52.8	92.4		2.3
Mananara	727	5.2	31.9	8.3	56	409	61.0	90.4	37.3	2.9
Negalle	708	5.1	21.1	6.1	42	542	70.3	87.8	39.6	2.3
Sri Lanka	13,942	19.9	27.9	7.4	42	535	70.9	79.9	34.7	2.9

Estates (1976 data) 33.1 14.9

\* 1976 data

Sources

1. Registrar General's Office, final 1977 figures.
2. Bulletin of Vital Statistics, 1977, Department of Census and Statistics, October 1979 (figures represent 1976 figures).
3. Preliminary data from First-round-October-December 1978 of Central Bank's Household Socioeconomic Survey 1978-79 (sample survey hence data not available for all districts).
4. Department of Census and Statistics, 1971.
5. Census of Housing, 1971.
6. Sri Lanka Nutrition Status Survey 1975/76, data only available by SHS/Areas. Note that Nuwara Eliya district falls with the Kandy SHS area.
7. Department of Health Services, Ministry of Health, as quoted in Statistical Tables for Population Needs Mission, UNFPA, February 1980.

(Compiled by Karen Lashman, OIH/HEW)

(Superintendent of Health Services)

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### 3.3 Current HPN Goals and Priorities

The GSL has committed itself to expand the availability of primary health care in accordance with agreements made at the 1978 World Health Assembly at Alma Ata, USSR. Starting with a late 1978 GSL-WHO country health programming exercise, there have been continuous discussions and refinements of national issues. National health needs and goals have been defined in such Ministry of Health (MOH) documents as Country Health Programming-Sri Lanka (December 1978); Development of Primary Health Care in Sri Lanka: Project Proposals 1979-83 (1979); and the annual budgets. In general, statements on policies and goals emphasize the need to expand and upgrade primary health care and preventive services in the rural areas where 78% of the people live. There is also a recognition that health conditions are worse in remote communities and estate areas than in the urban areas. However, it is also acknowledged there are serious health problems among poor urban groups, particularly those in the shanty towns.

In terms of the targets identified in the A.I.D. Asia Bureau's HPN Strategy Statement, the Sri Lankan situation is as follows:

(1) Infant Mortality Rates: The Bureau HPN Strategy Statement calls for an IMR of less than 50 deaths per 1000 live births by the Year 2000. The IMR for Sri Lanka may be about 42, but the range is from about 21 in Jaffna District to over 76 in Nuwara Eliya District (estimates for 1975-77). The MOH report on Development of Primary Health Care says that the GSL's target is to ". . . to reduce the I.M.R. in areas where it is high (twice or thrice the national averages of 46/100,000 (sic) by 5 per year." (page 3).

Another section of the same document notes that a target is to reduce "... mortality rates by 5% per year particularly infant and child mortality rates in areas where it is twice (82.5/1000 in estate areas) or thrice the national average (IMR 46/1000 live births)." (page 14).

(2) Birthrates: The Asia Bureau's HPN Strategy calls for a Crude Birthrate (CBR) of under 25 per 1000 population by the Year 2000. Our team could find no definitive official statement of a quantitative target for reducing the CBR. The Country Health Programming report (page 66) suggests that the objective should be to reduce the CBR from 27.96 (in 1976) to 20.0 by 1986. The same source says that this should reduce the Population Growth Rate (PGR) from 1.99% (in 1976) to 1.1% by 1983 (assuming that the Crude Death Rate (CDR) increases from 8 to 9 --- page 54).<sup>2/</sup> The total population of Sri Lanka was estimated to be 14.5 million in 1979.

Estimates showing that the CBR increased to 28.4 in 1978 were received with concern by some GSL and UNFPA representatives. In a March 1980 speech, the Secretary of Plan Implementation noted that the number of births was 402,000 in 1978, a significant increase over the 375,000-380,000 level which prevailed from about 1974 to 1977. Moreover, sterilizations had dropped from 42,000 in 1974 to 20,000 in 1978. Consequently in 1979, the Government took steps --- including the use of service incentives and client payments -- to increase the practice of family planning.<sup>3/</sup>

<sup>2/</sup> According to data for 1977 from the Registrar's General's Office in Population - Statistics of Sri Lanka (Population Information Centre, Ministry of Plan Implementation, 1979) the CBR was 27.9, the CDR was 7.4, and the rate of natural increase was 2.05. Later data have been issued but were not available to our Team when this draft was being completed.

<sup>3/</sup> Dr. Wickrema Weersooria, Address reported in Family Planning Above Party Politics (Proceedings of a Seminar on Population and Development Organized by the Ministry of Plan Implementation on March 13, 1980) Colombo 1980, pages 2-3.

The responsibility for formulating national population policies is assigned to the Ministry of Plan Implementation, which is directly under the President. In discussions with our Team, Secretary Weerasooria said that first priority should currently be given to the expansion of services to meet the existing demand, rather than "beyond family planning" measures. He noted that voluntary family planning agencies were doing a good job of reaching the younger people, so the government was pushing for increased sterilization services. The Secretary mentioned that the recent increases in birthrates were not so significant and that they reflected the fact that many people who had been postponing marriage because of poor economic conditions decided to marry because of a perceived upturn in the economy under the present Government. Dr. Weerasooria said that the GSL would increase its financial support for family planning, but would look to foreign donors for equipment and contraceptive supplies.

During our visit, President Jayawardene was touring several districts and his speeches usually mentioned the need to control population growth because of Sri Lanka's limited resources. The President also stressed that "education" rather than "laws" would be used to address the population problem. (See Section 5.1 for a more detailed discussion of population issues.)

### (3) Health Services Coverage

The Asia Bureau Strategy Statement suggests a goal of reaching about 90% of the population with basic health services (presumably by the Year 2000). While the majority of Sri Lankans reportedly live within three miles of some type of health outlet, the quantity, quality, and timeliness of services vary widely among communities.

About 33.6 million outpatient treatments were reported by MOH facilities for 1976 or over two treatments per capita. While bypassing of rural health units is reportedly common, the rural clinics we saw appeared to have ample numbers of clients. About 63% of all births reportedly take place in institutions, a rather high rate for Asia. However, for estate populations the situation is apparently reversed with about 65% of births occurring at home. The Development of Primary Health Care report identifies the poorest 30-40% of urban (slum) and rural people as being the most underserved populations. This report recommends that priority in the improvement of primary health care be given to:

- (1) Development areas of the dry zone, including Mah/well Development Area (2 million people)
- (2) Dry zone areas hit by the 1977 cyclone (1 million)
- (3) Estate plantation areas (1 million)
- (4) Slum and disadvantaged groups in smaller cities and towns (2 million)
- (5) Other rural under-served areas (4 million)

Our contacts and several CSL documents underscored the need to upgrade primary and preventive health services in underserved areas. Additional medical and paramedical personnel are to be recruited and trained to staff the rural health network, particularly preventive services (which are under the district Medical Officers for Health). An MOH-sponsored health volunteer network (which now covers about 1000 villages) will be expanded to provide linkages between the people and the public health system. Private voluntary organizations are also increasingly involved in village health improvements. Considerable attention

is also being given to plans to expand water and sanitation services since an estimated 70% of the morbidity cases are attributed to the fact that at least 80% of the population lack "safe" water and facilities for proper excreta disposal.

While Section 4 discusses the major health problems, we will note here that the following health interventions were given highest priority by most contacts and in most GSL documents:

1. Improved quantity and quality of water.
2. Accelerated construction of latrines.
3. Nutritional aid.
4. Continued anti-malaria efforts.

Most health and local development staffs contacted by the Team stressed the need for water and sanitation schemes to include:

- 1) Adequate maintenance and repair facilities.
- 2) Health education (primarily by the Public Health Inspector and Public Health Midwife).
- 3) Systematic water quality monitoring and correction of any problems
- 4) Participation and support by the local community.

While relatively few water and sanitation development activities appear to be going on in the rural areas at present, the GSL is giving high priority to the current preparation of a national Water and Sanitation Decade plan. A preliminary draft plan is being revised with the assistance of WHO and AID consultants and informal inputs into water planning were also made by the USAID and contract advisors working on the Project Paper for the new USAID-GSL Market Town Water Project (Jaffna). All major donors may soon be involved in water and sanitation

at different levels and in different districts. An informal division of labor among donors reportedly leaves the IBPD largely in the urban centers, UNICEF in the rural villages and USAID and certain other bilateral donors in the smaller rural towns or village clusters.<sup>4/</sup> (Section 5.4 contains more details on water and sanitation.)

There is less confidence and activity related to nutrition interventions. We were told that the current major supplemental feeding activity is the USAID-supported CARE effort carried out through the Ministries of Education and Health. While Thripasha -- a food supplement -- is allocated for the most vulnerable family members, it is generally assumed that these rations are shared among all members. The actual impact on reducing undernutrition is thus being questioned. Nutrition issues are discussed in detail in Section 5.3 and malaria control is covered in Section 5.5.

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<sup>4/</sup>

About \$80 million dollars has been committed or projected by various donors under the IBRD's water and sewerage project for Greater Colombo, which began in 1978. (Donors include IDA, CIDA, EEC, and Saudi Fund for Development). See IBRD Report P-2820-CE, Sri Lanka Second Water and Sewerage Project, May 21 1980.

### 3.4 Current Resource Allocation Patterns

The major HPN program areas of concern to AID are discussed further in Section 5. The GSL's HPN goals and general strategy are fully consistent with AID's New Directions priorities. However, as in AID, there are differences of opinion within the GSL about the priority which should be given to specific activities at a particular point in time. Likewise, statements of policy are not always backed up with the allocation of resources needed for implementation.

While current GSL policy statements call for higher priority to be given to "preventive" rather than "curative" health services, the allocation of financial resources within the Ministry of Health does not appear to reflect these changes in policy. A rather clear delineation between "preventive" and "curative" units and activities is made by most Sri Lankans, although our team felt that some curative institutions were providing preventive services and vice versa. However, in reviewing the MOH budget for 1978-80 (see Table 3.3), we will follow the general Sri Lankan pattern of regarding the Community Health Services category as "preventive" and the Patient Care Services category as "curative." Actual or estimated expenditures for 1978-80 indicate that Community Health Services received an annual average of 26% of the budget as compared to about 68% for Patient Care Services. The estimate of 30.8% for Community Health Services in 1979 reflects a high financial input by foreign donors that year---equal to 28.4% of the MOH budget and 58.6% of the Community Health Services budget. (See Table 3.4). The budget estimates for 1980 suggest a significant decline in the share of funds going to Community Health Services.

Table 3.3--Breakdown of Ministry of Health Budget by  
Major Program Category, 1978-1980 (By Percentage)

Programme	1978 (Actual)	1979 (Estimate)	1980 (Estimate)
1. General Administration and Staff Services	5.3%	4.8%	7.4%
2. Patient Care Services ("Curative")	69.9%	64.4%	71.4%
3. Community Health Services ("Preventive")	<u>24.8%</u> 100.0%	<u>30.8%</u> 100.0%	<u>21.2%</u> 100.0%
Total Budget (Rps.)	589,023,625	841,645,198	853,672,617
Recurrent Expenditures As % of Total	86.6%	74.9%	82.5%

SOURCE: Ministry of Health, Budget Estimates 1980

Table 3.4--Foreign Aid to Ministry of Health

<u>Programme</u>	<u>1978</u>	<u>1979 (Est.)</u>	<u>1980 (Est.)</u>
General Admin. & Staff Services	Rps. 86,306 (0.3%)*	1,028,412 (2.6%)	6,449,900 (10.1%)
Patient Care Services	Rps. 31,866,176 (7.7%)	86,260,800 (15.9%)	66,900,732 (11.0%)
Community Health Services	Rps. 63,146,984 (43.2%)	152,166,986 (58.6%)	25,224,655 (13.9%)
<b>Total Foreign Aid:</b>	<b>Rps. 95,099,466</b> <b>(\$5,943,717)</b>	<b>Rps. 239,456,198</b> <b>(\$14,966,012)</b>	<b>Rps. 98,575,287</b> <b>(\$6,160,955)</b>
<b>Total Ministry Budget:</b>	<b>Rps. 589,023,625</b> <b>(\$36,813,977)</b>	<b>Rps. 841,645,193</b> <b>(\$52,602,825)</b>	<b>Rps. 853,672,617</b> <b>(\$53,354,539)</b>
<b>Foreign Aid as % of Ministry Budget</b>	<b>16.1%</b>	<b>28.4%</b>	<b>11.5%</b>

\* % in brackets represents portion of that programme's budget which came from foreign aid.

\*\* Exchange Rate: Rupees 16= \$1.00

SOURCE: Ministry of Health, Budget Estimates 1980

Our team was told by some contacts that increased budgetary support for preventive services was difficult at present because larger allocations for capital expenditures were essential to repair long neglected buildings and equipment. Other observers noted that curative staffs simply had a competitive advantage in lobbying to keep their share of the budget, since the prospect of reducing existing services and staffs was more politically threatening than not making the allocations to establish new (preventive) services. An analysis of the Ministry of Health budget shows that recurrent expenditures accounted for about 87% of the budget in 1978, 75% in 1979, and 82% for 1980 (See Table 3.3). While this reportedly represents major increases in capital expenditures over previous years, it does not appear to be the major reason for the failure to allocate more funds for preventive health services. In any event, it would appear that a larger share of the MOH budget must go to Community Health Services if the GSL is really serious about increasing primary health staffs and services in the rural areas.

We do need to acknowledge that some significant preventive health services and information are provided through other government agencies. Governmental expenditures for health reportedly account for only 60% of all health outlays in Sri Lanka and the Ministry of Health budget may represent only 50% of government expenditures related to health.<sup>4/</sup> The other major health-related outlays are for food subsidies and water and sanitation. However, as noted earlier, the share of budget going for food subsidies is also rapidly declining. While we did not have time to analyze the budgets which include water and sanitation expenditures, a GSL-sponsored water and sanitation workshop report

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<sup>4/</sup> Ministry of Health, Country Health Programming-Sri Lanka, December 15, 1978, page 29.

notes that expenditures for drinking water and sanitation increased from 2% of the national budget in 1977 to 5% in 1980.<sup>5/</sup> Some contacts told our team that the GSL planned to commit 6% of its budget to Water and Sanitation Decade projects. Our Ministry of Finance and Planning contacts said they were unaware of such a specific commitment, but acknowledged that such expenditures could reach this level. After our Team's return to Washington, World Bank documents, citing the GSL's updated Public Investment Program 1980-1984, indicated that 5.9% of the public investments budget would be allocated to water and sanitation projects between 1980 and 1984. This 5.9% would come to 3,757 million Rupees. If we add the 1,422 million Rupees for "Health" investments, the two areas (health plus water and sewage) would account for 8.1% of the Public Investment Program or 5,179 million Rupees.<sup>6/</sup>

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<sup>5/</sup> Group E Report. Foreign Aid, National Workshop on the International Drinking Water Supply and Sanitation Decade (1981-1990) Plan, Colombo, 1980.

<sup>6/</sup> World Bank, Sri Lanka: Key Development Issues 1980, Vol. 1 The Medium Term Development Program (Washington, D.C.: May 20, 1980) page 38, Table 12.

### 3.5 Conclusions

3.51 If national health statistics and goal statements are used as the basis for argument, we would conclude that Sri Lanka's commitments and performance are consistent with the national standards established in the Asia Bureau HPN Strategy Statement. However, the quality and nature of the available HPN data in Sri Lanka probably indicate a better health situation than the one which actually exists. There are still significant portions of the population which do not receive the basic minimum level of HPN services.

3.52 There is adequate awareness among GSL officials that low-income groups must receive more and better public health services. However, there is a feeling among some officials that the best way to improve health services is to increase income levels so people can afford to buy what they want. This lack of agreement on tactics contributes to the apparent inconsistency between policy statements calling for increased primary and preventive health services and the small share of budget actually being allocated to such services. We do appreciate the very serious overall resource constraints on GSL decision-makers, but also believe that some improvements can be made through the reallocation of existing funds.

3.53 Many of the new and positive studies and reports on increasing primary health services and water and sanitation facilities stem from current WHO and UNDP global campaigns. We got the uneasy feeling that international donor politics and local politics could combine to stress rhetoric rather than substance, unless more attention is given to actual resource commitments and time-based performance targets.

3.54 As discussed in Section 5 below, some changes in staffing and training are being gradually introduced to upgrade rural health services. In spite of some conservative elements within the Ministry of Health, there will be increased use of paramedics to provide basic services now available only from physicians. The National Institute of Health Sciences (NIHS) at Kalutara is seen by most observers as a key element in preparing paramedics and physicians for their new roles in a revised primary health delivery system. Consequently, USAID and the other donors involved in supporting an expanded NIHS operation can also play an important part in changing the rural health system during the next few years.

3.55 As noted earlier, the HPN data and information system is inadequate to support good HPN planning, implementation, and evaluation activities. The collection and use of data are also being complicated by the current proliferation of project or sub-cabinet ministries. The recent establishment of national councils or task forces for health, population, etc. provides some interagency cooperation and coordination on national policy issues, but will not do much to solve the growing fragmentation of implementation instruments. Similarly, the creation of new local development bodies will improve community participation but these must also fit into some scheme of national priorities. In short, there is an urgent need for a central point for collating, analyzing, and disseminating HPN and other program data. Some steps in this direction are reportedly being taken under a UNDP grant to help establish a Development Information Center. Hopefully, such a center will also concern itself with HPN data.

#### 4. HEALTH PROFILE

##### 4.0 Population Trends and Dynamics

Both fertility and mortality have shown appreciable declines since 1945, however the decline in the death rate has been more impressive. The crude death rate fell from 21 in 1945 to 14 in 1947 and then to 6.5 in 1976.<sup>1/</sup> The corresponding figures for the crude birth rate are 35.9, 38.6, and 27.9 respectively. There was a slight increase in fertility in 1978, at which time the crude birth rate was 28.4

The marked decline in mortality is generally attributed to the control of malaria by a DDT spraying campaign initiated in 1946.<sup>2/</sup> Further and more gradual declines in mortality have been attributed to improved medical care, improvements in environmental sanitation, free feeding of school children and general improvements in the standard of living.

The decline in the birth rate is attributable to two factors: a rise in the average age at marriage of females and a reduction in marital fertility, possibly due to the use of contraception on the part of married couples.<sup>3/</sup> For the period of 1963-1971, changes in marital fertility

<sup>1/</sup> Ministry of Plan Implementation. Sri Lanka: Background Paper for Population Needs Assessment Mission (UNFPA). Colombo: Sri Lanka, undated, pp. 33-34.

<sup>2/</sup> Department of Census and Statistics. Census of Population 1971, Sri Lanka, General Report. Moratuwa: Department of Census and Statistics, February 1978, p. 24.

<sup>3/</sup> Ibid , pp. 26-27.

were responsible for 40% of the decline in the birth rate, and the remaining 60% was due to changes in marital composition. It seems quite likely that the recent rise in fertility is attributable to an increase in nuptiality rates on the part of women of marriageable age, particularly younger women.

The population of Sri Lanka grew relatively slowly until 1953 when the population growth rate reached 2.8 percent, the highest rate ever recorded.<sup>4/</sup> The rate of population growth has declined steadily since that time reaching 2.2 percent in 1971. It is noteworthy that the increase in population due to migration exceeded the rate of natural increase during the intercensal periods of 1871-1881 and 1891-1901.<sup>5/</sup> The contribution of immigration to population growth has declined steadily since the turn of the century however and since 1953 international migration patterns have resulted in a net loss of population.

The result of relatively high fertility until rather recently and of quite low mortality rates has been a "young population" with 39 percent of the population under the age of 15 years in 1971, as compared to 30 percent or less in many developed countries. On the other hand, those aged 65 years or older constituted only 4.2 percent of the population while in the developed countries people in this age group may account for 10 percent of the total population.

<sup>4/</sup> Ibid, p. 18

<sup>5/</sup> Ibid, p. 22

#### 4.1. General Epidemiological Patterns

Morbidity and mortality patterns reflect primarily the influence of an adverse physical environment, however they are influenced to some degree by the so-called diseases of civilization. The latter is especially true of mortality rates. (See Table 4.1.1)

Table 4.1.1

Leading causes of morbidity, 1976 (rates per 100,000 population):

1. Malaria	2,217.7
2. Diseases of the respiratory system, pneumonias, bronchitis, etc.	2,321.4
3. Delivery without complications	1,798.0
4. Accidents, poisoning, and violence including homicide and suicide	1,682.9
5. Diarrheas, including cholera, bacillary dysentery, amebiasis, etc.	1,297.6
6. Complications of pregnancy, including abortions	964.5
7. Diseases of the digestive tract, peptic ulcer, gastritis, etc.	828.1
8. Diseases of the skin	758.2
9. Diseases of the genito-urinary system	615.9
10. Diseases of the circulatory system, ischemic heart disease, stroke, etc.	576.6

Source: Ministry of Health: Country Health Programming, Sri Lanka, December 15, 1976, p.53

Table 4.1.2

Leading causes of mortality, 1976 (rates per 100,000):

1. Diseases of the circulatory system	84.07
2. Diseases of the respiratory system	70.04
3. Accidents, poisoning, and violence	63.12
4. Diarrhea diseases	53.64
5. Diseases of infancy, birth, injuries, prematurity, etc.	47.30
6. Neoplasms	30.77
7. Nutritional deficiencies	22.77
8. Anemias	21.80
9. Tuberculosis	11.60
10. Diabetes Mellitus	9.51

Source: Ministry of Health. Country Health Programming, Sri Lanka.  
December 15, 1978, p.53

It is noteworthy that seven of the ten leading causes of death are preventable to a greater or lesser degree. Indeed, it is entirely possible that some diseases not identified as preventable in this analysis, namely, certain diseases of the circulatory system and neoplasms etiologically related to the use of betel and tobacco, are preventable as well.

It is worth emphasizing that describing a series of disorders as "preventable to a greater or lesser degree" needs considerable qualification. For example, malnutrition can be prevented by providing appropriate food to the individual at risk of developing the disorder. Nonetheless, despite massive levels of food assistance in many instances, most developing nations have not succeeded in reducing the prevalence of malnutrition among vulnerable groups, notably children under the age of five years. Sri Lanka has made a more concerted effort in this regard than many developing countries, but the fact that 42.0 percent of all rural Sri Lankan pre-school children suffer from second and third degree malnutrition (Gomez classification) is a source of genuine concern to health authorities.<sup>B/</sup> (Section 5.3.3. provides more details on nutrition issues).

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<sup>B/</sup> Department of Census & Statistics. Statistical Profile of Children, 1977, Sri Lanka, Colombo: Department of Census & Statistics, 1978.

#### 4.2. Analysis of Patterns by Age Group

The burden of mortality falls most heavily upon the very young. While children under five years of age constitute but 13.1% of the population of Sri Lanka, they experience 22.2% of all deaths that occur in the population annually. <sup>9/</sup>

Infant mortality in 1978 was about 42 per 1,000 live births. <sup>10/</sup> While this compares quite favorably with the infant mortality rate in many developing countries, it is appreciably higher than that of developed countries. For example, infant mortality in the United States in 1973 was 17.6. <sup>11/</sup>

It is useful to examine the two components of infant mortality. Neonatal mortality, deaths under 28 days, reflects obstetric factors such as birth injuries and congenital defects as well as environmental factors, especially prematurity (to the extent that low birth weight infants reflect dietary deficiencies on the part of their mothers). Postneonatal mortality, deaths between 28 days and one year, are due primarily to environmental factors, notably infectious diseases, diarrhea disorders, and malnutrition. In the United States in 1970 the neonatal mortality rates was three times the postneonatal rate, a reflection of improved control of nutritional status achieved during the previous four decades. <sup>12/</sup>

<sup>9/</sup> Ibid, p. 10, p. 23.

<sup>10/</sup> IMR estimate of 42.1 for 1978 from GSL Registrar General, Vital Statistics 1979.

<sup>11/</sup> Mausner, Judith S. and Anita K. Bahn. Epidemiology, An Introductory Text. Philadelphia, London and Toronto: W.B. Saunders Co., 1974, p. 186

<sup>12/</sup> Ibid, p. 190.

In Sri Lanka in 1974, however, as shown in Table 4.2.1, the proportions of death under one year which occurred in the neonatal period, 57 percent, exceeded those which occurred in the postneonatal period, 43 percent, only slightly. <sup>13/</sup>

This finding is consistent with the assumption that environmental factors hence, factors susceptible to intervention, continue to exert a powerful influence on infant mortality in Sri Lanka. Examining the ten leading causes of infant mortality, as outlined in Table 4.2.2, pre-maturity was the primary cause of death in children under one year of age, with the rate almost three times that of the next two major causes of death. Further, a statistical analysis of the relationship of infant mortality and female literacy rates, by district, undertaken by one of the sector review team members, indicated a strong inverse correlation as has been documented in other countries, with infant mortality rates generally increasing as female literacy rates decreased.

Mortality for the 1-4 year age in Sri Lanka was 5 per thousand in 1972.<sup>14/</sup> Again, while this compares quite favorably with many developing nations (e.g., 16 per 1,000 in the Dominican Republic in 1974), it is appreciably higher than that in the developed world (e.g., 0.8 per thousand in the United States in 1974).<sup>15/</sup> Thus, mortality in this age group is over six times that which prevailed in the United States in 1974. While no information

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<sup>13/</sup> Department of Census and Statistics Statistical Profile of Children, 1977, Sri Lanka. Colombo: Department of Census and Statistics, 1978; provides considerable useful data in infant and child mortality.

<sup>14/</sup> Marga Institute. Needs of Children and Adolescents. Colombo: Marga Institute, 1975, p.96.

<sup>15/</sup> USAID Mission to the Dominican Republic, Health Sector Assessment for the Dominican Republic, 1974.

Table 4.2.1-DEATHS OF CHILDREN IN SRI LANKA-1974

Age	Total Number of Deaths	Percentage Distribution of Deaths / 1 yr.	Percentage Distribution of Deaths / 5 yrs.	Cumulative Deaths of Infants / 1 yr.	Cumulative Deaths of Infants / 5 yrs
< 7 days	7618	40.7	28.8		
< 2 months	3046	16.3	11.5	57.0	40.3
2-3 mos.	3055	16.3	11.5	73.3	51.8
3-12 mos.	5005	26.7	18.9	100.0	70.7
Sub-total / 1 yr.	18724				
1-2	2550		9.6		80.3
2-3	2041		7.7		88.0
3-4	1792		6.8		94.8
4-5	1359		5.1		99.9 <sup>b)</sup>
Total to 5 yrs.	26,466 <sup>a)</sup>		100.0		
All ages	119,518				

a) Note: Deaths of children under 5 represent 22.1% of total deaths of all ages

b) Figures do not add to 100% due to rounding

Source: Registrar General's Department as reported in Statistical Profile of Children - 1977: Sri Lanka; Colombo. Department of Census and Statistics, 1978, p. 21.

Table 4.2.2 - TEN LEADING CAUSES OF INFANT MORTALITY, SRI LANKA, 1976

<u>Rank</u>	<u>Cause(s)</u>	<u>Rate per 1000 live births</u>
1	Immaturity (Pre-maturity)	14.0
2	Other unspecified causes	4.9
3	Convulsions	4.0
4&5	Pneumonias and Debility	3.6
6	Enteritis and other diarrheal	2.7
7	Birth injury, difficult labor and other	2.1
8	Avitaminosis and other nutritional deficiencies	1.6
9	Rathe (Erythematons conditions)	1.4
10	Bronchitis, Emphysema and Asthma	1.1

Source: Bulletin of Vital Statistics, 1977; Colombo; Dept. of Census & Statistics, October 1979.

is available regarding the causes of death among Sri Lankan children in this age group, the available evidence suggests it is virtually certain that most such deaths are due to diarrhea disorders and respiratory infections, with malnutrition a contributory factor in many instances. Again, the importance of the environment as a determinant of mortality is apparent.

One aspect of age (and sex) related mortality is deserving of special mention: maternal mortality. Maternal mortality in Sri Lanka in 1976 was 0.9 per 1,000 live births. <sup>16/</sup> This was more than five times the maternal mortality rate in the United States during the same period, i.e, 0.12 per 1,000 live births (1975). <sup>17/</sup> While maternal mortality is influenced by both obstetric factors and socio-economic conditions, this level of maternal mortality is surprising for several reasons.

Maternal mortality is strongly associated with maternal age, with the rate consistently increasing by age group, particularly among older women. As highlighted in Table 4.2.3 maternal mortality doubles after age 35 and is four and one-half times greater than the average rate for all age groups among women over 45. These age-differentials provide a powerful justification for investments in family planning for women over 35 on health grounds alone.

While no data are available on the fertility of Sri Lankan females under the age of 15 years, the relatively low fertility of women 15-19 years (31 live births per 1,000 women in the age group in 1974 as compared

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<sup>16/</sup> Department of Census & Statistics, Statistical Profile of Children, 1977, Sri Lanka. Colombo: Department of Census & Statistics, 1978, p.21.

<sup>17/</sup> U.N. Demographic Yearbook 1977 (New York, United Nations).

Table 4.2.3 - AGE SPECIFIC MATERNAL MORTALITY RATE, SRI LANKA - 1976

<u>Age Group</u>	<u>Maternal Mortality Rate (per 1000 live births)</u>
15-19	0.6
20-24	0.7
25-29	0.8
30-34	0.9
35-39	1.7
40-44	2.0
45+	4.1
All Age Groups	0.9

Source: Bulletin on Vital Statistics, 1977: Colombo  
Department of Census & Statistics, October 1979

to 60 per 1,000 in the United States in the same period) suggests that fertility is also low in the females under 15 years of age. <sup>18/</sup> Fertility of Sri Lankan women over 40 years is not unduly high: 40-44 years: 43 per 1,000; 45-49: 6 per 1,000. <sup>19/</sup> The high health risks associated with pregnancies in this age group indicate that family planning among these women could contribute to substantial reductions in the maternal mortality rate.

While nationally 62.7 percent of all births in Sri Lanka in 1977 occurred in government institutions, the variation between districts is significant---ranging from a high of 85.5% in Kurunegala to a low of 39.2% in Nuwara Eliya (a district with a large estate population which does not extensively use the health system). <sup>20/</sup> It is widely assumed that deliveries in health facilities favor lower maternal mortality rates. In fact, throughout the team's field visit, the desire to deliver in a hospital led women to virtually reside in hospitals for up to one month prior to actual births to ensure accessibility to professional care. Health staff queried on these utilization patterns stated that the rationale was an economic, not a medical one. Because a woman already in labor would have to hire a private car to reach the health facility, poor women favor use of public transport and "free" bed and food while in-waiting. The cost to the health system has not been assessed but does clearly contribute to evident overcrowding of ob/gyn sections of hospitals.

The cost-effectiveness of facility-based deliveries for all women should

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<sup>18/</sup> Ministry of Plan Implementation. Sri Lanka: Background Paper for Population Needs Assessment Mission. Colombo, Sri Lanka, undated, p. 43.

<sup>19/</sup> Ibid.

<sup>20/</sup> Ministry of Health. Country Health Programming, Sri Lanka. December 15, 1973. p. 44.

be carefully examined in the Sri Lankan setting. In this regard it is worth recalling that maternal mortality in eighteenth century London was twenty times that in the surrounding rural areas. <sup>21/</sup> Similarly, Mata recently reported some 450 obstetrical deliveries in an Indian village in Guatemala, deliveries attended by indigenous midwives, without one maternal death, one case of toxemia, or one instance of puerperal infection. <sup>22/</sup> High priority should be given to a study of the determinants of maternal mortality in Sri Lanka and current programs effectiveness in addressing them.

#### 4.3 Analysis by Socio-economic Status

Unhappily, most studies of socio-economic status differentials in mortality have been undertaken in developed countries. The Registrar-General of Great Britain undertook such a study at the turn of the century and was able to show a powerful, negative social class gradient for mortality from a variety of disorders, including cancer, of all sites and both sexes. <sup>23/</sup> These findings were later confirmed in the United States by the seminal work of Kitagawa and Hauser. <sup>24/</sup> The latter authors studied the associations of education and income with mortality from a variety of diseases and were able to show that each exerted independent effects. In view of these and similar studies, it would be most surprising if socio-economic status in Sri Lanka were not powerfully associated with

<sup>21/</sup> McKeown, Thomas. The Modern Rise of Population. London 1972.

<sup>22/</sup> Mata, Leonardo. The Children of Santa Maria Canque. Cambridge: M.I.T. Press, 1978.

<sup>23/</sup> Registrar-General of Great Britain and Wales, Occupational Mortality, Supplementary Report, 1910.

<sup>24/</sup> Kitagawa, Evelyn and Philip Hauser. Mortality Differentials in the United States. Cambridge: Harvard University Press, 1965.

mortality, but no data is available in this regard. However, information is available for dietary adequacy in calories and protein by income level in Sri Lanka. Given the extreme importance of nutritional status as a determinant of morbidity and mortality, such data is pertinent to this analysis and is shown in Table 4.3.1. The correlation between income and nutrient intake is positive and consistent.

Table 4.3.1 Percent of Adequacy of Some Nutrients by Income Class, Socioeconomic Survey, Sri Lanka 1969-70.

Daily % if Recommended Allowance of Nutrients	Income Level Per Capita						
	Below Rs. 100	Below Rs. 200	Rs. 200 Rs. 399	Rs. 400 Rs. 599	Rs.600 Rs.799	Rs. 800 Rs. 999	Rs. 1000 and over
Calories	88%	94	103	111	114	116	120
Protein	89	105	120	130	135	138	147

The adequacy of the diet is determined by expressing consumption of the nutrient as a percentage of the recommended allowances on a per capita per day basis.

Source: Marga Institute. Needs of Children and Adolescents. Colombo: 1975, Table 4.3.

#### 4.4 Analysis by ethnic group

The 1971 census data suggests that mortality is highest among the Indian Tamils of Sri Lanka and lowest among the Sinhalese as is shown below:

<u>Ethnic Group</u>	<u>Death Rate per 1,000 persons</u> <sup>26/</sup>
Sinhalese	8.2
Ceylon Tamils	9.1
Ceylon Moors	9.4
Indian Tamils	11.2
Burghers	7.9

These findings must be taken cum grano salis, for the crude death rate is profoundly affected by the age composition of the population. A decade ago the crude death rate of Taiwan was lower than that of the United States. Yet, age specific mortality rates for Taiwan were higher in each age group under one year, one to four years, five to nine years, etc. than they were in the United States. A much larger proportion of Taiwan's population were in the 5 to 19 year age groups (characterized by very low levels of mortality) than that of the U.S. population. Similarly, a much higher proportion of the U.S. population was in the 65 years and older age group, one characterized by very high mortality rates. In order to accurately compare mortality of Sri Lanka's different ethnic groups, age - standardized mortality rates would be required.

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<sup>26/</sup> Department of Census and Statistics. Census of Population, 1971 Sri Lanka. Colombo: Department of Census and Statistics, 1978 p. 27.

#### 4.5 Analysis by District (rural/urban/estate)

Infant mortality has been described as a most sensitive and valuable indicator of the adequacy of health services for mothers and children and of environmental influences. <sup>27/</sup> Many regard infant mortality as the best single indicator of the general level of well-being of a society. In 1976 infant mortality levels in Sri Lanka were lowest in the following districts: Jaffna, 21; Trincomalee, 22; Moneragala, 28; and Polonnaruwa, 29. <sup>28/</sup> They were highest in Nuwara Eliya, 76; Kandy, 63; and Badulla, 61. <sup>29/</sup>

The prevalence of preschool child malnutrition is another sensitive indicator of the health and general well-being of a community. An anthropometric survey of preschool children was undertaken in rural Sri Lanka by the Ministry of Health and the Center of Disease Control, Atlanta, Georgia. <sup>30/</sup> The percentages of children who fell below the 80th percentile of the National Academy of Sciences Standards of weight-for-height are as follows:

<u>Rural Sri Lanka</u>	6.7
Village	6.3
Estate	8.6

<sup>27/</sup> Sartwell, Philip E. (ed). Preventive Medicine and Public Health. New York: Appleton-Century-Crafts, 1963, p. 656.

<sup>28/</sup> Department of Census and Statistics. Bulletin of Vital Statistics, 1977, Colombo: October 1979.

<sup>29/</sup> Ibid.

<sup>30/</sup> Brink, E.W. et al. "Sri Lanka Nutrition Status Survey, 1975," International Journal of Epidemiology, 7 (1): 41-47, 1978. The basic survey by the U.S. Public Health Service, Center for Disease Control was published by CDC in mimeographed form as SRI LANKA NUTRITION STATUS SURVEY (September 1975-March 1976), June 1976. See Section 5.3.3 of this sector review for detailed information.

These findings refer to the percentage of children who are actually undernourished, and the difference between the values for the estates and the villages is significant at the 0.001 level.

The Gomez classification, based on weight-for-age data expressed as a percentage of reference median is widely used for international comparisons and are presented below. Table 4.5.1 shows such nutrition survey data for Sri Lanka. 31/

Table 4.5.1 - Weight-for-Age percentage - Distribution of Sri Lanka Population by Gomez classification

Population Group	Classification of Nutrition Status			
	Normal	1st Degree	2nd Degree	3rd Degree
Rural Sri Lanka	9.2	48.8	38.8	3.9
Village	10.1	51.0	35.8	3.1
Estate	2.9	33.3	54.7	9.1

Severe undernutrition, referred to as Gomez classes 2nd and 3rd degree combined, was significantly more prevalent among the estate pre-school children ( $p = 0.001$ ).

#### 4.6 Summary of most vulnerable groups

The population group in Sri Lanka most likely to be subjected to the ravages of disease and death (except for those 45 years and older) consists of male children under the age of one year living on the estates.

31/ Ibid.

(Mortality rates for females have been lower than those for males in all ages except the child-bearing years since 1953. <sup>32/</sup> Female children of the same population are affected to an only slightly lesser degree. Male and then female children in the 1 to 4 year age group follow with respect to the risk of death among those under 45 years.

Some public health workers, particularly physicians, are convinced that the health status of the children who live in urban slums is inferior to that of the children of poor families in rural areas. The assumption has a certain measure of logical appeal, but the only evidence to support it is anecdotal.

One other group merits special mention: women of fertile age. Such women are uniquely at risk of death from the complications associated with pregnancy, labor, and the puerperium.

As noted earlier, there have been no studies in Sri Lanka regarding socio-economic status as a possible determinant of morbidity and/or mortality. Given the crucial roles of ignorance and poverty as determinants of health in other societies, it seems virtually certain that these factors are equally important as such in Sri Lanka.

#### 4.7 Most Critical Health Needs

Establishing priorities is to some extent inevitably an arbitrary matter, and doing so almost always reflects the prejudices of those responsible for making the necessary decisions. A degree of rationality can be introduced by using the following criteria to assist in identifying

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<sup>32/</sup> Department of Census and Statistics. Census of Population, 1971, Sri Lanka. Colombo: Department of Census and Statistic, 1978, p.74.

those disorders which merit identification as priorities: prevalence, morbidity, mortality, and feasibility of control. It would appear reasonable to give priorities in this order to the following diseases and disorders:

1. Malaria

The disease has the potential for almost universal prevalence in Sri Lanka. While mortality is relatively low, morbidity is high with varying degrees of disability, frequent complications, and a pronounced tendency toward recurrence. There is good feasibility of control through intensive case searching and treatment and spraying of residences. Sri Lanka has made great strides in controlling malaria, and the highest priority should be given to maintaining this advantage.

2. High-Risk Pregnancies

For the purpose of this analysis, the term "high-risk pregnancy" refers to any pregnancy associated with increased risk to the life or well-being of the mother or her unborn infant, and it includes unwanted pregnancies. Such pregnancies are widely prevalent. The World Fertility Survey of 1975 revealed that 60 percent of the women in the sample wanted no more children. <sup>33/</sup> Pregnancies occurring in women under seventeen years of age and those beyond thirty-five years of age carry a higher risk of death for both the mothers and their infants. A woman who bears a child while one of her preschool children is suffering from severe malnutrition places the nutritional status of both in jeopardy. Innumerable additional examples could be offered. Clearly, mortality and morbidity are high in association with high risk pregnancies.

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<sup>33/</sup> Ministry of Plan Implementation, Background Paper for Population Needs Assessment Mission, Colombo: Ministry of Plan Implementation, undated, p. 42.

The feasibility of control in this area is good. Modern contraceptive technology, i.e., the pill, the IUD, and surgical contraception, are highly effective and relatively inexpensive.

What could one reasonably expect to achieve by making modern contraceptive methods, including male and female sterilization, readily available throughout Sri Lanka? The following would almost assuredly result:

- a) a reduction in maternal mortality;
- b) a reduction in infant mortality;
- c) a reduction in the prevalence of preschool child malnutrition, and hence,
- d) a reduction in mortality in the 1 to 4 year age group.

Per dollar expended, the universal availability of modern contraception, including sterilization, would have a more profound effect on health status than any other single measure.

### 3. Diarrheal disorders

Diarrheal disorders in childhood are second in prevalence to respiratory infections and they have a much higher case-fatality rate than the latter. <sup>34/</sup> In addition to high mortality, diarrheal diseases are associated with severe morbidity, especially through their role as contributory factors to malnutrition. It has long been recognized that repeated episodes of infection, particularly diarrheas, play a prominent role in the etiology of malnutrition. <sup>35/</sup>

<sup>34/</sup> Soysa, P. Trends in Pediatrics. Paper read at the Annual Conference of the Sri Lanka Pediatric Association, 1978.

<sup>35/</sup> Scrimshaw, N.S. et al. "Interactions of nutrition and infection," American Journal of Medical Science 237: 367-403, 1959 and Mata, Leonardo. The Children of Santa Maria Cauque. Cambridge: MIT Press, 1978.

The immediate ill effects of diarrheas in childhood can be readily controlled through prompt oral rehydration. Prevention can only be achieved through the provision of safe water and appropriate facilities for excreta disposal as well as health education.

#### 4. Malnutrition, including anemia

As shown earlier in this paper, malnutrition is extremely prevalent in this society. It contributes enormously to the burden of morbidity and mortality suffered by the population of Sri Lanka, and it seems inescapable that the magnitude of the disorder as a contributory factor to mortality in childhood is concealed by virtue of the fact that it is not acknowledged on death certificates. All too often the latter simply read "bronchitis" or "diarrhea" when it was the precarious nutritional state of the child which turned a benign disease into a lethal one.

The control of malnutrition is difficult, but more can be done. More widespread use of modern contraceptive methods and improved environmental sanitation will assuredly have a salutary effect on the nutritional status of Sri Lankan children. More widespread use of immunizations, particularly against measles, would also improve nutritional status in childhood. Research is urgently needed in one area: the extent and determinants of low birth weight infants. Additional priorities could be established, but doing so is beyond the scope of this analysis.

5. KEY PROGRAMMATIC AREAS AND GAPS

5.0 General Health Delivery System

5.01 Institutional Overview

There is a fairly extensive network of traditional and modern health service outlets in Sri Lanka. Although the data are ten years old, the 1969-70 Socio-Economic Survey provides a good overview of the health delivery system.<sup>1/</sup> This study showed that about 73% of the demand for medical services is met through the Western system and 22% is met through the indigenous (primarily Ayurvedic) system. The government sector accounts for 54% of the demand and the private sector accounts for about 42%. Tables 5.01.1 and 5.01.2 provide breakdowns of institutions and health workers by sector (public versus private) and by type of medical system. Our team did not have time to obtain much information on the private sector, so our report may overemphasize the role of the public health system.

The institutional hierarchy for the public health services starts with the teaching and provincial hospitals (600 + beds) in the cities and runs down to the small Rural Hospitals (20 beds) and Central Dispensaries (small outpatient units) at the bottom. The quality of facilities, adequacy of staffing, and level of prestige generally decrease as you descend the institutional hierarchy.

The Ministry of Health has over 42,000 employees, making it the second largest Ministry in Sri Lanka. Public health care in Sri Lanka continues to be free although supply shortages may require the client to buy his own medicine.

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<sup>1/</sup> Survey data were cited in Ministry of Health, Country Profile Health Sector - Sri Lanka (Draft, October 1, 1978)

Table 5.01.1 - Type of Health Institutions in Sri Lanka (1972 and 1977 data)

Sector (year)	Type of institution	Number of institutions
Government Western (1977) <sup>1/</sup>	Teaching hospitals	2
	Provincial hospitals (±600 beds)	9
	Base hospitals (±250 beds)	18
	District hospitals (±100 beds)	109
	Peripheral units (±50 beds)	108
	Rural hospitals (±20 beds)	87
	Maternity homes (±12 beds)	27
	Central dispensaries (small outpatient unit)	385
	Branch dispensaries	137
	Visiting stations (part time)	566
	Specialized and other hospitals	22
Sub-total	1,470	
Government Ayurveda (1972) <sup>2/</sup>	Ayurveda hospitals	7
	Ayurveda dispensaries	211
	Sub-total	218
Private Western <sup>2/</sup>	Nursing homes	62
	Co-operative hospitals	14
	Estate hospitals	66
	Estate maternity homes	115
	Private practitioners	530
	Sub-total	787
Private Ayurveda <sup>2/</sup>	Private practitioners	9,823
	Sub-total	9,823
Total - All sectors		12,298

Notes: <sup>1/</sup> MOH, Development of Primary Health Care in Sri Lanka - Project Proposals 1979-83 (Colombo, 1979), page 152 (Table 3).

<sup>2/</sup> L.A. Simoonov, Better Health for Sri Lanka - Report on a Health Manpower Study. Reproduced in Ministry of Health, Country Profile Health Sector Sri Lanka (Draft, October 1, 1978).

Table 5.01.2 Health Personnel in Sri Lanka, 1978

Category	In Government Service	Non-Government *	Total
<u>Western Type (Total)</u>	<u>29250</u>	<u>9950</u>	<u>43540</u>
Doctors	2229	1033	3262
Nurses	5938	797	6735
Midwives Hospital	1388	} 192	3721
Field	2141		
Dental Surgeons	249	100	349
Asst. Medical Practitioners	1051	143	1194
Public Health Inspectors	998	129	1127
Medical Laboratory Technologists	475	55	530
Radiographers	153	20	173
Physiotherpists	159	15	154
Dental Nurses	332	29	361
Pharmacists	442	49	491
Dispensers	735	96	831
Attendants-Male	2167	} 632	5675
Attendants-Female	2876		
Other workers	18007	1000	19007
<u>Avurveda (Total)</u>	<u>983</u>	<u>4290</u>	<u>10933</u>
Doctors	293	9950	10243
Other workers	690	-	690

Source: Ministry of Health (Planning Units)

\* Estimates.

There are also pay-wards in the government hospitals for those who are able and willing to spend more for better facilities. Although the patterns are not uniform, there is generally overcrowding of the larger hospitals and under-utilization of the lower level service outlets. A major reason for this is the desire of clients to have access to a fuller range of services, particularly in the event of medical complications. The lack of basic communication and transportation services (especially ambulances) is also given as a reason for the absence of orderly client referrals from the lower to the higher levels of the service delivery system. Of course, in many rural areas, the understaffed and undersupported lower level care units mean that few services are actually available at that level.

Sri Lankan officials make a clear organizational distinction between curative and preventive functions and between Western and traditional practitioners. The responsibility for preventive functions is assigned to the Medical Officers for Health who, in turn, supervise Public Health Nurses (PHN) Public Health Inspectors (PHI), and Public Health Midwives (PHM) as the primary health outreach workers. Within traditional medicine, there are also distinctive categories, according to basic diagnostic strategy (Ayurvedic, Siddha, Uhani, etc.), specialization or sub-specialization, and family or communal heritage. (However, it is common practice to refer to all traditional practitioners as ayurvedics.) There does not appear to be very close cooperation among Western and ayurvedic medical practitioners although the idea of more active involvement of traditional healers in the public health system is discussed from time to time. Resistance to integration comes from both sides.

While the stated GSL goal is to achieve a ratio of one Government doctor (Western) per 3,000 population, in 1978 the actual ratio in the Superintendent of Health Divisions (districts) ranged from 8,850 (Kandy) to 20,360 (Matara) and 51,560 (Colombo). (The total number of government doctors was 2,229 or a national ratio of 1/6,280).<sup>2/</sup> It is estimated that during the first ten years after registration, 41% of all doctors are lost for various reasons (especially emigration). The loss rate for nurses and midwives is estimated to be only 3% while it is about 8% for registered ayurvedic practitioners.<sup>3/</sup> The GSL has decided to increase the intake of all of these categories of health workers. Some of the barriers to recruitment of staff needed for the rural health services are discussed in Section 6.11. In addition to serious staff shortages, there is a need to restructure the primary health delivery system and change the types and levels of responsibilities assigned to the various health providers.

#### 5.02 Current Research for Improved Services

To upgrade rural health services in a cost-effective manner, existing and future staffs must be trained for different roles from those now being performed. For example, to increase the range of services available at lower levels of the system, there are opportunities to delegate tasks now performed only by physicians to other health personnel and volunteers. For one thing, health volunteers could be trained to provide first-aid and to do nutritional and other surveys now being done by health inspectors. Nurses and

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<sup>2/</sup> MDH Country Profile Health Sector-Sri Lanka (Draft October 1, 1978) Section 4.3.1 (Table 3)

<sup>3/</sup> ibid., pages 11-12.

midwives could be trained to provide oral contraceptives and, under supervision, insert IUD's instead of requiring that these tasks be done only by physicians. We were told that more delegation of tasks would occur in the future as new primary health care models are designed and tested. The primary responsibility for conducting such tests and for training new and existing primary health staffs has been given to the National Institute of Health Sciences (NIHS) at Kalutara.

Our team was told that the NIHS will soon initiate a one-year pilot study in two areas which will train and utilize Public Health Midwives (PHM) and Public Health Inspectors (PHI) to create a two-person Primary Health Care (PHC) Team at the community level. The team would be supervised by a Public Health Nurse (PHN) who will also facilitate their contacts with health and other resources in the community. The PHC team would cover nutrition, school health, health education, family health (including family planning) and mental health. The team is to stress preventive functions but will be trained to provide curative services for "minor ailments." As part of a "total development" strategy, the team will also work with a Primary Health Care Committee made up of local leaders, community development staffs, other health providers, et. al. Each committee would represent a population of about 10,000. The Primary Health Care Team will make referrals, as appropriate, to care facilities operated by the Assistant Medical Practitioner (AMP) or Medical Officer for Health. Presumably, serious complications or emergencies could be referred directly to one of the larger hospitals.

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<sup>4/</sup> Information on the new model came from staff members of NIHS and the Ministry of Health.

- The World Health Organization is providing \$30,000 to help fund the initial phase of this model building activity. The second phase would presumably expand the tested models to only ten more areas. If this is true, it will take a long time for this activity to increase primary health care coverage. Although our team's observations were necessarily limited, and hence not necessarily representative, we were very favorably impressed with the high level of competence and motivation of most of the medical and paramedical personnel we contacted in the hospitals and field units. There would certainly be a good basis for assuming that the paramedical staffs can be trained to provide a broader range of services, if they are given adequate supervisory and logistical support.

### 5.1 National Population Policies and Priorities

In 1965, an Advisory Committee of the Ministry of Health outlined a National Family Planning Program. The latter included the specific objective for "the reduction of the birth rate in Ceylon from 38 per 1,000 to 25 per 1,000 in 1975."<sup>1/</sup> The Country Health Programming Exercise undertaken by the Ministry of Health with WHO assistance in 1978 also stated a specific objective in this regard: "to reduce the birth rate to 20/1,000 in 1986 from the present 27.6."<sup>2/</sup>

The present government's policy on population and family planning was spelled out quite succinctly at a recent population conference by the Secretary of the Ministry of Plan Implementation:

...Firstly, the Government is concerned with the rate of population growth and its policy is to take all meaningful steps to curb unplanned growth of population. Secondly, enhanced family planning services will be provided by the State and financial incentives with a view to controlling the population explosion will be given to individuals who practice family planning voluntarily. Thirdly, the emphasis of the Government will be in the field of service oriented programmes, to enable motivated couples and individuals to receive family planning services and to undergo sterilization, male or female, voluntarily.<sup>3/</sup>

A more forthright statement of policy regarding fertility is difficult to imagine. Clearly, no more is needed in the population policy area unless one wishes to insist on statements of intent with regard to such demographic variables as mortality and migration, both internal and international. Some observers would insist however, that there is a need for greater commitment to fertility

<sup>1/</sup> (Background Paper for Population Assistance Needs Assessment Mission, 1980)

<sup>2/</sup> Country Health Programming, Sri Lanka (Ministry of Health, December 15, 1978)

<sup>3/</sup> Dr. Wickrema Weerasooria, in Family Planning Above Party Politics (Ministry of Plan Implementation, Colombo, March 13, 1980).

reduction in some areas of the government. There can be little question regarding the degree of commitment on the part of the President, the Prime Minister, and the Secretary of the Ministry of Plan Implementation. There seems to be some doubt however, as to the degree of commitment on the part of some key figures in the Ministry of Health. If commitment is lacking in that critical section of the Government, it is indeed unfortunate given that Ministry's crucial role in implementing the family planning program.

It is laudable that the present Government has given such a high priority to voluntary sterilization. Every public health official interviewed by the HPN Team agreed that the demand for sterilization far exceeds the ability of the Government to meet it. International donors in this field should be encouraged to assist the Government as fully as possible in meeting the demand in this crucially important area. There is also a full awareness of the problems encountered earlier in India because of the excessive pressures to increase sterilization. However, the high educational level of the Sri Lankans has reportedly facilitated the growing awareness of the benefits of family planning and a strong motivation among many to seek contraceptive services.

The current stress on sterilization should not be construed as diminishing the importance of making temporary contraceptives - i.e., pills, condoms, and IUDs, readily accessible. In this regard it is extremely unfortunate that at present only physicians are allowed to provide oral contraceptives through the family planning program. Experience elsewhere has shown that the oral pill can be safely distributed by nonphysicians such as Sri Lanka's public health nurses and public health midwives. This can be done through the use of a check list to identify those women for whom use of the pill is potentially dangerous. Parenthetically, it might be noted that the pill is safer with regard to thrombo-embolic complications and myocardial infarction for Sri Lankan women

than some others by virtue of the fact that few Sri Lankan women smoke cigarettes. While some contacts indicated that nonphysicians would soon be trained to dispense oral contraceptives and insert IUD's there is no consensus on this issue within the MOH.

#### 5.2 Maternal and Child Health

Maternal and child health activities at present consist of pre and postnatal care, immunizations, D.P.T., B.C.G., T.T., D.T., and poliomyelitis, and the provision of family planning services. Such activities are entirely appropriate, however, coverage is woefully inadequate. Every effort must be made to provide greater coverage of the respective target populations with these services. In addition to increasing coverage with the vaccines mentioned earlier, it is imperative that immunizations include measles. There is some evidence that measles plays an important role in the etiology of kwashiorkor in Sri Lanka as it does elsewhere. Admittedly, measles vaccine is expensive, however, the international donors well may provide such assistance if the importance of immunity to measles is made clear to them. It would be exceedingly helpful in this regard to know what the case-fatality rate of measles is in Sri Lanka.

There are two important child health activities which appear to be neglected in Sri Lanka thus far. One is readily available facilities for the oral rehydration of children with diarrhea. Ideally, one woman in every village should know how to properly prepare an oral electrolyte solution and have on hand the materials needed to do so. A word of caution is in order at this point. An improperly prepared hypernatremic solution (one containing too much salt) can be fatal when given to a dehydrated child unless it is accompanied with plain water offered freely.

The second missing element is nutrition surveillance. Experience elsewhere has shown that simply weighing pre-school children, recording their weight for age on an appropriate chart, and leaving the chart with the mother have resulted in appreciable reductions in the prevalence of pre-school child nutrition. Admittedly, the proper balances (Salter scales) are expensive. Burma is carrying out a program of nutrition surveillance by periodically measuring the mid-arm, circumference of childrens' upper arms utilizing inexpensive color-coded tapes especially made for that purpose. Either approach could be readily employed by volunteers in rural villages.

### 5.3 NUTRITION: THE PRECARIOUS BALANCE BETWEEN REQUIREMENTS AND AVAILABILITY

#### 5.31 OVERVIEW OF NUTRITIONAL STATUS

Assessment of the nutritional status of Sri Lankans is rendered difficult by the paucity of current information on the incidence and prevalence of malnutrition in the population as a whole. It is widely felt that the principal nutritional problem is one of chronic under-nutrition.

Since the late 1970s, cases of kwashiorkor and marasmus have been rare throughout the island. Based on data from the pediatric unit at Colombo Hospital, in 1973 marasmus was reportedly the second highest cause of death in the unit. Similarly admissions for kwashiorkor, once common, have dropped to about one or two per month. An analysis of 50 cases of kwashiorkor being treated at the hospital in the 1977-78 period indicated that 28 of them, or almost 60%, had measles immediately prior to the onset of kwashiorkor. 1/

Iron deficiency anemia is common throughout Sri Lanka and is particularly significant among pregnant women. The underlying causes are not clearly understood but are generally felt to be related to dietary patterns and the high prevalence of hook worm infestations. The availability of iron in the typical Sri Lankan diet is poor. Average consumption of foods important for increasing iron absorption (including ascorbic acid, meat and fish) is also low. At the same time phytates and phosphates in rice, which is the major staple, actually reduce the absorption of the already limited iron available in the typical diet. 2/

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1/ "Trends in Paediatrics", unpublished paper presented by Dr. Priyani Soysa at the Annual Conference of the Sri Lanka Pediatric Association, 1978.

2/ Status of Women: Sri Lanka, University of Colombo, 1979, p. 625. (A report prepared under USAID contract.)

The generally low utilization of health clinics by women in remote areas who are at greatest risk of iron deficiency hampers the delivery of worm treatments and iron and folate supplements to reduce this pervasive problem.

Poor maternal nutrition, expressed in below standard height and weight, is the primary cause of low birth-weight infants. It is these infants who, in turn, are more vulnerable to undernutrition than those of well-nourished mothers. A study of deliveries at De Soysa Maternity Hospital indicated that 20% of the babies born were of low birth weight. Further analysis of data from this study indicated that, of these, only 20% were premature births while 80% were small-for-dates. <sup>1/</sup> The extent of maternal malnutrition is strikingly demonstrated by the fact that 38% of women gain less than 4.5 kilos during their pregnancy, and 24% of all pregnant women give birth to infants weighing less than 2.5 kilos. An estimated 250,000 pregnant and lactating women need iron fortification and over 80,000 are severely anemic. <sup>2/</sup>

One of the main objectives of the national supplementary feeding program is to improve the weight of mothers as a preventive measure for reducing the incidence of low birth weight. Improvements in maternal height can also be expected from overall long-term improvements in dietary intake. (Stunting is a function of chronic undernutrition.) The Soysa Hospital study shows that 50% of the mothers of low birth weight babies had family incomes of less than 200 Rupees per month, or the national average income level at the time of that study. <sup>3/</sup> Area studies covering four communities indicated that age at marriage also was related to birth weight with the lowest birth weights occurring in young mothers under 20 years of age although mothers over 35 also were affected. <sup>4/</sup>

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<sup>1/</sup> Ibid, pp. 632-3.

<sup>2/</sup> CARE Programs in Sri Lanka, Report by CARE Office, Colombo, 1979 (Soyabean Foods Extension Program information).

<sup>3/</sup> Status of Women: Sri Lanka, *op. cit.*; p. 636.

<sup>4/</sup> Ibid, pp. 632-3.

- Traditionally, dietary deficiencies in Vitamin A were a primary cause of blindness in children in Sri Lanka. Given the dramatic declines in Vitamin A deficiencies, however, the health community has emphasized in recent years that an island-wide vitamin A supplementation program (such as those undertaken in India and Indonesia) would be an unnecessary burden on the very limited national health resources and should not be implemented. Existing data indicate that the nutritional situation of the most vulnerable population groups has not improved markedly over the last decade, despite moderate increases in income levels. Moreover, there are current indications that the situation may in fact be deteriorating among the poorest segments of the population in both rural and urban areas.

#### 5.32 RELATIONSHIP OF INCOME AND NUTRITIONAL STATUS

Comparison of per capita caloric and protein intake by income group (using data from the 1969/70 and 1973 socio-economic survey and consumer finance survey, respectively) indicates that income levels are an important determinant of diet adequacy. Further, these surveys show a significant reduction in intake of both proteins and calories for all income groups over the period studied. Using the recommended daily allowances (RDAs) for Sri Lanka as a base (Table 5.3.1), the 1969/1970 socio-economic survey indicated that 43% of the population was comprised of individuals earning less than Rs.200 per month who did not meet RDAs for either calories or proteins and were spending approximately 63% of the total average household monthly expenditures on food. In contrast, the highest household income groups consumed 441 calories and 18 grams of protein above RDAs, but these groups used only 33% of their total monthly expenditure for food. (See Table 5.3.2.) It can be assumed that the lowest income groups would have

had to spend even a higher percentage of their income on food in the absence of the food subsidy/ration program.

TABLE 5.3.1

PER CAPITA RECOMMENDED DAILY ALLOWANCES (RDAs)  
FOR SRI LANKA

Calories	2200
Protein (g)	48
Calcium (mg)	519
Iron (g)	23
Vitamin A (mcg)	642
Riboflavin (mcg)	1220

By 1973, average per capita/consumption of calories and proteins had fallen from 2,264 and 53.8 to 1,936 and 44.2, respectively, reflecting declines over the period in intakes from 103% to 88% of RDA of calories and from 112% to 92% of protein. Only the top 4.3% of the population, by income, were meeting the RDAs. Among the bottom 25% of the population with incomes below Rs.200 the declines were even more dramatic, as highlighted in Tables 5.3.2 and 5.3.3. While the gap between RDA and actual average per capita caloric intake widened between 1969/70 and 1973, as highlighted in figures 5.3.4 and 5.3.5, the relative evenness of the distribution of intake and, thus, assumed food availability across income groups has made Sri Lanka unique among developing countries. Studies suggest that this can be attributable directly to the national food subsidy/ration scheme. <sup>1/</sup>

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<sup>1/</sup> See James D. Gavan and Indrani Sri Chandrasekera, "The Impact of Public Foodgrain Distribution on Food Consumption and Welfare in Sri Lanka," Research Report 13, International Food Policy Research Institute, December 1979, for a discussion of the distribution effect of the food ration/subsidy scheme.

TABLE 5.3.2

Per capita food and nonfood expenditures, calorie intake, and protein intake, by income group, 1969-70

Household Income Group	Monthly Food Expenditure <sup>a</sup>	Monthly Expenditure for All Goods <sup>a</sup>	Ratio of Expenditures on Food and All Goods	Population	Calories <sup>b</sup>	Protein <sup>b</sup>
(Rs)	(Rs)		(percent)			(grams)
0-99	19.44	n.a. <sup>c</sup>	n.a. <sup>c</sup>	5.4	1,941	40.2
100-149	23.05	n.a. <sup>c</sup>	n.a. <sup>c</sup>	13.6	2,103	45.0
150-199	25.12	37.15 <sup>d</sup>	62 <sup>e</sup>	16.5	2,157	47.1
200-399	29.79	51.79	58	40.0	2,272	54.0
400-599	37.09	71.59	52	14.6	2,437	58.6
600-799	41.84	92.25	45	5.3	2,512	60.8
800-999	48.36	123.83	39	2.1	2,540	62.2
Above 1000	59.46	177.93	33	2.6	2,641	66.0
Average	30.34	56.35	54	100.0	2,264	53.8

Sources: Sri Lanka, Department of Census and Statistics, *Socio-Economic Survey of Sri Lanka, 1969-70: Statistical Tables*, vol. 2 (Colombo: Department of Government Printing, 1973), Tables 20.0 and 22.0; Sri Lanka, Department of Census and Statistics, *Socio-Economic Survey, 1969-70: Special Report on Food and Nutrition Levels in Sri Lanka* (Colombo: Department of Government Printing, 1972); and Thomas T. Poleman, "Income and Food Consumption: Report to the Government of Sri Lanka," Cornell Agricultural Economics Staff Paper No. 73-19, Cornell University, Department of Agricultural Economics, Ithaca, New York, October 1973, Appendix 3.

<sup>a</sup>Excludes liquor and tobacco expenditures.

<sup>b</sup>The provisional data for income groups 0-199 are not entirely consistent with Poleman's data. Sri Lanka, Department of Census and Statistics, *Socio-Economic Survey, 1969-70: Special Report*, Table 2 and Supplementary Table 17.

<sup>c</sup>The expenditures of the first three household groups are not available, separately. The figure for the third group is the average for all three.

TABLE 5.3.3

Per capita food and nonfood expenditures, calorie intake, and protein intake, by income group, 1973

Household Income Group	Monthly Food Expenditure <sup>a</sup>	Monthly Expenditure for All Goods <sup>a</sup>	Ratio of Expenditures on Food and All Goods	Population	Calories	Protein
(Rs)	(Rs)		(percent)			(grams)
0-25	27.49	43.71	63	0.04	1,157	31.8
26-50	19.93	30.52	65	0.29	1,622	31.3
51-100	22.66	37.46	61	2.47	1,752	38.8
101-200	22.37	37.69	59	21.75	1,900	42.1
201-400	26.63	46.03	58	49.46	1,879	43.3
401-800	34.68	67.99	51	21.38	2,049	48.3
801-1,000	49.30	124.37	40	2.05	2,334	62.1
1,001-1,500	53.06	209.21	26	1.54	2,110	53.5
Above 1,500	70.17	237.10	30	1.02	2,276	57.9
Average	28.65	54.87	52	100.00	1,936	44.2

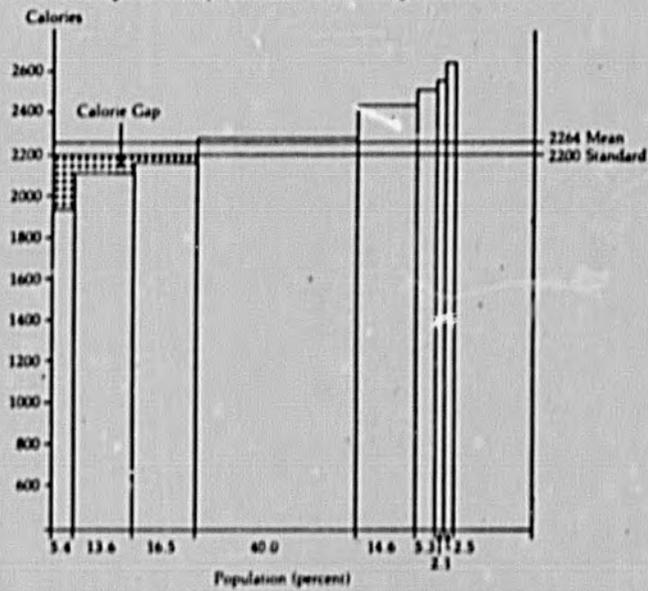
Source: Central Bank of Ceylon, *Survey of Sri Lanka's Consumer Finances, 1973* (Colombo: Swadeshi Printers, 1973), Part 2, p. 609, and IFPRI estimates.

<sup>a</sup>Excludes liquor and tobacco expenditures. The imputed value of the free rice ration has also been deducted from expenditures on food and all goods.

Note: Tables 5.3.2 and 5.3.3. are reproduced from the Gavan and Chandrasekera report cited in the footnote on page 70.

TABLE 5.3.4

## - Per capita daily calorie consumption, 1969-70

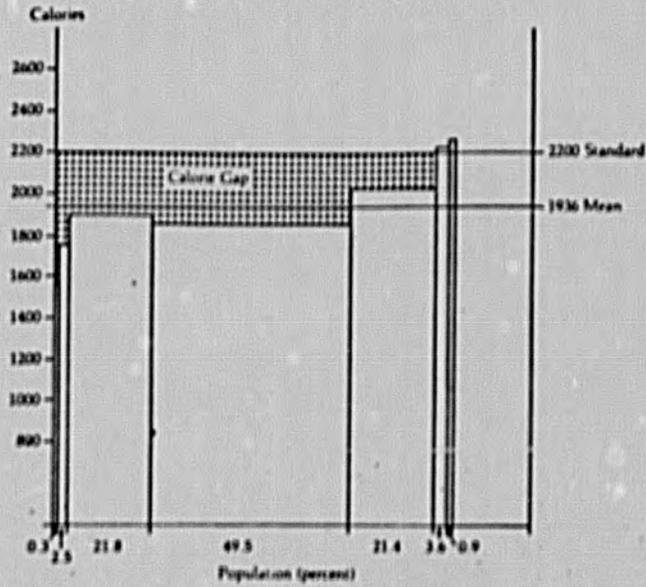


Source: Compiled by IFPRI based on Sri Lanka, Department of Census and Statistics, *Socio-Economic Survey of Sri Lanka, 1969-70: Statistical Tables, vol. 2* (Colombo: Department of Government Printing, 1973).

Note: Table 5.3.4 is reproduced from the Gavan and Chandrasekera report cited in the footnote on page 70.

TABLE 5.3.5

Per capita daily calorie consumption, 1973



Source: Compiled by IFPRI on the basis of Central Band of Ceylon, *Survey of Sri Lanka's Consumer Finances, 1973* (Colombo: Swadewa Printers, 1973).

Note: Table 5.3.5 is reproduced from the Gavan Chandrasekera report cited in the footnote on page 70.

TABLE 5.3.6

## Production and imports of major food staples, 1950 to 1976

Year	Production					Imports				Availability		Self Sufficiency Ratio		
	Rice	Other Cereals	Pulses	Root Crops <sup>a</sup>	Coconuts <sup>b</sup>	Sum <sup>c</sup>	Rice	Wheat and Flour	Sugar	Sum <sup>c</sup>	Aggregate <sup>d</sup>	Per Capita	Cereals	Starchy Foods
	(1,000 long tons)										(pounds/year)			
1950-54	352						426	214	127	764				0.36
1955-59	466						501	218	143	831				0.39
1960-64	653						528	198	178	872				0.47
1965	507					1,037	842	311	218	1,131				0.35
1966	638	27	96	301	411	1,193	485	264	233	982	2,175	426		0.47 0.55
1967	767	34	76	351	874	1,330	348	517	226	1,046	2,395	644		0.46 0.55
1968	901	23	67	378	895	1,483	334	359	220	872	2,355	426		0.57 0.63
1969	920	33	83	355	906	1,525	260	368	374	701	2,426	430		0.60 0.63
1970	1,081	26	75	329	908	1,664	526	369	240	1,099	2,754	478		0.55 0.60
1971	934	26	56	332	970	1,529	331	331	143	894	2,423	614		0.59 0.63
1972	878	26	100	291	802	1,429	262	324	214	790	2,180	367		0.61 0.65
1973	876	34	35	325	585	1,479	338	365	191	857	2,336	386		0.57 0.63
1974	1,072	49	39	643	904	1,745	304	435	42	787	2,532	407		0.61 0.69
1975	772						452	463	73	988				
1976	838						418	386	55	854				

Sources: The data for imports and rice production are from Sri Lanka, Food Commissioner's Department, Personal communication. The data for the production of pulses, root crops, coconuts, and other cereals are derived from Food and Agriculture Organization of the United Nations, *Provisional Food Balance Sheets, 1972-76 Average* (Rome, 1977).

<sup>a</sup>The root crop estimates are particularly unreliable. See text.

<sup>b</sup>Before its consumption.

<sup>c</sup>Base equivalents.

<sup>d</sup>Availability is calculated as production plus imports, in rice equivalents. No adjustment is made for feed, seed, and wastage or for stock changes.

Note: Table 5.3.6 is reproduced from the Gavan and Chandrasekera report cited in the footnote on page 70.

Data on aggregate availability of major food staples between 1966, and 1974 from Table 5.3.6 highlights sharp declines over the early 1970s. Notably the highest per capita availability over the period studied was in 1970 when 478 lbs. of staples were available per person and when rice production was at its peak.

Comparing the per capita caloric and protein intake among low-income Asian countries over the 1966-71 and 1972-77 period, as outlined in Table 5.3.7, Sri Lanka's intake of both calories and protein declined, and even fell below the regional averages over the latter five year interval.

TABLE 5.3.7

Per capita daily calorie and protein intake  
in low-income countries in Asia, 1966-71 and  
1972-77

Country	Calories		Protein	
	1966-71	1972-77	1966-71	1972-77
Bangladesh	1,974	1,932	43	42
India	1,958	1,964	49	49
Pakistan	2,136	2,230	59	61
Sri Lanka	2,306	2,071	46	42
Indonesia	1,895	2,080	40	43
Thailand	2,286	2,232	49	50
Philippines	2,062	2,139	49	51
Malaysia	2,454	2,559	51	54
Average	2,134	2,151	48	49

Note: Table 5.3.7 is based on data in the Gavan and Chandrasekera report cited in the footnote on page 70.

5.33 NUTRITION SURVEYS AND SURVEILLANCE

5.331 Examining nutritional status using anthropometric measures, several small scale community nutrition studies undertaken in the late 1960s and early 1970s highlighted widespread undernutrition ranging from 66 to 83% of the children surveyed. The most comprehensive information, however, derives from a national survey undertaken in 1975 by the Ministry of Health with technical assistance from the Center for Disease Control, U.S. Department of Health, Education and Welfare.

The 1975/76 Sri Lanka Nutrition Status Survey's objective was to measure the prevalence of undernutrition, anemia, and Vitamin A deficiency in the rural preschool population. The survey collected the following data: age, weight, height and arm circumference; hemoglobin levels; and presence of Bitot's spots, corneal scars and night blindness as ascertained by clinical examination. The survey, included 13,450 rural children 6 to 72 months of age, selected on a proportionate district population sampling basis

from 1971 Census data. It represents the first nationwide assessment of child nutritional status.

The results strikingly illustrated the pervasiveness of undernutrition as expressed in deficiency in weight-for-height or height-for-age, according to the Waterlow classification (see Table 5.3.8). The weighted average Sri Lankan prevalence rate for wasting (6.6%), stunting (34.7%) and both (3.4%) varied between Superintendent of Health Services (SHS) areas and significantly between the rural village and estate sectors, with the latter having consistently the highest proportion of children severely affected. 1/ Examining weight-for-age, using the Gomez scale, 91% of children studied demonstrated some degree of undernutrition with the combined prevalence of second and third degree malnutrition ranging from 38.9% in the villages surveyed to the critical level of 63.8% among estate children (see Table 5.3.9) 2/

Overall, the high prevalence of chronic undernutrition in Sri Lanka which the survey revealed is significant from a programmatic intervention standpoint. Chronic undernutrition or stunting implies past and long-term nutritional inadequacies of food supplies, which deprivation has retarded linear growth. The role of chronic diseases in stunting growth is not fully understood in nutrition. At the same time, chronic undernutrition does not attract policy attention as much as acute undernutrition because

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1/ Wasting means that weight-for-height was less than 80% of the U.S. National Academy of Science (NAS) reference standard. Stunting refers to a height-for-age less than 90% of the NAS standard.

2/ Second degree = weight-for-age of 60-9% of NAS reference standard.  
Third degree = weight-for-age less than 60% of NAS reference standard.

TABLE 5.3.8

PREVALENCE OF ACUTE AND CHRONIC UNDERNUTRITION  
 BY SHS AREA AND SECTOR, SRI LANKA - 1975/76

<u>SHS 1/ AREA</u>	<u>% of Acute undernutrition (wasting)</u>	<u>% of chronic undernutrition (stunting)</u>	<u>% of concurrent wasting and stunting</u>
Kandy	8.5	49.6	5.5
Badulla	5.8	49.4	4.0
Kegalle	7.1	39.6	4.0
Matale	7.2	38.9	3.8
Ratnapura	8.8	37.3	4.1
Batticaloa	8.4	36.5	4.0
Galle	8.2	33.3	4.1
Anuradhapura	6.9	30.7	2.9
Kurunegala	5.7	30.4	2.3
Matara	6.0	29.7	2.2
Vavuniya	5.8	29.6	2.3
Jaffna	3.7	28.4	1.6
Kalutara	6.2	26.8	3.4
Puttalam	5.1	24.4	1.9
Colombo	4.9	20.7	1.9
Weighted avg. - Sri Lanka	6.6	34.7	3.4
<u>SECTOR</u>			
Village	6.3	30.8	
Estate	8.6	62.4	
Weighted Rural average	6.6	34.7	

1/ Superintendent of Health Services Area.

SOURCE: Compiled from GEL CDC Nutrition Survey 1975/76, Tables 2,4,6.

TABLE 5.3.9

PREVALENCE OF UNDERNUTRITION

## Village and Estate Sector Children

(Expressed as Percent of NAS reference median weight-for-age)

Sector	Normal (90.0+)	1st degree (75.0-89.9)	2nd degree (60.0-74.9)	3rd degree (60.0)	No. of Survey Children in Sector
Village	10.1%	51.0%	35.8%	3.1%	12,301
Estate	2.9	33.3	54.7	9.1	1,130
Total-Rural Sri Lanka (weighted)	9.2	48.8	38.2	3.9	13,450

Note: Chart uses the Gomez Classification of Malnutrition

SOURCE: Sri Lanka Nutrition Status Survey, 1975/76  
Table 18

compared to the latter, morbidity and mortality is not likely to be as measurable or evident. Because of the incipient nature of chronic undernutrition, solutions will necessitate long-term commitments to improve food consumption while benefits to accrue from targeted interventions will not immediately be measurable or visible, except over the course of several years. 1/

5.332 Some Methodological Issues

There has been some feeling that the 1975/76 survey data may reflect the special critical economic conditions which prevailed during the early 1970's. During that period, economic stagnation associated with the nationalization of estates, very high unemployment, poor harvests, and sharp increases in the prices of imported staple foods all contributed to a significant decline in nutritional status. Consequently, it is argued that the conditions associated with the changes in the food ration/subsidy scheme over the 1976-79 period are not the same as those prevailing in 1972-75. Further, the potential policy impact of the survey has been weakened by the failure to include the urban areas (which represent 20% of the population). The few periurban studies which are available, although small, indicate that the nutritional situation of urban children may be worse than that of their rural cohorts.

Whereas the 1969/70 and 1973 consumption surveys indicated a significantly higher average caloric and protein consumption in the estate sector than the urban or rural sectors, the results

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1/ See Sri Lanka Nutrition Status Survey, p.53.

of the 1975/76 nutrition survey highlighted particularly pervasive undernutrition among the estate population. These discrepancies lead one to question the validity of using consumption data alone as a measure of nutritional status. The differences between estimated intake and studied outcome as expressed in nutritional state (using either the Gomez or Waterlow classifications) raise questions about (1) how the calorie and protein consumption figures were computed and (2) familial food distribution patterns. Additionally, the variance may be due, at least in part, to the generally poorer health status and low health service coverage among the estate population, both of which influence nutritional state.

Immediately following the 1975/76 nutrition survey, nutrition surveys were carried out by the Medical Research Institute, Ministry of Health in 120 villages which had formed part of the original survey sample. The representativeness of this smaller sample study was challenged by WHO and data have not, therefore, been disseminated.

The absence of a comprehensive and continuing national nutrition surveillance system precludes timely and effective analysis of nutritional status and, concomitantly, identification of population "at risk". The Medical Research Institute (MRI) of the Ministry of Health is currently embarking on special surveys collecting nutrition and socio-economic data for eight districts selected by the Government for integrated development. The surveys, using two stage sampling, will cover 2% of the districts' villages and 10% of the households within these districts.

Preliminary analysis of data from the MRI's survey in two districts indicates an almost identical nutrition profile to that obtained in the 1975/76 survey. But other health personnel indicate that the apparent consistency in the pattern of undernutrition may be the result of other factors such as improved health services and education which have stabilized the situation.

The current approach to nutrition surveillance, however, raises several methodological issues. Tracking of nutritional status since 1975 has been characterized by the conducting of sporadic, fragmented studies to meet specific, narrow information needs. What has been officially termed "surveillance" has been in actuality nothing more than assessment of prevalence of undernutrition at one point in time. Further, Government supported nutrition assessment has been largely limited to anthropometric measurements and clinical examinations of children in selected areas to the virtual neglect of collection and analysis of other key surveillance indicators such as food prices, food availability, and health status, birth weights etc. It is understood that the MRI's current studies are to be used solely to establish a "baseline" by which the impact of the new integrated development projects can be assessed on a periodic basis. There is no

plan to use the new information to target specific individuals or groups for either nutrition or health interventions.

Administratively, the MRI has insisted on using Public Health Inspectors (PHI) to conduct the field survey work on the grounds that they participated in the GSL/CDC 1975/76 survey and are, thus, the best qualified (and the most "accountable" if they do not do the job well). The decision to have PHIs rather than the Public Health Midwives (PHMs) undertake these surveys appears arbitrary and counterproductive, and needs to be reassessed. In contrast to the recognized role of the PHIs in environmental sanitation, health education and communicable disease control, the PHMs' focus on maternal/child health makes this the logical personnel cadre to undertake surveillance activities including weighing and examination of children at the community level. Further, the current population coverage of the PHM of 10-15 villages versus the typical PHI catchment area of three to four times that amount favors utilizing PHMs for these surveys. Importantly, assigning nutrition responsibilities to the PHI overloads him and diverts him from his priority environmental sanitation and health education responsibilities which only he can do and which are essential, and complementary, inputs for achieving desired reductions in morbidity and mortality.

At the same time, village volunteers, including mothers, have proven to be a valuable, largely untapped resource in several countries for carrying out nutrition surveillance, particularly the regular collection

of anthropometric measurements. <sup>1/</sup> The excellent Sri Lankan experience with using volunteer malaria workers for taking blood smears and dispensing drug treatments indicates the potential for mobilizing and successfully implementing community nutrition surveillance through the proposed new village health worker scheme. Further, the level of education of the typical volunteer (who has completed an average of 10 years of schooling) is much higher than that of volunteers in other countries who successfully have organized and managed child weighing programs. Such an approach is also responsive to the serious shortage of public health staff throughout the country and the Government's commitment to decentralization and enhanced consumer participation in programs.

In the communities currently covered by the volunteer health worker program of the Health Education Division of the Ministry of Health, in which weighing of children is currently being regularly undertaken, the Health Education Division of the Ministry of Health indicates that coverage has been 100 percent of the targeted children. That Division identified the shortage of scales and equipment for anthropometric measurement as the chief constraints to expanding the nutrition surveillance component of the village volunteers program. At the same time, volunteers interviewed by our team indicated a desire to do more in nutrition. In Kendaradagama, in fact, the volunteers identified the food situation as the key problem currently facing their village. Nutrition activities should, therefore, be strengthened and expanded within the village health volunteer activities of the Ministry of Health.

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<sup>1/</sup> Such community-based weighing programs have been successfully implemented in Colombia, the Philippines and Indonesia. The Nutrition Advisor Asia/TR is pouching information on these three programs to the mission under separate cover.

Given the high literacy rate in Sri Lanka, increased attention to community nutrition education is both appropriate and promising. A recently developed manual on nutrition for community health workers, prepared in Tunis under WHO sponsorship in late 1979, outlines appropriate tasks which this level of health worker should perform and might be a useful base from which to evaluate the most appropriate design for such a component within the primary health care setting in Sri Lanka.

5.34 FOOD AND NUTRITION PROGRAMS

Government nutrition interventions commenced during World War II when food was made available to the bottom 40% of the population. In fact, a consensus exists that free education, free health services and food subsidies and rations have been the principal factors in raising the national physical quality of life index (PQLI) to 82 out of a 100 - one of the highest rates in the developing world. Since the 1970's, direct government nutrition interventions specifically targeted on reducing under-nutrition among the vulnerable population groups have included the food ration/subsidy scheme and most recently the food stamp program and two large food supplementation programs carried out with the assistance of CARE:

5.341 The Food Stamp Program

The food stamp program introduced in September 1979 represents a major change in Government nutrition support, and implicitly at least, a shift in national priorities. Impetus for the move from a food subsidy/ration to food stamp program reportedly came principally from two factors: 1) increasing Government concern over extensive abuse of the ration book system; and 2) the tremendous recurrent cost burden of the subsidy/ration program which represented an average annual outlay of 13% of the govern-

mental operating budget during the 1970s. 1/ An analysis of ration book holders indicated that in many districts population coverage was more than 90%. Amidst limited national resources and priority financial commitments to agricultural, industrial and selected sector development programs, the Food and Cooperatives Minister, S.B. Herath recently announced that, "Subsidies can no longer be extended by the Government. . . We are not in a position even to increase the value of food stamps allocated to each person." 2/

Under the new program, eligible households receive free stamps which serve as money to purchase food and kerosene. For food, the monthly household allocation is Rs. 15 per adult, Rs. 20 per child between 8 and 12 years of age, and Rs. 25 per child less than 8 years. The value of the kerosene stamps is Rs. 9.50 per month per household. To preclude the substitution of kerosene for food, food stamps cannot be used to purchase kerosene although it is understood that the kerosene stamp can be cashed for food.

The second major part of the recently adopted food policy has been to remove, in most cases gradually, the subsidies on the market prices of staple foods so that consumer prices will reach the true world prices of these basic commodities. This shift away from subsidies is viewed as essential to provide domestic producers with adequate economic incentives to increase output and, thus, move the country toward the stated national goal of self-sufficiency in food by the end of this decade.

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1/ USAID Summary of Government of Sri Lanka expenditures, by economic sectors, April 1980.

2/ Quoted in "Weekend", Colombo, Sunday, April 6, 1980, p. 8.

Although still in its nascent stage, the food stamp program appears to be experiencing some problems. The program limits eligibility to persons with household incomes less than Rs. 300 per month, a cutoff figure which it was expected originally would hold program coverage to 5 million persons. Preliminary results of the Central Bank's 1978-79 Household Socio-economic Survey indicated, however, that the 1978 national median spending unit income per two months was Rs. 535. With those figures translating into approximately 7.5 million persons economically eligible, the Government sought to verify the results. Rather than reducing the beneficiaries, that check actually increased the eligible population by another 0.5 million. In response, the Government decided to hold coverage to a maximum of 7.5 million persons. Thus, reportedly persons who did not qualify for stamps at the inception of the program but in which households a worker subsequently has become underemployed or unemployed cannot receive food stamps although members of the household meet the below 300 Rs. per month income eligibility requirement.

Preliminary results of a World Bank analysis of Sri Lanka's food prices and food stamp program highlight that in terms of income transfer, the food stamp provides more cash value than the previous food ration program, particularly for the larger families participating. <sup>1/</sup> In general, for the bottom decile of household income groups, the food stamps represent transfers expressed as a fraction of mean per capita expenditure of almost double that received by the fourth decile of households.

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<sup>1/</sup> Preliminary draft by Marcelo Solewsy, "Food Prices and the Indexing of Food Stamp Program in Sri Lanka: An Evaluation of the Trade-offs," April 1980 (Internal Working Document, World Bank).

Nevertheless, the equity of the decision to use a Rs.300/- per month household income as the criteria for eligibility is in question. As the World Bank study indicates, the present food stamp eligibility criteria discriminates against poor large families.<sup>1/</sup> Analysis of the 1969-70 Socio-economic Survey data on nutritional status by income groups, the latest years for which such information is available, shows that per capita income is a reasonably good "indicator" of malnutrition with 43% of malnourished persons residing in households in the lowest ten percent of income groups.

Using household income criteria alters the beneficiary population reached. When ranked according to per capita income or per capita expenditure, the poorer families are also the largest families. Since, however, household income may increase with family size, the poor but largest families are excluded from the food stamp program whenever the aggregate household income exceeds Rs.300./month. Thus, in effect, among households with the same per capita income, those whose monthly income is below Rs. 300 get a number of stamps equal to their household size while families of a larger size and, hence household income above Rs. 300, get none. If one accepts that poverty and malnutrition are associated with per capita purchasing power, then as the IBRD study concludes, the choice of household income as a "locator" of poverty and criteria for food stamp eligibility is a bad choice, at least in the case of Sri Lanka. Alternatively, the study recommends that families with equal per capita income, e.g., purchasing power, receive equal stamp income transfers. <sup>2/</sup>

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<sup>1/</sup> Ibid.

<sup>2/</sup> Ibid, p. 23 - 25.

The limitations of the current eligibility criteria were also highlighted in a survey of 186 mothers of malnourished children attending the nutritional outpatient clinic of Colombo Children's Hospital. The survey, conducted in December 1979 in conjunction with the IBRD food stamp study, indicated that while 56% of mothers interviewed had monthly household incomes below Rs.300, only 77% of this 56%, were receiving food stamps. The significant gap (23%) between need and access was largely due to the fact that the mothers resided in an extended family household. Therefore, although the nuclear family met the below Rs.300 criteria, the combined income of both households exceeded Rs.300 and rendered them ineligible.<sup>1/</sup> While the sample was not statistically derived, health professionals informed our team members that this situation is fairly representative.

Even among households participating in the food stamp program, however, inflation threatens to erode the benefits. The recent Central Bank's consumer price survey indicated that food prices rose over the 1973 to 1979 period faster than the overall consumer price index. Rapid inflation has continued in 1980 as highlighted in the local daily newspapers during our team's visit.

The recent World Bank study emphasized that the monetary value of food stamps would have to be increased, consistent with the food price index, if the purchasing power and nutritional status of households receiving stamps since the 1979 program commencement were to be maintained. At the same time, the study recognizes that this recommended indexing, with population coverage maintained at present levels, represents substantial

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<sup>1/</sup> Ibid.

increases in Government fiscal outlays. The study thus identifies, for GSL consideration, a series of policy options with regard to setting consumer food prices (food subsidies) and to altering stamp inflation indexing by income group. <sup>1/</sup>

Current assessments of the nutritional effect of the switch in food program focus are based largely on fragmented impressions. During our team's field trip, public health, university, and private sector health personnel consistently cited anecdotal evidence of an emerging food and nutritional crisis as the recent shifts in Government policy, coupled with high inflation, have placed traditional staple foods out of the economic reach of the poorest subgroups of the population. One major change noted has been the sharp drop in bread consumption in the rural areas. Bread prices have almost doubled over the past year as the Government removed the subsidy in an attempt to reduce wheat flour import demands on foreign exchange. The extent to which the nutritional gap from reduced consumption of wheat flour among low-income groups is being filled by substituting rice and other grains has not been assessed to date. Many health professionals interviewed during the team visit indicated that the gap has not been completely filled by rice, due to concurrent rises in rice prices. The bread experience demonstrates strikingly the direct and immediate nutritional vulnerability of the population to changes in government food policy. However, study of the critical relationship between Government subsidies and Sri Lankan food consumption patterns and their impact, ultimately, on nutritional status does not appear to have been given high priority. Without such prior analysis, the institution of new Government food policies can exacerbate the already precarious nutritional situation in the country.

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<sup>1/</sup> Ibid.

5.342 The Thripasha Program

The thripasha program, initiated in 1972, and collaboratively carried out by the Ministry of Health and CARE, provides a nutritional supplementary food containing essential energy (calories), protein, vitamins and minerals. As originally conceived, the program was proposed by CARE to develop a nutritional weaning food made exclusively from indigenous food-stuffs fortified with essential vitamins and minerals. To demonstrate project feasibility, the weaning food was developed and successfully field-tested. It included wheat soya blend, non-fat dried milk and rice flour. The initial programmatic focus however, was the distribution of Wheat Soya Blend, a U.S. Government P.L. 480 Title II commodity, packaged in one and one-half pound bags to 42,000 persons at nutritional risk (as defined by the Ministry of Health).

Presently the health system selects the recipients, targeting the supplement on malnourished and "at risk" preschool children and pregnant and lactating mothers. Supplements are received largely through 700 distribution points in the health system and 450 estates. Current program coverage includes 550,000 preschoolers and an estimated 240,000 pregnant women per year. As of mid-1979 over 29 million packets of thripasha reportedly had been distributed throughout Sri Lanka. 1/

Thripasha provides at least 25% of all recommended nutrient allowances for pregnant women, with the exception of

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1/ CARE Programs in Sri Lanka, prepared by CARE Office, Colombo, 1979.

energy, which is obtainable from cheap local foods. It provides a daily food protein supplement of 50 grams. Under the current program design it is anticipated that if at least 150 days of supplementary feeding can be provided to pregnant women, this feeding constitutes an additional 20,000 calories consumption, and should represent an approximate weight gain of 20 lbs. and a 5-1/2 lb. baby.

Nutritional education is reportedly an integral part of the CARE-assisted thriposha program. Relevant health and nutrition educational materials in the form of posters, brochures, and booklets with messages aimed at preventing the interrelated problems of malnutrition, infection and excessive births are being developed and published through CARE and used in the national maternal/child health programs.

The three month shelf-life and the adaptability of the product to individual preparation preferences are key advantages of thriposha over other supplementary foods tested elsewhere. In fact, a primary goal of the thriposha program is to provide a totally indigenous product. In support of the Government's desire to reduce national dependence on imported foodstuffs, CARE is now using locally grown soya and corn for 25% of product input. With increasing program commodity support by the Government of Sri Lanka in the form of local cereals, and a planned phased decline of P.L. 480 commodities beginning in 1981, CARE expects that the long-term goal of producing a 100% domestic supplementary food will be attained by 1988.

CARE highlighted two constraints to thripasha program expansion: "lack of a community development orientation"; and limited production capabilities. <sup>1/</sup>

Community involvement is viewed as essential to expand coverage, given the limited potential for increase of the already sizeable Government financial and human resource commitment to the program. The positive CARE experience in collaborating with the Sarvodaya movement, a private community organization, in the distribution of thripasha through its community kitchen program (although on a small scale), demonstrates that community participation is both possible and an effective mechanism for strengthening program impact. The value of efforts to mobilize such input on a broader scale have been recognized but not systematically undertaken to date.

In an attempt to raise production levels, CARE, in cooperation with the U.S. Department of Agriculture (USDA) introduced a low-cost extrusion cooker plant (LEC) for thripasha in Kundasale in March 1976. An evaluation of that activity in March 1977, organized by USDA, concluded that the Sri Lanka installation had not demonstrated its capacity to meet production schedules and operate at low expense. While by 1978 the operating efficiency of the Kundasale plant had improved substantially, capacity was still insufficient to meet needs. Therefore, the Ministry of Health and CARE undertook the construction of a new thripasha processing complex to handle production requirements for 600,000 recipients

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<sup>1/</sup> CARE Program Outline, 1970, p. 8.

annually as well as demands generated by a newly planned commercial distribution program. That plant, 11 miles north of Colombo, began operations in late 1979.

A ceiling of 600,000 recipients has been set as the maximum effective level for distributing thriposha through the Ministry of Health's maternal/child health program infrastructure. CARE and the Ministry of Health have estimated, however, that as many as one million preschoolers may be malnourished or nutritionally at risk. <sup>1/</sup> With MCH centers, estates, institutions and primary schools currently operating at near capacity, alternative delivery models have had to be explored to reach the balance of those in need of a nutritional supplement. In response, CARE is embarking on a commercial distribution plan for thriposha. Initial consumer acceptance trials undertaken in 1977 by CARE, USDA, and Lever Brothers (Ceylon) indicated a high acceptability of the product when packaged in one pound sizes. In a more recent 8-month market analysis study by Texas A&M, through an agreement with USDA, it was found that the proposed price of Rs.5.5 per lb. is one at which it will sell, create sufficient demand (level of sales) to support increased production, and reach the desired consumers--lower economic level groups. The appropriateness of actively pursuing a commercial distribution program, whose express purpose is to expand substantially product demand, should be examined in light of the current distribution problems highlighted below.

Several distribution problems constraining thriposha program effectiveness were reported to the HPN review team. Throughout

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<sup>1/</sup> Ibid.

health facilities visited by the team, recent gaps of several months in receipt of programmed thriposha supplies were common. At the MOH Office, Kurunegala, the wall chart documenting numbers of recipients was strikingly blank for February, March and April when reported production problems cut off supplies entirely. The situation was the same at the S.H.S. Office, Kegalle. The lack of thriposha among targeted beneficiaries in Kegalle was corroborated by a recent ad hoc survey in a small village conducted by Dr. Priyani Soysa, Professor of Pediatrics, Colombo Children's Hospital. The study indicated that not a single family had any thriposha although adequate supplies were available at the area MOH office. The most striking evidence of thriposha distribution problems, however, is in Colombo itself where the Children's Hospital has been without supplies for the past three months. More than 150 children attending the weekly nutrition clinic at the hospital have had no nutrition supplement over this period. If thriposha supplies are not reaching this hospital in the capital, the reported availability of the supplement to beneficiaries island-wide must be verified.

Current reporting procedures for monitoring thriposha distribution are also reportedly weak. In an attempt to improve information collected on beneficiaries, CARE recently instituted a new ledger book reporting system. But amidst serious staff shortages at facilities to meet even pressing direct patient care needs, institutions may not be able to consistently and carefully complete the accounting book.

Inadequate district storage facilities also hamper achievement of program coverage targets and yet have not apparently been sufficiently addressed. As presently designed, distribution is the responsibility of the local office of the Medical Officer of Health at which storage facilities are minimal, if existent at all. Many MOHs in fact do not work at fixed clinics at which thriposha can be stored; and their homes are too small to realistically serve as storage sites. Further, it is not uncommon for health personnel to have to travel by bus and then walk several miles to reach the communities at which distribution is targeted. Carrying heavy bags of thriposha is burdensome and understandably rarely done. As a result, many of the remote villages where the need is the greatest continue to remain unserved.

Logistical weaknesses and continuing inspection problems in the thriposha program were also reportedly highlighted in a recent letter from the Ministry of Finance to the President of Sri Lanka excerpting the report of a 1979 program review by the Overseas Food Division of the U.S. Controller General's Office.

At the same time, a major change in the form of delivery of thriposha to recipients is being planned. Since the program's inception in 1972, 80% of the thriposha recipients have received a take-home allocation. The program's nutritional impact on the target population has been reduced by the common practice of recipients sharing the thriposha with non-targeted family members. To redress the familial distribution problem, CARE, in conjunction with the Government, has recently decided to shift to on-site feeding, where feasible. While theoretically sound as a means to ensure coverage of the targeted

- beneficiaries, several problems threaten the successful implementation of this alternative delivery model. First and foremost is the increased service provision such a program will demand from already human-resource scarce health facilities. During our team's field visits, health staff repeatedly stressed the need for mobilizing volunteers if on-site feeding were to be instituted. Further, food preparation is an inevitable bottleneck in facilities characterized by lack of water and serious overcrowding. The logistics of preparing and distributing the food must be carefully considered relative to take-home feeding. Third, given the ethnic heterogeneity of the population, and caste divisions within ethnic groups, the feasibility of feeding beneficiaries together is not clear. On-site supplementary feeding experiences from other countries have not proven to be universally economically viable and highlight the need to pilot-test this proposed scheme to assess the comparative advantage of off-versus on-site feeding.

Other problems identified during the sector review relate to inadequate collaboration in program decision-making between CARE and Government officials. Recent changes in thripasha product formulation for example have had an unexpected, negative health impact. Until late 1979 thripasha supplements of 100 g/day/child were given with excellent results by Children's Hospital, Colombo for treating undernutrition in all children who were lactose intolerant. Especially for these infants this milk-free product had proven to be a cost-effective alternative to Soybee (which at Rs. 38 a tin poses a severe economic burden

for poor mothers). With the recent addition of milk products to the production process, however, thriposha can no longer be used therapeutically in this population group and the only available alternative, Soybee, must now be purchased outside the hospital for administration in such cases. The establishment of a soy milk factory at Anuradhapura, discussed later, may be a solution to the cost problem ultimately.

While the CARE program is ostensibly being carried out under the overall direction of the Ministry of Health, communication and coordination between some key government officials and CARE nutrition personnel appear to be strained. In team interviews, several health officers expressed concern over whether this expensive and theoretically stop-gap supplementary feeding intervention actually was benefiting the target groups it proposed to reach.

Over the eight years of operation of the thriposha program, no comprehensive impact analysis has been undertaken. Examination of data from the 1975/76 national nutrition survey comparing thriposha recipients with prevalence of undernutrition, by district, (Table 5.3.9) indicated that participation in this supplementary feeding program, in fact, tends to be least where the prevalence of malnutrition is the greatest. Caution must be exercised, however, in interpreting this as a cause and effect relationship. As the Nutrition Survey highlighted, information on participation rates in the thriposha is additional data, but not necessarily related to the prevalence of undernutrition. The fact that the lowest

TABLE 5.3.9

COMPARISON OF PREVALENCE OF UNDERNUTRITION  
AND PARTICIPATION RATES IN THE THRIPOSHA  
PROGRAM BY S.H.S. AREA, SRI LANKA 1975/76

<u>S.H.S. AREA</u>	<u>PREVALENCE BY RANK OF UNDERNUTRITION 1</u>	<u>PERCENTAGE OF THRIPOSHA PARTICIPATION 2</u>
Kandy	1	18.7
Ratnapura	2	4.6
Matale	3	5.2
Kegalle	4	8.3
Badulla	5	9.3
Batticaloa	6	5.1
Galle	7	5.7
Anuradhapura	8	17.6
Matara	9	5.2
Kurunegala	10	9.2
Vavuniya	11	27.1
Kalutara	12	9.1
Puttalam	13	7.3
Jaffna	14	26.1
Colombo	15	27.1

1 Ranking from highest to lowest prevalence, by combination of study findings by SHS combining prevalence of weight-for-height, height-for-age, and weight-for-age.

2 Percentage of children surveyed participating in thriposha program at time of survey.

Source: Sri Lanka Nutrition Status Survey (September 1975-March 1976)  
Center for Disease Control, HEW, in cooperation with  
Ministry of Health, Sri Lanka

prevalence of undernutrition was generally in the areas with highest participation may mean either: 1) that despite participation children would have been in these relatively well-nourished groups (and do not need the supplement) or; 2) the supplement has been effective in reducing malnutrition among recipients. To adequately assess the impact of this supplementary feeding program on nutritional status, information on the length of program participation, availability of thriposha, quantity consumed by the child, and the prevalence of undernutrition should be obtained.

A follow-up study to document program progress in reaching the target population now appears crucial. Most of the preschool children found undernourished in 1975-76 are now primary school children, whose participation in the biscuit program is determined by the overall nutritional state of the school's children, as a group. If the long-term goal is to reduce the need for school feeding, it is essential that undernutrition be reduced significantly in infants and preschoolers. The ability of the thriposha program to reach those in greatest need (including pregnant mothers) as a "preventive" rather than curative program, will have a key impact on whether supplementary feeding will become a permanent institution or a short-term measure to redress undernutrition. Clearly, in light of the significant constraints to program effectiveness outlined above, the entire program design, coverage, and proposed policy changes need an immediate evaluation, and program strengthening and/or modification, as appropriate.

5.343 The School Feeding Program

Begun in 1956, the Primary School Partnership Nutrition Program, currently managed by the Nutrition Feeding Unit of the Ministry of Education in cooperation with CARE, provides biscuits to children in kindergarten through grade 5 at 7,700 selected school sites. The program is the oldest and most extensive CARE intervention program in Sri Lanka, with FY80 coverage including 1.3 million malnourished primary school children.

The program seeks to respond to the documented chronic undernutrition or stunting in the 5 to 10 year age group as well as improve overall health and learning ability and promote school attendance. A 1975 study by the YMCA Colombo, sponsored by UNESCO and the International Bureau of Education, indicated that only one-third (32%) of children in the poorest school districts in Colombo finish sixth grade, with high drop out rates at fourth grade attributable to poverty and malnutrition. Each recipient is provided a daily ration of protein-enriched biscuits (cookies) produced for the program specifically by two Colombo manufacturers. The project activity targets, as outlined below, are aimed at achievement of a 50% reduction in the primary school child nutrition gap by providing 190/260 calories and 6/8 grams of protein.

<u>Targets</u>	<u>FY80</u>	<u>FY81</u>	<u>FY82</u>
Beneficiaries	1.25 M	1.3 M	1.35 M
Ration	44/50 g	50/55 g	60 g
No. of School Days Provided	180	180	180

The Government's substantial commitment to the school feeding program is highlighted by the fact that throughout its history, the Ministry of Education has committed 25 to 30% of its non-salary recurrent budget to program implementation. The FY78 budget alone amounted to US\$1.6 million. The high level of budgetary support has had an indirect benefit as well in promoting the development of Sri Lankan food companies to respond to increasing biscuit manufacturing needs.

The Ministry of Education has attached high priority to expanding program coverage to all primary schools. The 7,700 primary schools currently participating represent 82% of those in the country. Recipient schools were selected on the basis of a 1973 National Census of the Nutritional Status of School Children which identified "school units" at risk. Because it was not viewed as feasible to selectively feed children, a decision was made to conduct feeding programs only in those schools in which the prevalence of undernutrition was greater than 40%. As a result, even severely undernourished children who happen to attend schools in which children, on the average, were not seriously affected have been prevented from receiving the biscuits.

An estimated 700 schools have been constructed since the 1973 survey. Most of these new schools are in poor rural areas. With the exception of 300 estate schools nationalized in 1976/77, however, no new schools have been admitted to the program.

A program evaluation conducted for USAID in April 1978 by Robert Nathan Associates found that the daily biscuits (cookies) are acceptable and popular among primary school children; and that the school network was effective in reaching malnourished children in this age group.

Nevertheless, the nutritional impact of school feeding programs has been the subject of continual debate among experts worldwide. Within Sri Lanka Team contacts suggested that the supplement has had a positive effect in maintaining present nutritional levels, but it has probably not significantly raised the nutritional status of most school children. Since some studies have indicated a progressive fall in nutritional status in the pre-schoolers (children aged 5-10),<sup>1/</sup> the current method of selecting schools for the feeding program may discriminate against a particularly vulnerable segment of the population. The rationality of this approach clearly needs reviewing. At the same time, since most schools have no school nurses, increased emphasis should be placed on training and encouraging teachers to screen children and identify and identify those in need of nutritional supplements.

The key project constraints identified by CARE have been:

- 1) the capacity of the two biscuit factories to increase production a) to meet the planned augmentation of the protein ration; b) to cover additional schools

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<sup>1/</sup> 1975 Colombo Hospital Study, as reported in "CARE programs in Sri Lanka," CARE Office, Colombo, 1979, p.2

not presently included in the program; and  
2) the low level of direct community participation and support of the program. With regard to the latter, the program plan calls for increased attention to enlisting community groups such as Parent-Teacher Associations to complement the biscuit program with fruits and other locally available foods which can also serve as dietary supplements for this nutritionally vulnerable population group.

Another major new initiative for FY80 is the provision of scales and weight registers to participating schools to monitor child growth. This surveillance component of the program should contribute to improved management control and impact analysis.

The program is moving toward consumption of the entire biscuit ration on-site. As in the thriposha program, the 40% of the biscuits consumed at home tend to be shared with brothers and sisters. In the intermediate phase, an estimated 85% of children will consume the biscuits in the classroom, supervised by teachers.

5.344 The Milk Distribution Program

Despite the significant distribution problems facing the existing supplementary feeding programs, considerable political pressure is building for initiating a free milk distribution program for preschoolers, to be conducted through the Ministry of Health, for which external support of \$1.4 million a year is being sought. Several key officials have cautioned against moving too fast in launching this feeding program until a thorough study of the local management and distribution requirements and, importantly, administration and transport costs have been ascertained.

A special expert committee of the Food and Nutrition Policy Committee of the Ministry of Plan Implementation met three times to discuss the appropriateness of a free milk program and finally advised against it. Nevertheless, the President decided to institute the program and has directed the Ministry of Planning and Finance to obtain external funding. To date little progress has been made toward implementation. An interagency meeting held in March with potential donors highlighted that milk distribution is of questionable nutritional value and is no longer within the programmatic priorities of most of the United Nations System. The World Food Program, while reluctant, has agreed to consider the possibility of a modest free milk program in a few districts to serve as a pilot for testing project feasibility including logistical requirements to make it operable.

A WHO nutrition consultant has discussed the Presidential request with national authorities and a technical report with recommendations is expected to be released soon. Preliminary discussions with WHO by team members indicated that rather than using the health system for milk distribution, the advisory report would suggest that delivery be through cooperatives with stamps used to subsidize milk for those in need and economically unable

to purchase it. In the interim, it appears that it would be useful to determine the prevalence of lactose intolerance in children since statistics of the Colombo Children's Hospital indicate that secondary intolerance is a problem in a significant number of children admitted for diarrhea treatments. Without sufficient study of this phenomenon in the proposed preschool target group, the desired milk program may, in fact, have the undesirable effect of increasing diarrheal incidence and thus the demand for health services. UNICEF has also offered assistance in the conduct of surveys and studies related to the proposed milk program.

5.345 Other Nutrition Programs

Several soybean initiatives currently underway in the country may have a direct positive impact on the nutritional situation. The UNICEF supported soya project has focussed on the promotion of soya beans at three levels - commercial, village, and home. Production capacity is adequate and capacity exists to double soya acreage over the next year. Nevertheless, village and home consumption demand for soya, upon which the economic feasibility of its production depends, has been increasing very slowly and has been, in the short-term, the principal program constraint. Program managers are currently optimistic, however, that increasing promotion and receptivity to soya within the commercial sector will give production the demand boost it needs to be a viable undertaking. An extensive UNDP/Illinois Insoy Program is also underway.

The feasibility of using soya to fortify Prime Mill's wheat flour is also under debate in Government circles, based on the dual justification of enhancing nutritional intake and, importantly, saving precious foreign exchange by reducing the import level of expensive wheat flour. While technically possible for soya to comprise 12% of the flour mixture, a 5% fortification level has been recommended. However, the necessary capital investment for machinery to effect the proposed fortification is not yet identified. In the face of falling coconut production and concomitant price increases in this traditionally staple food, substitution of soya milk for coconut milk is being promoted. To this end a soya milk factory recently has been established at Anuradhapura.

The team was unable to ascertain the Government's official position on exploring the production potential for alternative consumption foods, such as maize and cassava although it has been rumored that there is little support for such changes in the agricultural production mix.

Several private groups are conducting nutrition programs, the largest of which is the Community Kitchen Program of the Sarvodaya Shramadana Movement in Sri Lanka. The Sarvodaya community kitchen program, initiated in 1973 in cooperation with local governments to respond to severe food shortages, has expanded to encompass 1,164 kitchens, each serving about 35 to 40 children two meals daily. Food commodities are provided for on-site feeding at preschool groups and include thriposha (for protein) received through CARE, Sri Lanka. Sarvodaya has emphasized the need to reduce dependence on external food sources and develop food self-sufficiency at the community level. Therefore, the primary food used in the community kitchen program is an indigenous traditional gruel called colacando (made of rice and the extracted juice from a locally grown nutritious leafy vegetable). Each preschool attendant is trained in its preparation. As village mothers assist in the cooking and serving of the meals, on a rotational basis, they too learn how to prepare this local gruel.

In the spirit of sharing, which Sarvodaya seeks to promote, each preschool child is required to bring a matchbox of rice to put in the cooking pot. Additionally, mothers are encouraged to contribute periodically some food to be shared with the group. Kitchen gardens attached to the community kitchens serve as models for teaching villagers the composition and value of a nutritionally balanced diet.

Milk prepared from powder donated by the Netherlands is provided to community kitchens on a short-term selective basis. Sarvodaya's experience has been that many villagers actually have adequate milk but choose to sell it for income rather than give it to their children. So, milk food distribution is viewed as a temporary input to increase awareness of its nutritive value and promote development of community dairies.

The current 2000 train 1 preschool and community kitchen workers also play a valuable role in providing a linkage between their villages and the formal health delivery system. In addition to mobilizing children for immunizations, weighing, and health care (during periodic visits by local Ministry of Health personnel), attendants have also focussed on provision of basic health and nutrition education to mothers, both during the days they assist at the preschool program and as part of the antenatal care program. Sarvodaya members have also been recruited to assist Ministry of Health staff in the conduct of community level studies such as the recent survey of eye defects.

5.346 Conclusions:

To summarize, in assessing the current national nutrition programs, some key gaps are evident. Top priority must be given to developing and implementing a national nutrition surveillance system. Given the potentially strong political power of the new food and nutrition policy planning unit of the Ministry of Plan Implementation, it appears to be the most appropriate focus of such an activity. But staff numbers and technical skills in nutrition and related data collection and analysis are limited. With dramatic recent changes in national food policies, renewed commitment to national self-sufficiency in food production, and escalating inflation, the nutritional status of the population must be carefully monitored over the next few years and proposed food, health and sector development policy and program changes carefully assessed for their potential impact on nutrition.

Throughout the health system, nutrition education materials are strikingly absent for both health workers and consumers. Despite the pervasive undernutrition problem and recognition of nutrition as an integral component of primary care, public health workers receive minimal, if any,

nutrition in their formal training programs. Further, when it is included, the emphasis tends to be on supplementary feeding rather than on preventive nutrition interventions (which would more appropriately deal with underlying causes). Expansion of the health workers' knowledge of nutrition is constrained, over the short-term at least, by the general lack of nutrition expertise in the country as a whole.

The one notable area in which public nutrition education is strong is the use of milk. In health facilities visited by our team, posters urged mothers to feed their children milk---an economic impossibility for the majority of families with children at greatest risk of undernutrition. At the same time, there apparently has been no study of the possibly negative effect of this message on breastfeeding patterns. Data on breast feeding practices in Sri Lanka, collected during the 1975/76 nutrition survey, are still not available from the U.S. Center for Disease Control (HEW) which assisted in the study. Despite an active MCH program of the Ministry of Health, which includes breast feeding promotion, and the absence of a strong formula industry in Sri Lanka, anecdotal evidence points to declines in the frequency and duration of breast feeding, particularly among periurban working mothers. A 1979 study of 168 out of 243 infants being treated for gastroenteritis at Colombo Children's Hospital indicated that 130 were on artificial feeds and of these 78 were totally bottlefed.

Another important gap in nutrition education is the absence of an effective means by which educational materials can be fieldtested for local appropriateness (in light of the ethnic diversity of the population) or by which promising educational materials produced at district levels

can be more broadly distributed. Further, while several self-help and community development activities (like Sarvodaya) have recognized the need for education and attempted to respond through village workers, the latter's limited health and nutrition knowledge precludes getting the maximum benefit from these efforts. The team was highly impressed with a general health brochure written and locally disseminated to clients and new village health workers by a dynamic Medical Officer of Health at Kurunegala, as part of International Year of the Child activities. Such personal and innovative approaches to health education need more encouragement and support.

Closely tied to the demand for enhanced health and nutrition education is the need to address the lack of local weaning foods. There is apparently no tradition of special weaning foods in Sri Lanka and it is not uncommon, particularly in the rural and estate sectors, for mothers not to introduce solid foods before one year of age. The lack of complementary foods to supplement breast milk is particularly significant in light of the severe undernutrition in the mothers themselves. An applied research project, under Government sponsorship, is now market testing some potential weaning foods made entirely from local ingredients. However, additional support will probably be required for this effort to move from a research to an operational activity.

As mentioned in Section 4, another gap in the nutrition area is the minimal attention given to oral rehydration. Our team's field visit indicated that, outside of the hospital setting, no oral rehydration was being promoted, despite the fact that gastroenteric infections are the primary cause of morbidity among children. Consequently, the positive experience of community-based oral rehydration programs in other countries,

as a cost effective alternative to hospital based care, should be tested in Sri Lanka.

Finally, given the virtual absence of precise information on the underlying causes of undernutrition in Sri Lanka, consideration should be given to supporting a research study defining the parameters of under-nutrition. While existing data highlight a strong economic determinant of nutrition, the effect of socio-cultural practices (with regard to diet, feeding, and the impact of nutrition knowledge on status) should also be analyzed to provide a better foundation for designing nutrition interventions.

5.35 ORGANIZATIONAL ASPECTS OF FOOD AND NUTRITION PLANNING

The Food and Nutrition Policy Planning Division (FNPPD) was created in 1976 as part of the Development Planning Unit of the Ministry of Finance and Planning to assist in the development and guide the implementation of national food and nutrition policy. With the 1977 change of Government, it was moved to the Ministry of Plan Implementation. Its early history was marked by rapid changes in directors, and an emphasis on agricultural, not nutrition issues. The current director, appointed just six months ago, is also an agricultural specialist but has demonstrated a firm interest in and commitment to nutrition.

The current mandate given the Division is to coordinate the diverse public and private sector nutrition and nutrition related activities dispersed throughout the districts. Traditionally, these efforts have been highly fragmented and discrete projects have been designed and implemented with minimal, if any, policy guidance. To establish national nutrition priorities and consequently ensure that food and nutrition programs promulgated are responsive to them, the new Director has attached high priority to the formulation of a national nutrition policy. As an essential first step in that process, the Medical Research Institute (MRI) of the Ministry of Health has been requested to study nutrition and other problems in the eight districts identified as integrated development areas by the Government. To use such data for food and nutrition planning, the FNPPD recently requested the USAID Mission to provide three additional months of technical consultation to the Division by Dr. James Levinson. He will focus on assisting the Division in three areas:

- 1) direct participation, and training of FNPPD staff, in the identification, collation and analysis of the critical nutrition and socio-economic data being collected in the MRI surveys.
- 2) development of a national nutrition surveillance system which would provide the Division, on a continuous basis, the basic information necessary for formulating policy and monitoring progress toward objectives.
- 3) development and testing of a methodology for assessing the nutritional impact of various development projects; and
- 4) development of an evaluation framework for reviewing ongoing nutrition programs, particularly the food stamp and thriposha programs.

During our team's visit, the Director of the FNPP Division also urged that serious consideration be given to expanding the proposed research study of Thomas Poleman of Cornell University to include three districts in addition to the originally planned coverage of Galle and neighboring Kalutara districts. It is understood that the study, as currently planned, will attempt to measure the socioeconomic parameters of nutritional status. The development of such a methodology would contribute substantially to the Division's ability to track the progress of integrated development activities, particularly those under way in Mahaweli and other selected areas.

Establishing a comprehensive national food and nutrition data bank is critical to the FNPP Division's provision of technical reviews and advice on proposed GSL policies which may affect nutritional status. To promote the incorporation of nutrition elements into all new national development programs and to ensure that planners are of policies which might impact on nutrition, a Food and Nutrition Coordinating Committee was recently created. This inter-Ministerial body is comprised of senior officials from such Ministries as Agriculture, Health, Development, Food and Cooperatives, and Education and representatives from non-governmental organizations involved in food and nutrition activities. Chaired by the Deputy Minister of Agriculture, the Coordinating Committee apparently has the potential to play a critical role in national policy matters. The major emphasis in nutrition planning to date has been on the food side, with priority attention given to the pressing issues of food stamps and food pricing subsidies. However, the direct participation of the Ministry of Health, provides a new means by which nutritional concerns from a health perspective can be integrated into the national decision making process.

Within the Coordinating Committee structure, a series of expert panels have been set up to study and make recommendations on special problem areas. Currently, five such panels are operational: 1) nutrition and food research. (Also under the Deputy Minister of Agriculture, this panel has been charged with identifying research priorities so that monies can be channeled into areas of greatest need.); 2) ayurvedic medicine and nutrition; 3) nutrition education; 4) food science and technology; and (5) quality control (which is to review and advise on the need for changes in

existing food laws).

In addition to these new units under the Ministry of Plan Implementation, one other committee with important linkages to nutrition exists: the Cabinet-level National Food Policy Committee, convened by the Secretary of Agriculture. Chaired by the Secretary to the Cabinet, its members include the Secretaries of Plan Implementation, Agriculture, Trade and Shipping, Food and Cooperatives, and Finance and Planning. While its focus is almost exclusively on food production, the fact that the FNPP Director also sits on this body provides a channel for raising nutrition concerns.

In the aggregate, these nutrition and food committees and panels represent a basic infrastructure at the highest level of Government to formulate, monitor and guide food and nutrition policies toward stated national objectives. Continuing staff shortages and limited technical expertise in nutrition in the short run, however, are the major constraints to their effective operation. UNICEF is currently the only donor providing continuing support to upgrading the Food and Nutrition Policy Planning Division.

#### 5.4 Water and Sanitation

It is rather ironic that the role of safe drinking-water in the promotion of health should be recently questioned by the World Bank and currently by some members of the AID Asia Bureau. Perhaps the most famous natural experiment ever reported, that analyzed by a British physician, John Snow, over one hundred years ago, showed in most convincing manner the dangers associated with consuming contaminated water. Snow was able to show that the number of deaths from cholera per 100,000 population who drank water contaminated with sewage was eight times higher than that for the same unit of population who drank water free from such impurities.

One of the most intriguing phenomena to occur in historical times was the unprecedented decline of mortality which occurred in Great Britain (and elsewhere in western Europe) during the period from the second quarter of the 19th Century through the first half of the present one. This extraordinary series of events has been painstakingly analyzed by Professor Thomas McKeown, a British physician. He makes an impressive case for the thesis that the decline in the death rate was 1) due primarily to striking reductions in the numbers of deaths from infectious diseases and 2) the medical care and public health measures (with one notable exception) played a minimal role in this memorable drama.

McKeown estimates that 20 percent of the decline in the death rate was due to reductions in the number of deaths from tuberculosis. He adds that the death rate from tuberculosis in Great Britain declined steadily from 1932 until 1948 when the first specific drug for tuberculosis, streptomycin, appeared. By 1948 tuberculosis was no longer a major cause of death. Indeed, the number of deaths it caused annually in Great Britain and Wales was negligible at that time.

McKeown also points out that extraordinary declines in death rates from measles, whooping cough, and diphtheria occurred long before vaccines were available. Mortality from pneumonia and bronchitis had been strikingly reduced before the advent of the sulfonamides and penicillin.

Did any of man's efforts to improve health in Great Britain meet with success? Most assuredly. The introduction of safe water and the construction of modern facilities for sewage disposal in London resulted in sudden and precipitous declines in death rates from diarrheal disorders. There had been some decline in mortality from enteric infections prior to the advent of improved sanitation in London, but this was minimal compared to what followed.

Lastly, there is abundant evidence to support the thesis that safe water and sanitation promote health. Saunders and Warford summarized their review of twenty-eight studies as follows:

"...the twenty-eight studies provide evidence to reinforce the intuitive belief that the incidence of certain water-washed, waterborne, water-based and water-sanitation associated diseases are related to the quantity or quality of water and sanitary facilities available to users."

Although prematurity is reported to be the leading cause of infant mortality in Sri Lanka (see Table 4.2.2), diarrheal disorders play an exceedingly important role in the causation of malnutrition, a major public health problem in Sri Lanka. The lack of good water in abundant quantity is also a factor related to infestations with intestinal parasites. The latter have long been regarded as relatively harmless annoyances, but recent evidence suggests they may play an important and causative role in malnutrition in some instances. In brief, there are a variety of health benefits to be gained from the provision of ample amounts of safe water to the population of Sri Lanka. It should be emphasized, however, that facilities for excreta disposal and health education are necessary to maximize the benefits to be gained from the provision of safe water.

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1/ Saunders, Robert J., and Jeremy J. Warford. Village Water Supply. Baltimore and London: Johns Hopkins University Press, 1976, p.42.

#### 5.4.1 GSL Planning for Water and Sanitation\*

1971 Census data is generally used to analyze the current availability of water and sanitation services. Since the next Census will be conducted in 1981, the results will not be available for use in the current GSL planning for Water Supply and Sanitation (WSS) Decade projects. Tables 5.4.1 and 5.4.2 break down water and sanitation data by type of system and area (urban, estate, and rural).

As shown in the tables, only 5% of the rural housing units have access to piped water, while the coverage increases to 45% for urban units and 75% for estate units. The accessibility, quality and quantity of piped water are deficient in many areas. However, the situation is even worse for the majority of the population who must rely on streams and wells since these sources are commonly reported to be polluted. Table 5.4.2 indicates only 12% of rural units have water-seal or flush toilets as contrasted to about 42% for the estate and urban units. However, inadequate water supplies suggest that the percentage of actual usage is much lower.

The tentative targets established in the GSL's Draft Plan for the WSS Decade are to increase piped water availability for the urban population from 45% (1971) to 100% by 1990. About 60% of the rural population will be provided with "safe water," primarily through protected wells. These targets represent coverage of about 4.7 million urban and 8.0 million rural people, so about 73% of the projected population of 17.4 million would have access to safe water by 1990.<sup>1/</sup> The primary emphasis in the estates will be the upgrading of existing water systems.

<sup>1/</sup> Ministry of Local Government, Housing and Construction, Draft Plan - International Drinking Water Supply and Sanitation Decade (1981-1990), March 1980, page 1-2. Any area with 5,000 or more people is classified as urban.

\* Data on future targets may be changed in new GSL WSS Decade Plan now being prepared.

Table 5.4.1 Water Supply Situation by Sections - 1971

	<u>Percent of Housing Units</u>			
	Urban	Estate	Rural	All
<b>I. <u>Piped Water on Tap</u></b>				
<u>Inside Housing Unit</u>				
- Exclusive	14.9	4.3	0.9	3.7
- Shared	<u>1.4</u>	<u>1.0</u>	<u>0.2</u>	<u>0.5</u>
Sub-total	16.3	5.3	1.1	4.2
<u>Outside Housing Unit but within premises.</u>				
- Exclusive	2.6	5.5	0.5	5.6
- Shared	<u>7.6</u>	<u>42.5</u>	<u>0.5</u>	<u>6.1</u>
Sub-total	10.2	48.0	1.0	11.7
<u>Outside premises</u>	18.8	21.6	2.7	7.5
Sub-total (I)	45.3	74.9	4.8	23.4
<b>II. <u>Well</u></b>				
- Exclusive	18.7	1.9	31.0	24.4
- Shared	<u>31.8</u>	<u>13.5</u>	<u>50.9</u>	<u>28.4</u>
Sub-total (II)	50.5	15.4	81.9	52.8
<b>III. <u>Other (Streams, Rivers etc.)</u></b>	2.0	7.3	11.0	8.5
<b>IV. <u>Unspecified</u></b>	<u>2.1</u>	<u>2.5</u>	<u>2.3</u>	<u>2.2</u>
<b>TOTAL -</b>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

Source: 1971 Census

Reproduced from Ministry of Local Government, Housing and Construction,  
Draft Plan - International Drinking Water Supply and Sanitation Decade  
(1981-1990), March, 1980

Table 5.4.2 Type of Latrine Facilities in Urban,  
Estate and Rural Areas - 1971  
(Based on 1971 Census Data)

Type of Latrine	Percent of Housing Units		
	Urban	Estate	Rural
<b>I. <u>Flush Toilet</u></b>			
<u>Inside Housing Unit</u>			
- Exclusive	11.9	3.5	1.1
- Shared	1.0	0.2	0.1
Sub-total	12.9	3.7	1.2
<u>Outside Housing Unit</u>			
- Exclusive	3.0	1.4	0.8
- Shared	6.8	3.1	0.2
Sub-total	<u>9.8</u>	<u>4.5</u>	<u>1.0</u>
Sub-total (I)	22.7	3.2	2.2
<b>II. <u>Water-Seal Toilet</u></b>			
- Exclusive	13.5	8.5	8.5
- Shared	<u>5.7</u>	<u>25.4</u>	<u>1.4</u>
Sub-total (II)	19.2	33.9	9.9
<b>III. <u>Bucket Type Latrine</u></b>			
- Exclusive	8.9	0.5	0.6
- Shared	<u>10.5</u>	<u>3.6</u>	<u>0.4</u>
Sub-total (III)	19.4	4.1	1.0
<b>IV. <u>Pit Latrine</u></b>			
- Exclusive	11.6	6.6	37.5
- Shared	<u>6.7</u>	<u>31.6</u>	<u>6.9</u>
Sub-total (IV)	18.3	38.2	44.4
<b>V. <u>None</u></b>	19.1	13.4	41.5
<b>VI. <u>Unspecified</u></b>	<u>1.3</u>	<u>2.2</u>	<u>1.0</u>
<b>TOTAL</b>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

Reproduced from Ministry of Local Government, Housing and Construction, Draft Plan - International Drinking Water Supply and Sanitation Decade (1981-1990), March, 1980

The preliminary GSL goal is for 100% of the urban population and 50% of the rural population to have a sanitary method of excreta disposal by 1990. In Colombo, expansion and upgrading of sewerage will be emphasized (with help from the IBRD and other foreign donors). In rural areas, priority will be given to the conversion of pit latrines into water-seal pit latrines or other sanitary latrines and by the "provision of new facilities." The draft plan also notes the importance of pursuing water and sanitation activities together since latrines may be unused where adequate water is lacking.<sup>2/</sup>

The major problems to be overcome in working toward the above targets include: (1) financing, (2) establishment of effective local mechanisms for operating and maintaining systems, and (3) developing an effective health education program. The draft plan estimates that the capital investment in water will be about 4,048 million Rupees for 1981-1990 (in 1979 prices). This is based on per capita costs of 1,000 Rupees for urban piped water, 500 Rupees for rural piped water, and 50 Rupees for community wells.

The capital costs for sanitation systems is estimated at 1,524 million Rupees so the total preliminary budget for the WSS Decade is 5,572 million Rupees. Foreign donors are expected to provide 3,269 million Rupees or 59% of the total. As mentioned earlier, the GSL Public Investment Program for 1980-84 estimates an investment of 3,757 million Rupees for Water and Sewerage for that five year period.<sup>3/</sup> Our team was told that current estimates of construction costs are probably too low, given the sharp recent increases in

<sup>2/</sup> ibid., pages 1-4

<sup>3/</sup> World Bank, Sri Lanka: Key Development Issues in the 1980's, Vol. I, Report 2955-CE (Washington, D.C., May 20, 1980) pp. 38ff.

construction costs in Sri Lanka. The capital budget will probably be significantly revised during the ongoing revision of the Draft WSS Decade Plan. Moreover, operational costs will have to be added. It seems likely that the targets will be reduced to reflect the current overall crunch on funds.

Both the Draft WSS Decade Plan and our team contacts suggest that there are few effective community level systems for operating and maintaining WSS facilities after they are constructed. The Ministry of Local Government officials told us that the development of effective local organizations for water and sanitation would be a major constraint. One alternative under consideration is to use the new District Development Councils as a link between national agencies and the local communities, but it is still not clear how these Councils will function. More traditional leadership mechanisms will be used at the village level.

There seems to be general agreement that the Public Health Inspectors are the logical persons to inspect local systems and educate people in the health aspects of water and sanitation systems. However, strong ties have not been developed in many communities between representatives of the Ministries of Health and Local Government. Again there is general recognition that such arrangements are essential to the effective implementation of WSS projects. Improved inter-ministerial cooperation is being achieved at the Colombo level through a special WSS Decade Committee. More attention to water and sanitation is also reportedly being incorporated into the new training curricula for personnel being trained at the National Institute of Health Sciences at Kalutara.

We were told that Sri Lankan politicians give a high priority to the improvement of water systems and, to a lesser degree, sanitation. Whether for reasons of health or general comfort, the general population also desires better

water and sanitary facilities. Some improvement activities are being carried out at the village level under the aegis of various health volunteer groups and with the support of local representatives of national agencies. Consequently, one important new input into WSS projects could be the new primary health teams and volunteer schemes now being tested on a pilot basis. Similarly, the development of simpler and more economical models for providing WSS services could accelerate population coverage during the next decade.

### 5.5 Malaria Control

Malaria has been a serious problem in Sri Lanka for centuries. In 1946 the Government began its long struggle against the disease through a formal malaria control program.<sup>1/</sup> By 1963, only 17 cases were detected and the disease was brought under control for the first time in the country's history. However, this apparent victory was short-lived as malaria began to reappear towards the end of the 1960s. This was primarily due to the mosquito having built up a resistance to the insecticide DDT. This, combined with the need for health worker refresher training, insufficient field staff and inadequate equipment and supplies for the AMC, contributed to a resurgence of malaria cases, reaching epidemic proportions by 1975. In 1975, the country recorded 400,777 cases. Increased infant mortality and general illness and debilitation of the work force was evident in the affected areas. For the past few years the GSL has had a program using malathion, the best cost effective replacement insecticide for DDT. The present malaria program in Sri Lanka, which began in FY 77, proposes the control of malaria within a five year period, i.e., a reduction from 100 cases per 1,000 population to one case per 1,000 population. The total recorded caseload of malaria was about 262,000 in 1977. In 1978, this dropped to 69,658 and provisional data indicated approximately 48,000 cases in 1979. Since a more complete surveillance network is being established in 1980, better national estimates will be available by April 1981 (when the next annual review will be made). (Chart 5.5.1 summarizes case data since 1967).

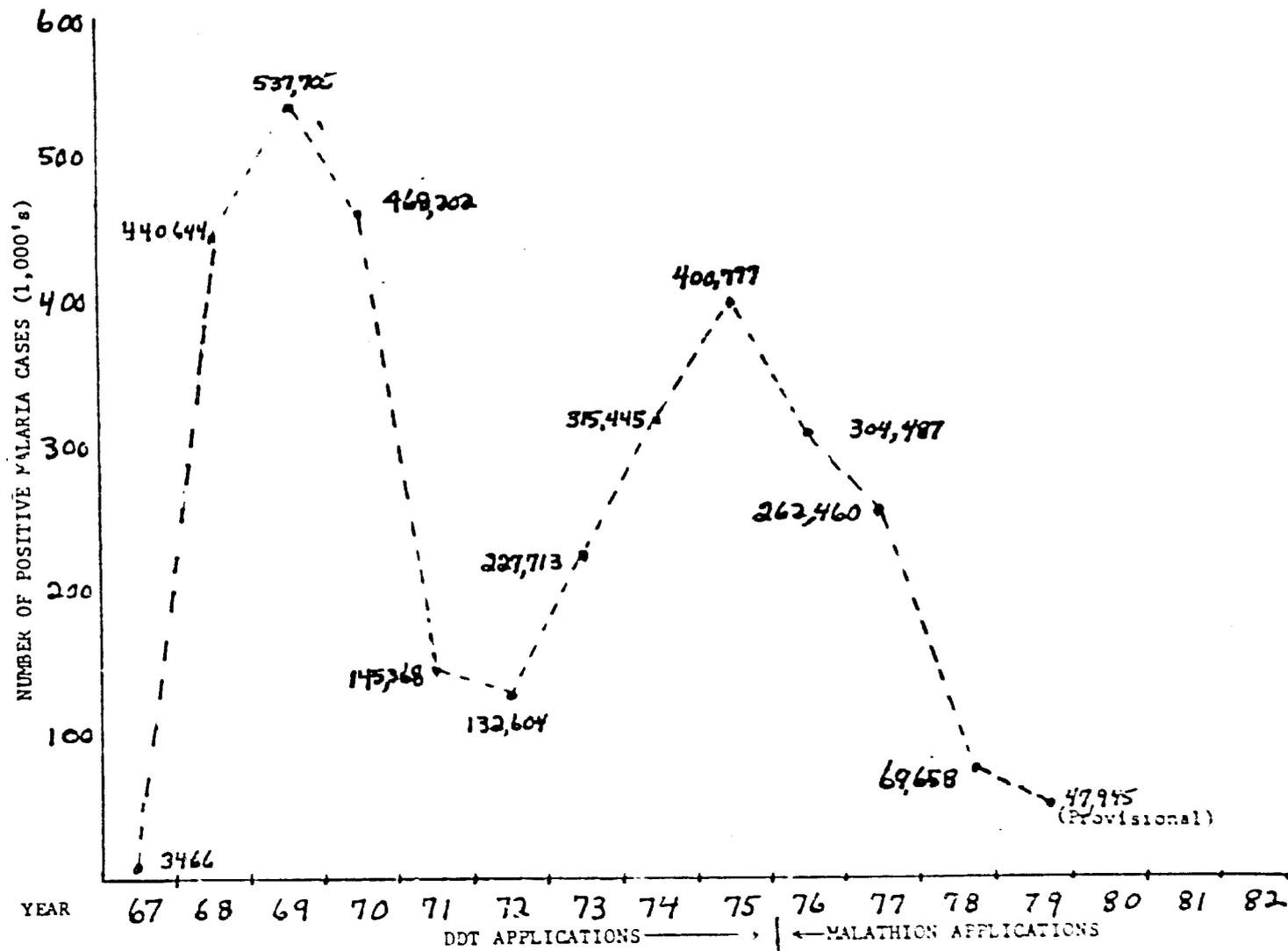
The GSL, including the Ministry of Health, supports the Anti-malaria Campaign (AMC) as a high priority. The Superintendent of the AMC reports to the Deputy Director of Public Health Services under the Ministry of Health. The AMC has responsibility for all in-country malaria operations: spraying,

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<sup>1/</sup> Material in this section came largely from Dr. A. N. A. Abeyesundere, Superintendent, AMC, and Larry Cowper, A.I.D. Regional Malaria Officer.

Chart 5.5.1 - Malaria Cases Reported in Sri Lanka, 1967-1979

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surveillance, non-industrial treatment, training, research, associated health education and evaluation. In addition to the AMC Headquarters in Colombo, there are 16 Regional Offices and 7 laboratories. The AMC employs about 1600 full-time personnel and 2400 seasonal workers. All workers receive training either in Colombo at the Malaria Training Center or at field offices. Annual external evaluations of the progress of the AMC are made by an international team of malaria specialists. The AMC will apparently be elevated to a Department of Vector Borne Diseases in 1980. Our team was told that this organizational change would permit more personnel and other decisions to be made by field supervisors rather than being referred to Colombo.

Although administered as a vertical program, the AMC has apparently established good linkages with other components of the health delivery system and with other development agencies. Health personnel outside of the AMC receive training in malaria control and the AMC has established about 250 village volunteers in the Mahaweli Development Area (Block H) who are trained to treat malaria and provide other basic health assistance. The Superintendent of the AMC is on the Mahaweli Development Board and anti-malaria considerations are reportedly incorporated into the planning of drainage and irrigation systems. Like other health units, the AMC has encountered difficulties in recruiting and retaining medical officers for field positions.

GSL and foreign donor financial support for the AMC has been rather good. The total cost for the current five year program (1977-1982) is about \$57 million. The GSL will provide about \$32 million, USAID \$16 million, United Kingdom \$4 million, Netherlands \$4 million, and WHO \$0.5 million.

The second annual evaluation of the present program was completed March 1, 1980. The evaluation report recommendations included the following:

(1) continued monitoring of a reported resistance to malathion spray by A. culicifacies and/or bedbugs and investigation of the possibilities for using HCH as a substitute spray.<sup>2/</sup> (Our team was told that some villagers permitted spraying more as a means of eliminating bedbugs, rather than protecting against malaria. Resistance of internal house spraying is also reportedly higher in urban areas and among the higher economic classes--who do not wish to have their walls discolored or damaged by the spray.)

(2) intensification of efforts to improve safety precautions for the spray teams--including the provision of better supervision and better protective gear (although there reportedly has been no serious problem so far).

(3) continuation and expansion of present activities to promote other mosquito control methods (e.g., larviciding, source reduction, ULV spraying, and water management).

After delays in start-up (caused in part by the 1977 communal disturbances) the AMC hopes to achieve full spraying and surveillance coverage of most areas by 1981. After the spring 1981 review, the GSL must decide whether to release some areas from spraying. It is not clear what role A.I.D. and other donors will play in the malaria control effort after 1981. While AID-financed insecticides may still be available in 1984, our team suggested that the USAID Mission be prepared for the contingency that its continued support may be necessary and justified after the present joint project is terminated in 1984. The last USAID obligation was in FY 1979 so funds for malaria are not being included in current budget exercises. However, it may also be possible and desirable to include some support for malaria control in the FY 1982 health sector loan being considered for Sri Lanka.

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<sup>2/</sup> Second Annual Evaluation of the Anti-Malaria Campaign (AMC), February 6 - March 1, 1980, (Dittoed) pp. 56ff.

### 5.6 Community Participation

The concept of community participation is deeply rooted in Sri Lankan history. The tradition of volunteerism reportedly dates from the early reign of Buddhadasa in the 4th Century A.D. and has existed since then in various forms in religious and social organizations. Historically, villagers worked together, pooling labor, to build homes, clear lands and undertake agricultural production, and shared a culturally rich rural life closely tied to the local religious temples. The ancient religious monuments, government palaces, and irrigation systems stand as evidence of a period of massive community interaction to achieve a common goal.

The process of development and urbanization, however, shifted the political and economic pulse and, thus, the power base of the country to the newly emerging towns. The British colonial period accelerated the political fall of the rural communities by introducing policies of divide and rule which also indirectly led to a decline in self-help and community sharing. In the post colonial period, the national Government periodically has tried to reignite the spark of self-help at the village level with mixed results. The rural development program of the 1950s did succeed in mobilizing communities to construct access roads, school buildings and meeting places but soon waned.<sup>1/</sup>

Committed to "Health for all by the year 2000" and recognizing the serious human resource shortages facing the health system over the foreseeable future, the previous and present Governments placed a high priority on decentralization of, and community participation in, health programs. In an attempt to involve people directly in responding to their own health needs, and within the context of a new primary health care model for Sri Lanka, the

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<sup>1/</sup> Some of this historical background information came from a 1978 United Nations document which we did not have available when preparing the draft.

Government implemented a volunteer village health worker program.<sup>2/</sup> Under the direction of the Health Education Division of the Ministry of Health, the Health Education Action Program was introduced in 1975 as a "program of and not for the people." Its principal objective is to establish and institutionalize a vital link between the community and the public health professionals and institutions through creation of a "first level health worker." Volunteers play a valuable role as community "sensors," relaying information on village needs and status to the health system. At the same time the program responds to the Government recognition that, at least in the short term, given the high recurrent cost burden of existing facility operations the larger share of financial resources available to the health sector will continue to go to curative services. In such a setting, use of volunteers appears to be the only rational means to ensure that frequent and repeated preventive and promotive oriented health messages reach vast numbers of people.

Since its inception, the program has succeeded in mobilizing a core of volunteer health educators in 1000 villages dispersed throughout the island. While the volunteer program is an evolving one and communities have adapted the model to fit their own needs, the typical village has approximately 10 such volunteers. A March 1977 study of the program indicated the following volunteer profile: The majority of volunteers are between 18 and 24 years of age, and three-fifths (61 percent) are unmarried and out of school. In some villages, however, young mothers are actively involved as volunteers too. Although almost 90 percent of volunteers had a grade 9/10 or higher level of educational attainment, 91 percent were unemployed and seeking jobs. Although

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<sup>2/</sup> See "Volunteer Health Worker in Sri Lanka" by Dr. Walter K. Patrick, Health Education Division, Ministry of Health, Colombo, November 1978, for a detailed discussion of this program.

overall females outnumbered males 4:1, leadership of the program has had a definite influence on the sex ratio. Where the program tends to be more PHM-centered there are more females, whereas when the PHI has been the key contact, more males participated; where leadership between PHM and PHI was balanced, so too were the volunteers. The study did indicate however, that male availability for volunteer activities may be more seasonal in nature than female.

The initial training period for volunteers is 60 hours spread over a two-month period, or approximately 15 half-days of instruction. The volunteer training program has been guided by analysis of other non-formal (field) education programs which have indicated that it is superior to formal training using the critical measures of trainees' success in gaining community acceptance, self-reliance, and communication skills.

The initial program goal was to retain a volunteer for at least three years. The high drop-out rate during the early phase of the program, with 20-30 percent leaving within the first two to three months of service, led to a critical review of the selection process. At the same time, the Ministry reversed its original view that a long service period was imperative to achieve objectives. Rather than service-orientation, over the past year the Government has increasingly recognized the health education value of the program for the volunteers themselves who, in the aggregate, represent the next generation of Sri Lankans. Not only are these youths motivating the villagers, but they are committing themselves to improved environmental sanitation, health care, and nutrition--all of which are critical to achieving overall sector objectives to reduce morbidity and mortality.

Further, within the newly formed volunteer health educator cadre, high turnover rates due to marriage and desire to obtain additional education are reportedly largely offset by an internal recruitment process in which

family members or friends are mobilized into service as replacements. Thus, the Ministry now views the attrition in the positive light of expanding health education awareness and participation at the local, village level.

The main responsibility of the volunteer is to serve as an educator/motivator. The only curative functions for which they have been trained is to detect simple health problems and refer people for treatment to the appropriate level of care. In some villages, volunteers have begun to accompany people to clinics. In addition to the community service which they perform, assistance of volunteers at the clinics represents a valuable, free input to the health system. Even computing the value of their time at the low wage of 150R per month, the Patrick report estimated that village health worker's input contributes about 11% of clinic care cost. In the more remote areas, volunteer support to the local MDH\* and District Medical Officer has been estimated to be even more significant representing an input of 60% of the service time and 28% of the service costs.

Despite this contribution, the Government has remained firm in its commitment to keeping this community health education program a volunteer one. The need for assistance initially for purchase of training materials and stipends and travelling money to cover direct training costs has, however, been identified. Even issuing of certificates at the end of training sessions has been dropped after program evaluation activities indicated that such recognition often created false expectations of jobs among the new volunteers. The potential for recruiting these volunteers into the primary health care team as PHIs and PHMs remains high and is being increasingly recognized as at least indirectly, an incentive to do a good job. Thus, heretofore lacking career mobility opportunities are emerging.

\* In this section MDH refers to Medical Officer for Health...the individual largely responsible for preventive services.

For the average of one to two hours per day investment of time which the volunteers are contributing to improve health in their villages, the results are most impressive by any country standards. In contrast to an average immunization coverage of 35% of the targeted children for the island as a whole, for example, coverage reportedly has increased to 75-80% in villages with volunteers. In just eight months since its volunteer program began, Kendaradagama, a small village of 59 families in Kegalle district has already undergone important health changes. Volunteers told the team that in contrast to the period immediately preceding their work, currently all families are boiling their water with a noticeable reduction in infectious diseases, particularly diarrhea and hepatitis which have been prevalent. A total of 35 houses now have latrines, 20 of which were built since the volunteer program commenced, with the volunteers directly aiding 12 families in the latrine construction.

Contrary to popular opinion initially within the Ministry of Health that young volunteers were inappropriate and unable to serve as family planning motivators, review of existing volunteer programs has indicated that in many villages the new mothers also are young and had been classmates of the volunteers before dropping out of school. Thus, with sensitivity, family planning education with referral to facilities for initial supply, and possible use of volunteers for resupply, does appear to be a feasible approach to expanding acceptors which deserves further study.

The method of motivating has varied significantly among villages. The most common model appears to be for one volunteer to be responsible for a small family cluster of about 10 to 12 houses in the immediate vicinity of his/her house. In Kendaradagama, however, the team approach has proved most effective with the 21 volunteers organized into four groups of about five each covering 12 houses. It is the high adaptability of the program to

distinct community characteristics and the recognized need to avoid fixed designs and time-bound activities with specific objectives and target groups that augurs well for its continued success.

Initial program evaluation activities have provided useful insights which should now be built into the design of new volunteer health worker operations. Organizationally, the links to the formal health system, upon which the volunteer worker program ultimately depends, have been weak and informal. Hopefully, such linkages will be strengthened via the revised curricula for training the prevention-oriented primary health care team of the PHI, PHM, and PHN which are now being developed at the National Institute of Health Sciences, Kalutara. The orientation and commitment of public health staff at all levels to the volunteer program is critical to ensure that volunteers are perceived as supportive rather than competitive workers. Despite the promising experience of the program to date, the village health volunteer concept has not been widely accepted by the medical community in Sri Lanka and resistance to use of paraprofessionals extends, reportedly, even to some Divisions of the Ministry of Health. Clearly, building a constituency will be crucial to program success over the long term.

Experience has further indicated that priority attention must be given at the outset of volunteer programs to addressing the "felt" needs of the community whether or not they happen to be health per se. The more closely linked to the existing village committees, such as the Rural Development Societies, the better the reported results. Program assessment has underscored the need to develop a village health action committee where no other appropriate organization exists. The volunteer program can then attach itself to this committee to establish effective relationships between the volunteer and the community. If the goals of the national health education program are to be met over the long term, there must be an institutionalization of improved health attitudes and practices at the community level, so the catalytical role of

the volunteer is crucial. Moreover, the creation of a permanent village infrastructure to promote health is critical, to ensure continuity in latrine and water system maintenance, immunization coverage, etc. once the inputs are in place and the volunteer is no longer motivating the community. In the initial stages of village volunteer program generation, there may be some value in establishing networks of volunteers to share experiences and insight on community participation. One possible approach which deserves consideration is that of providing monies for volunteers from successful programs such as that which we viewed at Kendaradagama to travel to neighboring communities and mobilize their youths to establish a similar program.

Another positive government step in mobilizing community resources to achieve health sector goals has been the recent attention at the highest Government levels of the need to explore the potential for further integrating ayurvedic medicine into the formal health delivery system. Nationwide, the approximately 10,000 to 12,000 ayurvedics are the first point of contact with the health system for an estimated 50 percent of the population. Together with the priest and teacher, the ayurvedic practitioner is widely recognized as one of the key persons in village life, where ties between religion and medicine are strong. But, he/she has yet been effectively built into most health program designs. While many of the ayurvedics are currently practicing in the urban areas, a Presidential Committee of the new project Ministry of Indigenous Medicine, formed in March 1980, has been asked to study the potential for using more ayurvedics in rural areas (where the most serious health personnel shortages exist) for the diagnosis and treatment of simple diseases. The Committee report was due by the end of April. Concomitantly, WHO is presently reviewing, for possible funding, a research proposal submitted by the Institute of Research on Indigenous Medicine at Navina to undertake a literature review, drug research and study of the efficacy of treatment of ayurvedic prescribed herbal medicines.

The proposed merger of traditional and modern medicine is meeting considerable resistance, however, from both sides. Our interview with one of the leading ayurvedics in Colombo highlighted the controversy. Completely different philosophical bases are inherent to each approach--the germs and bacteria theory of diseases as opposed to the concept of imbalances in the body's natural forces. The truly traditional ayurvedics warn that mixing the two will render each medical group's unique approach to the same disease totally ineffective and, ultimately, adversely affect the patient. Instead of integration, she urged differentiation of provider by efficacy of specific disease treatments. Thus, ayurvedics would concentrate on provision of care for those ailments for which Western medicine has not found a safe, effective therapy. At the same time, Western based physicians are skeptical of the value of ayurvedic medicine.

A WHO-assisted assessment of the contribution of ayurvedics to the family health program of the Ministry of Health (in which they were integrated on a pilot basis) was not favorable overall.

The team was unable to obtain information on volunteer programs of other Government Ministries. However, the Mission should attempt to assess the other programs with a view towards gleanig insights for building a community participation component into the proposed sector loan.

Several private sector community action programs have been initiated, a few of which have captured much attention. In 1950 a private, quasi-religious and philosophical movement - Saravodaya Shramadana-- emerged and began to blossom in the rural areas. An outgrowth of Colombo College staff and student involvement in neighbourhood social projects, the Saravodaya commitment of "self-reliant" development has spread into a national movement focussing on meeting the basic human needs of the most remote socially and economically depressed villages. Widespread recognition and acclaim for Saravodaya's contribution to upgrading the quality of life of some 3,400 villages

(out of the nation's 23,000 villages), can be attributed to two key factors

- 1) the personal dynamism and drive of its director - A.T. Ariyaratne - and
- 2) Government recognition in 1972 as a nonprofit, charitable institution which qualified it for domestic and external support.

The Movement's "Development from the Village Life" incorporates four basic steps to achieve individual, family and community "awakening" or Saravodaya: 1) recruitment, through village senior officials, and training of youth in community leadership at special institutes; 2) conduct of a socioeconomic survey to ascertain community "felt needs" and preparation of development plans to address them; 3) development of social organizations, encompassing all villagers, to achieve the goals; and 4) plan implementation.

In recent years Saravodaya has provided essential support to Government health and health related programs in selected villages through its work in developing creches for working mothers and its direct assistance in pre-school and community kitchen projects distributing food to nutritionally vulnerable infants, children under 5 years, and pregnant and lactating women. According to Saravodaya officials, the preschool program has proved to be an excellent catalyst for overall community development activities by creating a focal point for villagers to share responsibilities.

Saravodaya has played a key role in extending the coverage of the CARE-assisted feeding program to the poorest, most remote communities where it is active. Through the help of Saravodaya members and community youth, thriposha food distribution is being carried out in 700 Saravodaya villages with an anticipated increase to 1000 villages in the near future (see nutrition programs, section 5.3).

While Saravodaya's village development activities are inherently tied to volunteerism, a small allowance for the preschool attendants and community health workers has been introduced with which they can purchase some clothes and thereby build their self-respect.

Despite these promising approaches to building community participation into sector development, the numerous constraints to maintaining this momentum over the long term should not be ignored in program design. Socio-cultural factors have proven to be important determinants of health program success. The functional and structural cohesiveness of villages tends to break down, in actuality, to subgroupings of classes and family clusters, especially where mixed racial and religious groupings exist. New settlements have been identified as particularly vulnerable to such divisions in light of varying sources and social groupings of villagers. Overt and covert sanctions and taboos also limit educational, and consequently social, mobility within many such communities. <sup>3/</sup>

While about 72% of Sri Lankans are Sinhalese, minority groups are important. The local acceptability of health personnel is influenced by cultural, linguistic, and social factors. An early lesson learned from estate sector health/social programming activities was the nonviability of utilizing non-Tamil attendants for child care at the creches and the subsequent need to reorient staff recruitment and training. These differences must be considered when recruiting primary health care personnel, particularly in light of the fact that many underserved areas are, in large part, those where the minority, even disenfranchised, population groups live. Quotas for recruiting new primary care personnel for training must be based on careful assessment of manpower needs by specific ethnic and sociocultural areas.

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<sup>3/</sup> Patrick, Volunteer Health Worker in Sri Lanka, p. 14.

Further, even within ethnic groups, caste can be a divisive force in engendering the desired spirit of cooperation among community members. In Jaffna, for example, caste differences negated communal water supply schemes as lower caste members were forced to travel longer distances to get water to avoid "contaminating" water sources used by the higher caste families.

The economics of community participation are also a significant concern. While among the more prosperous families the decision to build a latrine is clearly one of setting priorities among competing demands on incomes, in several areas the team was told that families desiring latrines simply could not afford the estimated 300 to 400 R investment it requires. Similarly, widespread disrepair of existing water systems can be attributed, at least in part, to the inability of the local communities to financially support the necessary maintenance to keep the systems operative.

Direct participation by local contracting firms in the national development activities currently underway has also been severely constrained by economic factors. Few local companies can afford to put up the bond required by the Government to guarantee contract completion. As a result, large and often foreign firms have a clear competitive advantage over small, community enterprises and limit the possibility of local participation (with its potentially vast income-generating capacity).

The future direction and success of community participation in health is unclear. On the one hand, recent Government policies and actions indicate a national commitment to community involvement and meeting locally perceived needs. Strong support of the non-Governmental organizations' work has been expressed. Moreover, the newly formed District Councils provide a mechanism for decentralizing development decision-making and implementation. Further, tremendous potential exists for moving towards a community-based primary care system. The visible dedication and willingness of the young volunteer village

health workers to invest part of their time in motivating community members to undertake basic steps to improve their own health conditions are among the most essential ingredients for success. At the same time the identification of "potable water and sanitary latrines" as priority needs by Mahaveli farmers in the UNICEF farm management training program provide encouraging signs that communities themselves are perceiving the value of water and sanitation and are willing to contribute their labor to meeting these demands.

But the long-term economic and political feasibility of communities assuming leadership roles in the health sector must be carefully assessed. How much control will the Government be willing to relinquish to the periphery? Will the recent proliferation of Ministries at the center undermine the move toward decentralization? And most importantly, will shifts in human and financial resources from the urban areas, where they are presently highly concentrated, to the largely underserved rural sector, actually take place? Clearly, dramatic changes in the current resource allocation pattern will be a requisite to reorienting the health system to a primary care model. To at least some extent, the impetus for such change will have to come from the underserved people themselves. Their own capacity to raise incomes, and thus their political voice may, in the end, be the ultimate determinant of the success or failure of community participation in health in Sri Lanka.

## 6. CONSTRAINTS ON PROGRAM PLANNING AND IMPLEMENTATION

### 6.1 Government of Sri Lanka

#### 6.10 Funding

As already mentioned, the share of national budget going to health services and food subsidies is declining and may continue to do so during the coming years. However, the share going for water and sanitation projects may increase during the next five year (1980-84). Some Sri Lankan economic planners are assuming that more public expenditures for HPN programs will be unnecessary as new economic development activities and increased employment contribute to higher per capita income. Nonetheless, at least in the short run, such policies could lead to a serious deterioration of health and nutrition status among the poorer segments of the population. The situation could be mitigated somewhat by a more serious effort to reallocate existing funds to accelerate the improvement of primary and preventive health services in the rural areas.

Funding by USAID of HPN projects should perhaps be tied to an agreement by the GSL to give higher priority to the financing of the MOH's Community Health Programmes. Since the Mahaweli Development Scheme and Water and Sanitation Projects have high priority among the political leadership, it may be more feasible to negotiate for greater attention to HPN needs in these two areas.

Our team did not have time to assess the funding constraints on joint activities which might be carried out by the Water Supply and Drainage Board, Ministry of Local Government, Housing, and Construction. The USAID-financed Team which will help the GSL to design its "Water and Sanitation Decade" program should assess the impact of increased GSL and foreign donor investments on the Board's capacity to disburse funds and staff projects.

Similarly, the reported lack of finances at the local level currently constrains community participation in the operation and maintenance of water and sanitation projects. Unless such limitations are addressed at the project design stage, we can anticipate many problems arising after systems have been constructed and turned over to local entities by the national government.

#### 6.11 Health Manpower/Staffing

The severe shortage of human resources at all levels has consistently been identified as the major constraint to improving the provision of health services to the population of Sri Lanka. The manpower situation is particularly acute in the rural and estate areas where several factors have mitigated against adequate personnel coverage.

The serious lack of incentives for health workers in general, and rural service in particular, is strikingly demonstrated by an analysis of the current salary structure. As highlighted in Table 6.11.1, salary scales are not consistently related to level of educational attainment or professional training requirements. Within the front-line primary care personnel cadres, salary discrimination in favor of Public Health Inspectors (PHI) is evident. Although Public Health Midwives (PHM) must have more formal training than PHIs, their salary range is almost the same as that given to a Class I PHI. Indirect personnel benefits (not reflected in the salary scale) are also less for PHMs. Whereas PHIs are currently being given motorscooters to cover their target population, midwives who must serve 10 to 15 villages each have been given bicycles. This disparity is even more noteworthy in light of the fact that a 1978 study indicated that given their typically widely dispersed target groups, PHMs were having to spend one-third to one-half of their time reaching the service points. Consequently the study concluded that they had been unable to reach a significant percentage of the population at risk .1/

1/ Dr. Uthman Durrani, Malabar Medical College, Calicut, Kerala, India.

Table 6.11.1 Comparative Annual Salary Scale & Educational Requirements of Selected Public & Private Sector Personnel  
Sri Lanka 1980  
(in rupees)

Personnel Category	Salary Range			Minimum Education Level Required	Nature & Duration of Specialized Training
	Minimum	Increment	Maximum		
<u>Public</u>					
<u>Ministry of Health:</u>					
Public Health Inspector I	4600	240	8760	Grade 10	1 year theoretical training + 2 months field practicum
II	3632	144/180	7320		
Registered/Assistant Medical Practitioners	9600	360	11040	Grade 10	2 1/2 years formal training
Special Class	6840	240/300	9480		
Class I	3900	180	7320		
Class II					
Midwives (Supervisory) (Public Health)	3900	180	6960	Grade 10	1 year hospital-based midwifery course + 6 months field experience with a field midwife
	3900	90/140	7320		
Public Health Nurses	4600	240	8760	Grade 10	3 years theoretical training + 1 year internship at a health facility + 6 months midwifery training at hospital
Special Grade	5160	180	7320		
Others					
Malaria Supervisors	4240	180/240	8040		
Health Educators	5160	180/240	8760		
Vaccinators	3000	90			
Clerks	3000	90			
Drivers Class II	3000	90			
Secretary/ stenographer/ typist	5880	180/240			
<u>Other Ministries</u>					
Community-Development Workers	5400	a/		Grade 8	No formal training
Cultivation Officer	6180	a/		Grade 10	1 year practical training at farm school
Agriculture Extension Agent					
<u>Private</u>					
Cashier at Bank					
Secretary					

a) Note: only average figures are available.

1 Source: USAID Mission, Colombo and Annual Budget, Ministry of Health, 1980.

Finally, as Table 6.11.1 reveals, the PHMs' salaries are on a par with Ministry of Health clerks and drivers and even substantially below those earned by secretaries, stenographers and typists.

While the newly emerging health delivery model for Sri Lanka recognizes PHMs as key primary care workers at the important community level, strong disincentives to entering this cadre exist and have not been adequately addressed to date. In our team interviews, several health personnel questioned whether in fact, given their low status within the health system, sufficient numbers of midwives could be attracted in the new recruitment and training programs aimed toward reaching the desired population ratio of 1 PHM per 3000 people.

The comparative salary scale also illustrates the competition which the Ministry of Health faces in recruiting personnel not only from the private sector, which pays higher salaries for equally qualified persons but, importantly, from other Government Ministries as well.

The recent UNFPA Needs Assessment Team pointed out a bias in Government salaries in favor of administrative staff as compared to professional, technical staff. <sup>2/</sup> While this practice is common to civil service systems in many countries, nevertheless it militates against the already small number of highly specialized and technically qualified health sector staff remaining in the programs where their skills can be most valuably utilized. The assessment revealed that average Ministry of Health remuneration varies substantially, ranging from high to low by Ministry of Health programmatic areas: from General Administration, through Patient Care Services, down to Community Health Services. However, priorities in demand for services, and consequently health personnel to provide them, is exactly in reverse order.

<sup>2/</sup> UNFPA Needs Assessment Team, Aide Memoire, p. 13

Further, highly trained technical personnel are misused in administrative activities, but this is where the greater financial rewards are found.

In recent years numerous groups both within the public and private sectors have urged that serious consideration be given to revising the current salary scale to provide financial incentives for rural health service. The Government's position has remained firmly opposed however on the grounds that preferential treatment cannot be given to one Ministry and that increases in personnel compensation for all rural community development workers is not economically feasible, given the already large recurrent cost burden.

Lack of adequate housing for community-based health workers is also a strong disincentive for rural service. In the vast majority of villages it is not feasible for young health workers to live with families because most housing is already overcrowded. Further, sociocultural and economic status differences between health workers and many of the communities they serve must also be taken into account. UNICEF's experience in Sri Lanka has highlighted the value of providing housing for teachers as an incentive for rural service and the desirability of enhancing their status in the community. Any health sector program focused on providing care to the largely underserved population groups may well have to include a construction component. The housing problem is compounded by personnel regulations requiring rotation of duty stations every two years so that securing adequate housing is a serious problem which rural health workers must continually face as the change posts.

Career mobility within the Ministry of Health is also severely limited and remains a major cause of poor morale and lowered productivity. At a central dispensary we visited in Wellewa in Kurunegala District, the

Registered Medical Practitioner (RMP) highlighted the disincentive to serve in rural areas.\* After 25 years of service, he is earning just 900 Rupees per month, with no increment over the past three years despite spiralling inflation. When coupled with other hardships of rural service---such as poor housing quarters (his family therefore has remained in Jaffna) and difficulties in obtaining adequate supplies of water and food--- one must admire his dedication in this overcrowded facility (which is presently handling about 90 outpatient visits daily plus three specialized biweekly clinics of 30-40 patients each for antenatal, well-baby and family planning). Although there are two national associations of registered and assistant medical practitioners in the country, they have not been able to exert pressure on the Government to expand the salary range for this critical health provider.

Little emphasis is placed currently on recognizing and rewarding good work performance by training workers for higher level jobs. The one main exception is that the Ministry has decided that 60% of the new PHI students are to be identified from existing cadres. But most recruitment activity is focused on identifying new people with little attention given to the possibility of drawing upon existing semi-or unskilled health workers. Government health officials were particularly unreceptive to our suggestions that consideration be given to recruiting traditional village ayurvedics for training as primary care workers.

Until very recently, in-service training opportunities were almost non-existent for all health workers. Over the past year, increased attention has been drawn to the need to upgrade RMP and AMP skills in such areas as obstetrics and gynecology, where training has been weak traditionally. Additionally, the Government has introduced a management training course for District Medical Officers and Medical Officers of Health

~~to upgrade their knowledge in this area, given their extensive administrative~~  
 \* An Assistant Medical Practitioner (AMP) is a medical extender who can become a Registered Medical Practitioner (RMP) after 20 years of service. Designation as an RMP permits the individual to operate a private practice.

responsibilities and the lack of management courses in the medical faculties. WHO is assisting this initiative by providing \$100,000 in funding for FY 82-83 for a new Committee on Management which will conduct special studies. It is agreed that the Government will assume full responsibility for this activity at the end of the WHO project.

Given the low salaries and limited professional advancement opportunities, overall staff turnover may be relatively low. Earlier studies showed that attrition rates among the community based, primary care personnel are extremely low. For example, a 1972 health manpower study indicated a 2% attrition rate among RMPs and AMPs and 3% among PHIs. No data are readily available on the PHMs or PHN's, but turnover is estimated to be about 3%.

Among the most technically skilled workers, resignations are extremely high. High attrition rates among young engineers of the National Water Supply and Sanitation Board have been a chief impediment to organizational stability and program continuity. The Board's staff now tend to be young, relatively inexperienced engineers with limited understanding of management and operational issues. Once experience is gained with the Board, their value to the private sector is greatly enhanced and resignations to accept better paid jobs within Sri Lanka and in Middle Eastern countries are significant.

The brain drain of highly skilled health professionals to other countries, particularly the Middle East, includes nurses and laboratory technicians although the Government has recently expressed serious concern over abuses of Sri Lankan women in these countries and tightening of outmigration is pending. The principal effect of the brain drain, however, has been to seriously widen the gap between demand for and supply of physicians. While precise information on the number of physicians who emigrate each year is not available, health

personnel interviewed during our visit indicated that of approximately 250 medical graduates annually, about half this number leave the country each year. While some ultimately return, this large outflow nevertheless represents a serious problem when viewed from the perspective that Government investment in medical education is an estimated US \$10,000 per student.

Recent Government policies with regard to physician training and emigration have been inconsistent and are having a mixed impact. In an attempt ostensibly to slowdown the outflow of doctors, national legislation was recently introduced to terminate sitting for the British medical qualifying examination at the end of training and requiring all students to take a national examination. In theory at least, by not providing opportunities to take the British examination, new doctors would no longer be immediately eligible to practice abroad. This change is reportedly being resisted by the medical associations.

But, at the same time, the Government has dropped the five year public service requirement (in repayment of medical education benefits provided). This leaves the door open for recent graduates to emigrate to other countries. With the lack of postgraduate medical training in many speciality areas in Sri Lanka, doctors are still highly attracted to foreign medical schools. And once in another country, it may be easy for Sri Lankan physicians to qualify for practice. However, the Ministry of Health argues that more stringent licensing requirements for foreign medical graduates (FMOs) in the countries to which Sri Lankan doctors traditionally have emigrated will serve as a countervailing force to the brain drain.

Even within the country, recent changes permitting public sector physicians to also engage in private practice can be expected to have a detrimental effect on the existing imbalance in personnel across districts.

With physicians and other more trained health cadres, the distribution pattern is highly skewed toward the urban areas in which just 20% of the population lives. Consequently increased inequities in accessibility to care between the urban population and the largely underserved rural areas could be exacerbated.

Current personnel shortages can be linked as well, however, to historical as to recent Government policies. Assistant Medical Practitioners have played a pivotal role in health care provision in Sri Lanka since 1895. In the 1960's, under pressure from a growing physician corps, the training of AMPs was dropped for about 10 years. At the same time, doctors did not increase in sufficient numbers nor did they want to commit themselves to the rural health services which AMPs traditionally performed. As a result, serious shortages in AMPs arose and many rural facilities had to be managed by lower level health personnel (such as the Public Health Nurse). Recognizing the valuable contribution of the AMP cadre to the health system, the Government has now embarked on an extensive program to expand and upgrade the AMP corps.

The traditional resistance of the medical profession to an expanded role for nurses and midwives is apparently easing. While the MID's role is closely circumscribed to provision of emergency care, diagnosis and treatment of simple ailments, and general maternal/child health monitoring and referral to the health institutions (as necessary), their home visits have been increasingly recognized as a key to reducing morbidity and mortality among the most vulnerable population groups. The new primary care model for Sri Lanka will in fact focus on significantly expanding the number of midwives at the community level. Similarly, reduced intakes of nursing students at the national training schools over the past decade contributed to shortages in this personnel group. Attention is now being given to redressing the large gap between the supply and demand for nurses.

As part of the primary health care team concept upon which the new delivery model will be based, the Institute of Health Sciences (Kalutara) is in the process of developing a core curriculum which the community health workers (PHI, PHN, and PHM) will take together to stress the need for integration of functions. However, attention must also be given to minimizing additional layers of personnel. Most important will be a critical analysis of the roles of the proposed Community Health Workers and the Village Health Volunteers. It will thus be important to avoid unnecessary duplication between the health volunteers and the PHM on the one hand and between the PHM and the PHI on the other-- particularly in such areas as mobilization of community support for health services and health education at the local level.

Competing demands within the Government for the same personnel must be also be reconciled. With acute shortages of Medical Officers of Health to staff district facilities, competition for new graduates is high. For example, with serious problems of unstaffed service facilities, it may not be politically feasible to detail 15 needed Medical Officers of Health to the Institute of Health Sciences to serve in urgently needed training officer activities.

Over the short term at least, the human resource supply and allocation problems may in fact worsen as new programs and initiatives unfold and population growth results in a widened gap between the supply of and demand for services. Staffing problems are compounded by the lack of an overall national health plan delineating specific priorities to guide national manpower distribution decisions. At the same time, without adequate health manpower planning, over the long term an excess of certain cadres may occur.<sup>3/</sup>

<sup>3/</sup> However, other sources suggest that there will still be a shortage of trained health workers through 1988. See Paul A. Nutting and Joseph P. Salvo, Technical Analysis of the Plan to Expand Facilities of the National Institute of Health Sciences, Kalutara, Sri Lanka, March 1980 (Prepared for A.I.D.), pages 21 ff. and Table 9.

From a planning standpoint, policy choices exist to reduce the problem. In staffing some facilities, it may be possible to move from physicians to the lower cost training and use of paraprofessional staff but the medical community remains strong throughout Sri Lanka, as in most of Asia, and such alternatives may not be practical unless the Government becomes more acutely aware of the economic and health care benefits which could accrue from alternative staffing and service delivery designs.

#### 6.12 Transportation

Throughout the health sector, transportation remains a key constraint to improving coverage of the under and unserved population groups.

The lack of vehicles has had several deleterious effects on the sector:

- 1) referral systems exist only in theory in the absence of transportation to deliver patients to the next higher level of care. The vast majority of peripheral units have no ambulance or backup vehicle and public transportation remains seriously underdeveloped in all but the most urban areas of the country. In such a setting, patients tend to bypass lower levels of care in favor of district and provincial hospitals. As a result, a highly inefficient utilization pattern has emerged with overcrowding of secondary and tertiary care facilities while primary care units which can treat the vast majority of patient health needs are often underutilized. For example, we saw pregnant women from rural areas spending several days in the waiting wards of the hospitals because they had come early to be sure that they beat the stork.

2) The situation has been compounded by the fact that lack of vehicles for primary care health personnel has hampered delivery of essential outreach services. Because public transportation is sporadic and undependable, many of the health-workers we interviewed have been unable to carry out their home visits or branch clinic operations. With the exception of the four days per month in which the Public Health Nurse in Mahaweli System H area is given a jeep to conduct clinics, she has not been doing any community health work. In other areas such as Kurunegala, the Public Health Midwives' actual population coverage has been significantly lower than the formal catchment areas due to the limited transportation and wide dispersion of the homes to be visited. In many areas, bus service terminates before the end of the PHM workday so that they have to walk home from rather distant villages at night.

3) Drug supplies and food commodity distribution remains dependent on timely transportation. Throughout the areas we visited, shortages of supplies were common and often linked to inadequate vehicles to support geographically large Superintendent of Health Services (SHS) areas.

Rising fuel costs, coupled with a recent 25 percent cut in the Government's fuel allowance for health districts, have reduced the use of existing vehicles. In Kegalle, for example, the MOH area had only enough fuel to run one of its two vehicles. As a result mobile team activities had been suspended. Priority was given to the ambulance to link the peripheral hospital with the base hospital. In light of the real constraints to using expensive, sophisticated vehicles in this largely rural country, testing of

alternative modes of transport has become essential. Externally assisted health programs have reportedly had much success with the introduction of relatively inexpensive vehicles. The health system has benefited most directly from the assignment of bicycles to PHMs. A UNICEF study in Anuradhapura strikingly illustrated the increased productivity from this low-cost input, as home visits quadrupled once bicycles were provided. PHIs interviewed during our field visit emphasized the contribution which motorscooters had made in increasing community coverage. The only problem noted was that 80cc scooters were not powerful enough for the highly mountainous areas. In Kalutara, PHNs and AMPs in the National Institute of Health Sciences field practice areas have recently been given mopeds, which likewise have substantially enhanced their ability to provide health services and supervise primary care health workers.

Finally, we should note that transport shortages are also a key bottleneck to the expanding and/or upgrading of water supply systems. The regional office of the Water Supply and Drainage Board at Anuradhapura highlighted the problem. Despite the large geographic areas for which it is responsible (encompassing both Anuradhapura and Trincomalee districts) the Office has only one jeep. The critical transportation situation is compounded by climatic factors since the poor road networks (particularly in the remote areas) are rendered virtually impassable during the rainy season.

### 6.13 Management

While we have stressed the lack of resources as a serious constraint on the upgrading of HPN services, there are also significant problems in the management of existing resources. The WHO-GSL Country Programming Exercise and more recent seminars have noted a declining effectiveness in providing health services, particularly in the rural areas. The managerial weaknesses, found at various levels of the Government, include: (a) a lack of integrated sector planning, (b) serious fragmentation in the program design, implementation, and evaluation process, (c) a personnel management system which does not provide incentives for good performance or enforce discipline or accountability in the case of poor performance, and so on.

Earlier, we noted the lack of a system for translating broad national HPN goals and plans into specific action and resource commitments. With such broad guidelines and operational plans, there are currently inadequate pressures and incentives for switching the emphasis from urban, curative-oriented activities to rural, preventive-oriented health services. While some change in this direction is occurring, the rate of change appears to be rather slow.

On the positive side, the GSL has taken some steps which could improve the availability of HPN services in the rural areas. First, the creation of District Development Councils could result in such programs as health being more responsive to local needs and conditions. It is planned that health boards or committees will be established at the district and lower levels of government. These should facilitate cooperation among the citizenry, health professionals, and local volunteers. Secondly, a National Health Council has recently been created with six standing committees to study and make recommendations on (1) primary health care, (2) medical research, (3) health manpower development, (4) indigenous medicine (5) drugs, and (6) management. All of these are important areas where an interministerial body like the National

Health Council could have an impact. While the initial analysis (by the Primary Health Care Committee) will reportedly be quite good, the need is still one of moving from analysis and goals to action commitments and deadlines.

A significant shift of funds and other resources within the Ministry of Health must take place if programs like primary health care and family planning (family health) are to be fully implemented in the rural areas.

The effective and impartial management of resources is also impeded by socio-economic, political, and cultural factors. The Indian Tamil minority is one of the groups which appear to be disadvantaged by such factors. At the Hantane Tea Plantation, for example, which is reportedly a typical estate, an estimated population of 1800 persons is served by just one RMP; there is no Public Health Nurse or Midwife. Drugs are critically low with supplies continually late and up to 60 percent below the requested level. Amidst reportedly low profits, the estate management has contributed only 1000 Rupees to supplement drug needs. The health contribution which the RMP can make, therefore, is significantly limited, at best. At the same time, sociocultural practices and discrimination mitigate against utilization of health services in the town of Kandy. Because Tamil women are reluctant to go to town without their husbands, a visit to the town health facilities mean the loss of a day's wages for two adults--a luxury that few can afford.

Our team was also advised that discrimination against Tamil women by some hospital staffs discourages utilization. Despite an estimated 62% of deliveries in institutions nationwide, the percentage of estate women delivering at hospitals is probably under 50%. Higher maternal and infant mortality rates in this population subgroup can be linked, indirectly at least, to such discriminatory practices and the economic barriers to

obtaining health care. UNICEF is initiating a project which will try to improve health services on the estates. It may be desirable for USAID to consider providing similar support, on at least a limited basis, since this is where the most urgent health needs are. However, we are also fully aware of the difficulty of USAID undertaking an activity which serves several isolated estate communities. Although UNICEF does not currently appear to want additional funding, a joint effort with UNICEF or some other intermediary might prove more feasible at a later date.

Since it is often difficult to distinguish between the political and the managerial barriers to policy and program implementation, we do not feel confident in prescribing any other USAID-supported intervention at this time. It is important in some HPN areas for a concerted donor effort to be made if the GSL is to shift its management practices and financial resources to increase health staffing, facilities, and logistical support in the currently underserved areas.

#### 6.14 Local Area Capabilities

In addition to the serious lack of local financial resources discussed in Section 6.10, there does not appear to be a strong organizational network in many local communities. This may reflect the long period of centralized colonial control and the persistence of centralized administration as independent Sri Lanka moved towards a socialized state. However, there is widespread participation in national elections and reportedly a relatively high degree of sensitivity to local complaints by the Members of Parliament (MP) from each district. The national political leadership has reported its intention to decentralize more decision-making to the district level, but it is not yet clear what this means.

The Team was told that, over time, various local organizations have been created to address certain needs but many tended to become politicized. Consequently, their fortunes rise and fall with partisan political trends. There are also important ethnic and caste factors which facilitate or impede community cooperation. These varied local conditions suggest that an analysis of the prospects for community participation should be made before AID becomes involved in projects whose success will be heavily dependent upon broad-based community support.

#### 6.15 Research and Evaluation Capabilities

As indicated under Section 3.2 (Data Limitations), operational research to guide program design and systematic program evaluation is almost non-existent within the health sector. Limited technical expertise in these areas, combined with shortages of health staff at all levels, have resulted in a relatively low priority being attached to research and evaluation over the past decade. At the same time, the development of an appropriate primary care model for Sri Lanka will unquestionably be

tied to the ability of the country to undertake such activities to ensure the effective and efficient utilization of resources.

In an attempt to fill the R & D void, the Government has identified the National Institute of Health Sciences at Kalutara, under its new mandate, as the focal point for applied research related to primary care. The feasibility of this approach must be examined, given the significant gaps in its staff and the need to carry out its primary roles of training the primary health care team and operating health programs in its 52 square mile field area. Addition of research responsibilities may, in fact, dilute staff inputs to the point at which none of its functions will be adequately performed. Further, with the exception of research on health manpower development, NIHS has no research experience which would indicate that it is technically qualified for a broad research role.

While some private institutions, such as the Marga Institute, have research capabilities, their primary interests and experiences tend to be focused on the conduct of macro level, long-term development oriented studies rather than operationally targeted program design and evaluation activities. To the extent that Marga Institute views itself as filling a critical research gap in addressing these fundamental long-term national problems, attempting to reorient its research program may be counter-productive. Even within a widely recognized research institution like Marga, the expansion into new activities is inherently tied to the availability of competent specialists. Staff turnover is also a problem as experienced researchers are attracted to other private organizations which can offer higher salaries.

An important but relatively untapped research resource may be the university community. The community medicine faculty at the

University of Peradeniya and the post graduate school of the University of Colombo should be considered as possible sources of talent for research and evaluation activities in future USAID-supported ventures. Their staffs appear to be enthusiastic and technically qualified, but research has been severely circumscribed by lack of funds.

## 6.2 Agency for International Development

### 6.20 Staffing

The USAID Mission has no U.S. or Sri Lankan professionals concerned with HPN activities on a full-time basis. The Regional Malaria Advisor (RMA) has handled malaria assistance and provided limited advice on health matters. The Assistant Program Officer has monitored centrally-funded activities, particularly in the population area. The addition of a Human Resources Officer (to handle HPN, education, and related areas) was just approved. Consequently, the USAID staff has been seriously hampered in trying to assess needs, plan activities, or monitor the growing activities and carpet-bagging forays of centrally-funded AID intermediaries. One case of poor management by such an AID grantee was being investigated by AID during our visit. Similarly, the pressures by AID/W and/or IDCA to produce special studies or reports on short notice are particularly onerous for a small Mission which is already fully occupied with managing its bilateral programs in a rather complex and sensitive host country environment.

In short, the limitations on direct hire staff pose the most serious constraints on the effective planning, implementation, and evaluation of new projects in the HPN sector. We are also assuming that the USAID's staffing problem will not be offset, at least in the short-run, by (1) alleviation of staffing problems within the CSL, (2) a significant decrease in the demands on staff time by centrally-funded AID intermediary contractor or PVO activities, or (3) increased quantity or quality of AID/W TDY staff assistance for project implementation.

### 6.21 Cooperation with other Donors

Reliance on other donors to provide critical project coordination or technical assistance inputs entails a certain element of risk. For example, the former WHO coordinator played an aggressive role in getting foreign donors and the GSL to participate in a priority program to expand the training capacity of the Institute of Health Sciences at Kalutara. USAID decided to support a building construction component as a less labor-intensive option. However, it was discovered that the overall plan of the Institute was being developed in rather piece-meal fashion. Consequently, USAID brought in a contract team to help ensure that its project inputs would be effectively integrated with the proposed training program and curricula (and vice versa). In other words, although USAID can and must work in concert with other donors, we cannot assume that such donors will attend to all of the issues which AID deems vital to an effective assistance project.

A more positive example of donor cooperation is provided by the malaria program where donor inputs have apparently been well coordinated, both by the donors and the concerned GSL bureau. This suggests that effective donor coordination also depends upon the growth of particular GSL institutions' managerial capabilities.

While the UNDP sees itself as the "lead agency" in international cooperation for the Water and Sanitation Decade, the GSL has reserved its right to directly seek assistance from various donors. Consequently, while AID can and should see that its assistance is consistent with the overall UNDP strategy, it must also respect the host country's right to be the ultimate coordinator of external assistance.

Our impression is that general cooperation among foreign donors is rather good in Sri Lanka. Cooperation often occurs through informal rather than formal means---including a monthly donors luncheon meeting,

There are some gaps in information exchange but we would attribute these more to an overload of activities, rather than to any conscious effort to withhold data.

The area of population is one where particularly close donor cooperation may be essential during the next few years. Since there are some differences of opinion among host country entities about the urgency of population programs and appropriate methods for implementing them, donors could find themselves working at cross-purposes. For example, SIDA has decided to terminate its contraceptive supply assistance in FY81, partly because it wants to see the GSL establish its own system for funding and procurement of contraceptives. While AID could probably gear up very quickly to provide oral contraceptives and condoms, such inputs should be made contingent upon appropriate actions or trade-offs by the GSL which indicate strong interagency and inter-sector commitments to implement a national population program.

#### 6.22 Program Concentration

Given current USAID staff constraints, it is apparent that the Mission must limit its assistance to a few discrete functional areas and the concomitant array of counterpart institutions. This is one of the major reasons why the Mission chose to focus its initial HPN assistance (aside from malaria) on Water and Sanitation. It was assumed that necessary engineering assistance and monitoring could come from the USAID Project Development and Support Division while the health aspects would be monitored by the New Human Resources Development Officer and one or two local hire Sri Lankan professionals. Concentration on water and sanitation (plus continued support for malaria control) limit somewhat the number of host country organizations and geographical areas which the Mission must cover.

While USAID's principal counterpart agency in the water and sanitation field will be the Water Supply and Drainage Board, Ministry of Local Government, it now appears essential to involve other agencies in order to help ensure that any new joint projects will impact on health status. For example, the Public Health Inspectors (PHI) of the Ministry of Health are seen by almost all parties as being the key personnel in the (1) monitoring of water quality, (2) acting on water quality problems related to health and (3) providing health education (especially as related to water use and excreta disposal). Similarly, consideration must be given to the role of the new District Development Councils in the design and implementation of projects. There are also some newly created inter-agency bodies which are to coordinate activities related to the Water and Sanitation Decade. If these coordinating bodies are able to achieve their purpose, AID's work will be greatly simplified.

If USAID intends to expand into the population and nutrition areas in any significant way, it will probably be critical to add additional U.S. and direct-hire staff to adequately cover the several governmental and private organizations which would be involved.

To summarize, the new USAID Human Resources position already approved will probably be fully employed with managing/monitoring bilateral or centrally-funded HPN activities already planned or underway. Most HPN assistance initiatives under the AID New Directions guidelines contain a large innovative element and, consequently, require consistent and continuous monitoring and trouble-shooting at all stages (planning, implementation and evaluation). While alternative less labor-intensive assistance efforts can be designed, AID/W must support such innovations by altering its current guidelines and expectations relating to the management, monitoring, and auditing of field projects.

### 6.23 Program Visibility

It was suggested to the Team that USAID programs should be selected or designed so as to demonstrate to Sri Lankans that U.S. assistance is impacting in a positive way on their development needs. We will defer to the USAID Mission and Embassy's wisdom as to the types of projects or activities which will satisfy this constraint.

However, USAID's participation in the rather successful malaria reduction campaign might be an area for increased media exposure. (This assumes that continued progress will be made in the future). Likewise, wider publicity could be given to special events or milestones in future projects (such as the cornerstone laying for the AID-financed building at Kalutara or initiation of construction activities in the Market Town Water Supply Project).

### 6.24 AID/Washington Strategy Demands and Support

In line with the Agency's policies promoting decentralization of authority, the Mission should be the principal participant in deciding on strategies and projects, provided that decisions are consistent with general agency guidelines and the "state of the art" in a particular technical field. Consequently, where a proposed project meets the Agency's general guidelines and there is no consensus of expert opinion on implementation tactics, the Mission should be given the benefit of any doubt. In the specific case of water investments, the specialists participating in the March 1980 AID-HEW Water and Sanitation Conference in Washington did not agree on the necessary and sufficient conditions for water to impact on health. However, no one denied that better water would contribute to improved health. While each specialist has his or her particular concerns, the following seem to be more generally accepted as necessary conditions for a water system to impact on health:

- (1) an acceptable quality and quantity of water is reasonably accessible to the target population,
- (2) the users are able and willing to use the water to increase personal and environmental hygiene,
- (3) the users must be willing to maintain and repair the system,
- (4) sanitation measures, including excreta disposal, should be an integral or complementary part of any water system.

The Mission will assist the GSL to develop and test ways of including these elements in the Market Town Water Project in Jaffna. Moreover, the consensus of opinion among health experts, donors, and lay persons contacted by our team in Sri Lanka is that improved water and sanitation will significantly reduce the high incidence of waterborne and water-washed diseases. Consequently, the need for safe water and construction of latrines is usually given the second highest ranking for health interventions in the GSL's health planning documents (the highest priority is accorded to anti-malaria measures).

In terms of host country policies, program priorities, and needs, a strong argument can be made for supporting the USAID decision to invest in water. Naturally, decisions about the specific cost-benefits must be made on a project-by-project basis. The extent and timing of USAID's investment in the water-sanitation sector will be particularly constrained by the shortage of experienced technical and managerial staff in the National Water Supply and Drainage Board and the apparent lack of strong systems for communal management of local water systems after they are constructed by the Board. There are also limited local resources available for construction of water systems.

Our team's recommendation that certain primary health services be integrated into any sector loan package further complicates the implementation tasks of USAID. AID/W can support the Mission's efforts by (1) providing an early endorsement of the HPN alternatives selected by the Mission, (2) increasing TDY services which directly support the Mission's chosen strategies, and (3) decreasing visits, demands for information, and other AID/W-initiated activities which do not fall within the current set of priorities agreed to by the Mission and the Asia Bureau.

## 7. SOME ASSISTANCE OPTIONS

Our brief review identified several areas where USAID assistance could have a favorable impact on health status. The selection of specific projects for USAID financing is a difficult and subjective process even when applying such basic criteria as (1) perceived HPN needs (2) GSL program priorities (3) GSL organizational and logistical capabilities and (4) current constraints on USAID (particularly staffing).

As suggested earlier, the most urgent interventions identified by the Sri Lankans seem to be the following, although there may not be a consensus on the ranking of priorities among these:

- (1) Malaria control
- (2) Water and sanitation
- (3) Nutrition
- (4) Family planning services (particularly sterilization)

There appears to be general agreement that malaria is still the most urgent health problem in Sri Lanka. The GSL is providing adequate financial and operational support to the current anti-malaria campaign and progress is being achieved. As mentioned in Section 5.5, the annual review to be made next spring will determine whether certain areas of the country have progressed far enough to be released from spraying. These and other review decisions will determine the extent to which additional USAID support will be required. It appears likely that we will be asked to provide some funding---particularly for insecticides---after our current inputs are used up (in 1984?). Consequently, it may be necessary to extend the current USAID malaria project or earmark part of a broader health project budget for malaria control. As long as the

GSL maintains its own high level of financial and operational support for malaria control, USAID should be willing to help where necessary. Among other things, an effective malaria control effort in the Mahaveli Development area will be critical to the priority resettlement scheme of the GSL.

### 7.2 Water, Sanitation and Health

Water and sanitation projects are likely to be given high priority by the GSL during the next decade, both to improve health and quality of life. In view of the close perceived relationships between current morbidity patterns and the poor water and sanitation situation, Sri Lankans and health donors in Sri Lanka are generally convinced that improving water supplies and sanitation (WSS) will reduce infant and young child mortality. Whether WSS interventions are more costly than other HPN interventions depends on such factors as (1) the population density of target areas, (2) whether one has a short or long term time perspective on the health status changes to be realized, (3) the methods of sharing capital and operating costs, (4) level of concern and support demonstrated by the host country, (5) efficiency of the implementing organizations, and (6) the related health activities which are linked to the WSS program. These are areas for which convincing and conclusive evidence on specific alternatives has not been developed. In Sri Lanka, we heard few people argue that water and sanitation projects should be undertaken in isolation from each other or from other health interventions. Consequently, we have assumed that such USAID investments in Sri Lanka should be for water, sanitation, and health, not simply for potable water. Thus, the USAID potable water sector loan being proposed for Sri Lanka should be considered in the context of a

water and health loan. This will certainly complicate planning and implementation but such an integrated approach is necessary to achieve the desired changes in health status. The delivery system in a particular area targeted under such a loan should be designed to produce:

(1) integrated water and sanitation facilities which can be maintained (technically and economically) by the consumers---individuals, groups or communities.

(2) continuing health education at the family user level.

(3) critical primary health services, such as pre-and post-natal care, assistance on deliveries, basic immunizations, oral rehydration instruction and supplies, contraceptive services, and health education. In targeted areas, USAID should be prepared to provide funding for such things as paramedical training, oral rehydration supplies, and oral contraceptives/condoms. We should encourage WHO/UNICEF to support the expansion of immunization coverage and UNFPA/SIDA to supply injectible contraceptives.

(4) data collection and analysis systems which provide timely information on operations and health impact.

While general constraints on planning were discussed in Section 6, GSL constraints on implementation of a major water and health project would include:

(1) limited construction and engineering capacity within the private sector and shortages of materials.

(2) shortage of experienced engineers and technicians within the Water Supply and Drainage Board, Ministry of Local Government.

(3) inadequate linkages between GSL water staffs and health staffs, particularly at the local level.

(4) the absence of good community organizational systems (in some areas) for operating and maintaining water and sanitation facilities.

On the positive side, the following factors should facilitate implementation:

- (1) widespread recognition of the value of water and sanitation improvements,
- (2) high literacy and interest levels among the general population (which should facilitate health education efforts),
- (3) efforts are reportedly underway to train health and water staffs on water and sanitation systems and the health linkages, and
- (4) an intention by the GSL to give high priority to the funding of water and sanitation projects during the next decade. (This suggests that the GSL would be more willing to borrow money from AID for water and health, rather than for other types of health projects.)

### 7.3 Nutrition

While we found a widespread concern about the need to improve nutrition, few specific interventions were proposed to our team. Following are some of the things which could be supported:

#### 7.31 Supplemental Feeding

Before considering any further "service" interventions (such as food supplements), there is a need to objectively evaluate the impact of current USAID-supported activities on the nutritional status of targeted groups.

#### 7.32 Surveillance

There is an urgent need for the GSL to obtain reliable national data on nutritional status, particularly as the Government continues to decrease its food subsidy efforts. USAID support could be provided to establish a national surveillance system within a GSL agency which is able to use the results for policy and program planning.

Another activity which can yield both information and nutritional improvement is the institution of a program for the continuous weighing/measuring and charting of infants and children. This effort could be carried out by local health volunteers and mothers, with support from the Ministry of Health's paramedical and health education personnel.

### 7.33 Oral Rehydration

We have already mentioned that oral rehydration instruction and service should be an integral part of the health services provided in communities targeted under the proposed USAID sector loan. Whether it would also be feasible for USAID to support a national effort would depend on the technical and commodity support which might be forthcoming under a new AID centrally funded oral rehydration project. However, before considering significant importations of oral rehydration materials, the prospects for local formulations should be thoroughly explored. An national effort in this area should help reduce infant mortality rates.

### 7.4 Family Planning Services

As mentioned earlier, contraceptive services should be an integral part of the delivery system established in any area supported under a USAID water and health loan. However, it may also be desirable and feasible to go beyond this and provide other support (such as oral contraceptives and condoms) for the national family planning program. Assistance to expand sterilization training and service could also be considered---under either a bilateral or centrally-funded project. The costs and the desirability of AID participation should be

evaluated after the UNFPA completes its current needs assessment and the GSL has committed more of its own agencies to a more energetic attack on the population issue. Given the USAID staffing constraints, the still somewhat sensitive nature of the area, and the lack of a strong GSL operational (as opposed to policy) commitment, it may be wiser to let UNFPA continue to take the lead in population donor activities for the present.

## 7.5 Other Areas

### 7.50 Paramedical Training

We have mentioned the importance of increased paramedical training and utilization as one means of extending HPN services in Sri Lanka. We have not considered any special activities beyond the new multi-donor effort to assist in the expansion and upgrading of training and research at the National Institute of Health Sciences (NIHS) at Kalutara. However, it appears desirable for USAID's proposed NIHS project to go beyond the original idea of concentrating on facilities development and assist on faculty training and development activities. People are expecting the Institute to do great things in turning the health system around, but it is encountering serious problems in such areas as staffing up for training and research. Our impression is that the Institute might move faster if it concentrated on training rather than research and if it made greater use of paramedical personnel as instructors (since it is apparently disadvantaged in its efforts to compete for scarce physician talent). It is interesting that the Minister of Health, during his recent U.S. visit, made a special plea for A.I.D. to support the Institute in its efforts to become the national focal point for health training. While it may not be feasible or desirable to plan for

full time advisory help, the USAID project should include adequate money for short term U.S. or third country consultants and for short term local and foreign training for the faculty. Since other AID supported teams have been working on the NIHS project design, our team did not spend much time in this area.

#### 7.51 Research and Evaluation

As suggested in Section 3.2, there is a need for substantial improvement in research and evaluation activities in almost all HPN areas we reviewed. However, since the GSL apparently does not see these as having high priority, USAID should also be circumspect in its research investments. As stated earlier, there is an urgent need to push for development of a national nutrition surveillance system. USAID and GSL could ask the CDC/Atlantic to assist on this under the current DS/Health RSSA with OIH/HEW (which expires in September 1980?).

At the macro level, support might also be provided to support research on population trends and their relationship to national development. However, we also sensed that some inter-organizational conflicts may need to be resolved in Sri Lanka before pursuing this. There should also be some assurance that the research outputs will be fed into the planning process. The new population planning unit in the Ministry of Plan Implementation may be the logical focal point for any USAID assistance, but its limited staff resources may require that local university talent also be harnessed. Our team did not assess the activities of the GSL census and statistics office, and this might also be a source of talent for longer term population research activities. The 1981 census will provide an opportunity to obtain good macro data.

## 8. RECOMMENDATIONS

Based on our brief review of the current situation in Sri Lanka, we believe that the following alternatives should be considered by the USAID Mission in planning for assistance during the next few years. While the alternatives are listed in some rough order of priority, changing conditions could justify a different ranking. We are also aware of the impossibility of being completely objective in the selection of action alternatives. As suggested in the discussion of constraints, where the "state of the art" is not well developed and no technical consensus exists, we would tend to defer to the desires of the host country and the Mission where they exhibit reasonable prospects of succeeding in their desired course of action. Finally, future development decisions by the GSL or major donors could quickly change the assumptions on which our recommendations are based.

### 8.1 Malaria Control

The Mission should be prepared to provide continued support for insecticide spraying and other malaria control measures and for a continuing education program. Consideration should also be given to funding of applied field research on alternatives to insecticides as malaria control measures. There will be a continuous long-term need for surveillance in currently malaria-free areas and in areas which may be released from spraying after the 1981 annual evaluation.

### 8.2 Paramedical Training

The Mission should continue to give high priority to the strengthening and expansion of training for health personnel and volunteers who will operate in the rural areas. At least for the near future, USAID's assistance should

continue to be focussed on the National Institute of Health Sciences' training activities, particularly those which directly support the GSL's efforts to upgrade primary health care in the rural areas.

### 8.3 Integrated Health and Water Sector Loan

The idea of a potable water sector loan originally stemmed from a PPC request to the USAID Mission to develop a sector loan which could be implemented with limited USAID personnel inputs. The water sector was chosen because of the high priority being accorded to improved water by the GSL, the World Health Organization, and other local donors and because the Asia Bureau's earlier HFN draft strategy gave high priority to water investments.

The Mission also felt that such investments were consistent with the AID Administrator's statement that AID would support the UN Decade of Water Supply and Sanitation in a substantive way. However, due to later disagreements within AID/W about the health benefits of water investments, the Mission was asked to review the decision to invest in this area. Our team's mandate was to explore assistance options in the health, population, and nutrition area, not to develop a detailed justification for or against a potable water project. We carried out this assignment as well as we could within the constraints imposed by time and information. It is our recommendation that the Mission proceed to discuss with the GSL the prospects for successfully implementing a loan-funded integrated water, sanitation, and primary health care project. It will be critical to reach early agreement on how these three program components will be coordinated at the national and local level, since several GSL agencies and local groups will be involved. While such a project may be perceived as logically fitting into the GSL coordinating mechanisms being established for the UN-sponsored Drinking Water Supply and Sanitation Decade, USAID needs to assure that the primary health services component will also be given adequate attention. This does not mean that the

Ministry of Local Government, Housing and Construction could not also be designated as the GSL implementing agency under the AID loan, but some interministerial mechanism is needed to facilitate cooperation among health and other personnel on program design and implementation.

Activities to improve water and health services in the Jaffna area should provide some good insights into strategies and techniques to be applied in other areas which would be covered under the USAID water and health loan. At the same time, we recognize that there may be considerably diversity among the areas to be covered. For example, we believe that the first priority for inclusion should be the Mahaveli districts in which USAID is making other investments. There is a need to help establish basic health and water services as one of the prerequisites for successfully settling the area. The current low level of health services and the potentially critical problems which could result from changes in the population and environmental patterns suggest that Mahaveli should receive urgent attention.<sup>1/</sup> However, we also recognize that the rural nature of the area and low population density make water investments less attractive from a cost-benefit viewpoint.

While we did not attempt to identify the specific components of a loan program, there are things which our review suggests will be important. First priority in the allocation of joint funds should go to the development of integrated health, water, and sanitation service delivery systems in the field. This does not exclude the provision of support for increasing the institutional capabilities of national or district agencies and local contractors whose performance is critical to the achievement of field objectives (e.g., the Water Supply and Drainage Board and selected units of the Ministry of Health).

Following are some of the components which should probably be included in the proposed loan package:

- (1) Technical assistance and training (foreign and local) to support the

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<sup>1/</sup> Some good preliminary thinking about Mahaveli is contained in the MOH's Proposal for Health Services in the Operational & Accelerated Mahaveli Development Areas, March 1979.

implementation of GSL and USAID objectives under the Water Supply and Sanitation Decade Plan and under national plans to upgrade primary health services (priority should go to the services discussed in Section 7.2), including:

- (a) Assistance to improve the organization, staffing, administration and management, and transport systems within the Water Supply and Drainage Board.
  - (b) Assistance for training of community-based Ministry of Health staffs and village health volunteers in water, sanitation and preventive health.
- (2) Development of integrated water, sanitation, and primary care services, including improvement of linkages to secondary and tertiary care systems for the Mahaveli development areas of direct concern to AID.
  - (3) Establishment of systems for continuous water quality monitoring, analysis, and quality control (covering both town and village water supplies).
  - (4) Establishment of a macro-review and standards development unit for water and sanitation within the Water Supply and Drainage Board.
  - (5) Establishment of an "appropriate technology" activity to develop and test safe and economical latrines which can be built by low income families in rural areas.
  - (6) Improvement of the national and district data reporting and utilization systems for water-borne and water washed diseases.
  - (7) Development and evaluation of organizational and operational schemes for providing integrated health, water, and sanitation services in the rural areas (i.e., design and testing of prototypes for national replication).

USAID should be prepared to help fund transportation and staff housing where these will be critical to services in remote areas.

#### 8.4 National Nutrition Surveillance System

To help meet the urgent need for the continuous monitoring of nutritional status island-wide, USAID should consider providing support for establishing a national nutritional surveillance system. Technical assistance in the design and implementation of this project could be provided through the U.S. Public Health Service's Center for Disease Control to the Ministry of Plan Implementation and the Ministry of Health. This support could include the provision of basic mini-computer equipment to ensure timely processing of data and feedback to guide food and nutrition policymaking.

#### 8.5 Family Planning Services

The Mission should consider using bilateral or DS/POP funds to provide the following types of support to narrow the gap between the demand for family planning services and their availability.

- (1) Provision of oral contraceptives and condoms for village level distribution (in concert with UNFPA and other donors).
- (2) Funding third country orientation training on population problems for opinion leaders, policy officials, or administrators.
- (3) Funding third country training for physicians in public or voluntary organizations.
- (4) Provide funds to help upgrade local facilities (equipment, operating rooms) and staff in order to meet the unmet demand for sterilization services.
- (5) Support the establishment and/or upgrading of training centers for sterilization techniques through the DS/POP programs with JHPIDGO --- John Hopkins Program for International Education in Gynecology and

