

NUTRITIONAL STATUS OF SRI LANKA

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In this paper M. Zuhyle, who is a Project Director of CARE-Sri Lanka, handling the Thripasha Program, discusses how nutrition intervention programs have contributed towards a better quality of life in Sri Lanka. The views expressed in this article are entirely his and have no relevance to his official capacity at CARE. This paper is part of a larger study on Food-Aid and Nutrition and emphasises the need for further research in this field.

The nutritional standards of a society are best understood by its indicators. The directly relevant indicators revealing the underlying character of the nutritional status of the country are Infant Mortality Rate (IMR) Maternal Mortality Rate, Neo - Natal Rate, and the morbidity rates. The levels of caloric and protein consumption indicate the causes of malnutrition. Though other indicators like birth weight, deficiency of Vitamin A, incidence of goitre etc., are important, the relevant data are not available for analysis. Though some groups have collected birth weight data, according to officials of the Department of Census and Statistics they are not scientifically collected and therefore the error factor could be high. Such data have not been considered for analysis in this paper. Diseases such as deficiency of Vitamin A and goitre are included under the category of "other diseases" in the table. Though there are other aspects to the status of nutrition they are either secondary indicators or the resultant effects of these variables. Analysis of the behaviour patterns of these indicators would reveal the Sri Lankan status.

VARIABLES

Infant Mortality Rate

Infant Mortality Rate (IMR) in Sri Lanka is remarkably low as compared to countries with similar economic backgrounds. Sri Lanka is classified as a low income country, earning a per capita income of US \$ 270. Most

countries in this group would reveal an infant mortality rate in the region of 100 -150 per thousand live births (Ghassemi; 1983.) The IMR in Sri Lanka, since the end of the second world war has been steadily declining with a few minor fluctuations. The recorded rate of 37.1 in 1978 which is the latest figure available is indeed a low rate for an economy like that of Sri Lanka (Ref. Table 1).

In a recent review of the needs of children. (it has been maintained that a strong focus on the expansion of health care services and universal free education, during the last fifty years, is the most critical factor in increasing life expectancy of children and their chances for survival. In 1930 the IMR in Sri Lanka was 175 which declined to 82 in 1950, 52 in 1969, 47.5 in

1979 and 40 in 1980. (Ghassemi, 1982). The rapid decline in the first two decades and the lower rate of decline in the past decade need not cause anxiety. It is not possible to expect the trend to continue at the same pace. The improvements in the field of economy and education introduced in the 1930s, 40s, and 50s contributed to drastic changes in standards of health. Once the welfare facilities of the society were raised, the rate declined to a minimal level. This is broadly true in any society. If the current declining trend continues, within a short period of time, Sri Lanka would reach the rate of a developed western country.

Maternal Mortality Rates

Maternal Mortality Rate (MMR) for the ten year period from 1969 to 1978 had been declining at a minimal rate. The rate in 1969 had been 1.5 while it has dropped to .8 in 1978.

TABLE 1
MORTALITY RATES IN SRI LANKA AS INDICATORS OF MALNUTRITION

	Maternal Mortality		Infant Mortality		Neo-Natal Mortality	
	No	Rate	No	Rate	No	Rate
1969	571	1.5	19,663	52.7	11,918	32
1970	535	1.5	17,466	47.5	10,914	29.7
1971	521	1.4	17,155	44.8	11,352	29.7
1972	514	1.3	17,562	45.6	11,666	30.3
1973	444	1.2	17,002	46.3	10,994	29.9
1974	375	1.0	18,724	51.2	10,664	29.1
1975	385	1.0	16,949	45.1	10,142	27.0
1976	355	0.9	16,633	43.7	9,955	26.1
1977	383	1.0	16,511	42.4	1,087	25.9
1978	341	0.8	15,019	37.1	10,136	25.0

Death of the child within one month of birth

Source: *Bulletin on Vital Statistics 1979. Dept. of Census & Statistics*

Though it only a .7 drop, considering the range, it is almost a 50 percent reduction. If the trend continues then the MMR would come down to a zero level within a short period of time (Ref. Table 1).

Neo-Natal Mortality

Neo-Natal Mortality (NNM) is the death of the child within one month of its birth. The recorded rates of NNM for the period under review, unlike the IMR and MMR, are negligible. It had fluctuated between 32 and 29.1 from 1969 to 1974 and declined only up to 25 for the four years up to 1978. (Ref. Table 1)

The slow rate of decline of Neo-Natal Mortality rate is dependent on the consumption of food at pregnancy. The mother when pregnant should consume additional quantities of protein and calories. Insufficient quantities contribute to the birth of an undernourished infant which does not survive more than a month.

Neo-Natal rate is a pre-determined situation due to the factors influencing the mother at the time of pregnancy. Maternal malnutrition and intrauterine nutritional environment are very closely related to chronic and seasonal hunger, early marriage, frequent pregnancies, frequent infections, hard physical labour and large family size. It is a firm belief that nutritional anaemia which is a major cause of malnutrition of infants is also a major public health problem, difficult to detect and cure. It is mostly prevalent among the low income socio-economic groups, women and children. Though, in Sri Lanka nutritional anaemia had been reported as a major problem as far back as 1940, the records of 1981 show that it is the seventh leading cause or morbidity in government hospitals. The Medical Research Institute and World Health Organization have estimated 50% - 70% of the pregnant and lactating women in Sri Lanka as 'anaemic, and lack of iron is the primary deficiency (Ghassemi; 1983). It is surprising that the anaemic cases are not detected and cured before the greater damage is caused.

The declining trends of Infant Mortality Rates, Neo-Natal Mortality,

and the Maternal Mortality are best illustrated in graphic form helps to understand the declining trends of IMR, and MMR, but shows a slow declining rate of neo-natal mortality.

Life Expectancy

Life expectancy rate at the age of one year of the child in Sri Lanka is close to that of a developed country. The Table II shows the comparison of the Sri Lankan rate with that of Nigeria, India and the United States of America. A comparison with these countries shows that the rate for Sri Lanka is much higher than that of other LDCs and it is closer to the rate of the USA.

TABLE II

LIFE EXPECTANCY AT THE AGE OF ONE YEAR

Country	Nigeria	India	Sri Lanka	U.S.A.
Rate	49	56	69	72

Source : *Development Digest, January 1980*

The World Development Report of the World Bank released in 1983 commends the high life expectancy rate of Sri Lanka. Compared to the major countries in the Asian region the Sri Lankan rate of 69 is the highest. Even China comes below Sri Lanka with the average rate of 67 (The Sunday Observer, 16.10.1983).

MORTALITY CAUSED BY MALNUTRITION

Accuracy and Limitations of the Data

There are difficulties of determining the accuracy of data gathered. Inaccuracies occur in recording and interpreting the data at various institutions. Among the reasons are :

(i) All causes of deaths are not registered in an orderly classified manner. The causes given sometimes, are not the real causes. At the time of recording the causes of death, sometimes by non-professionals, the specific terms classified by WHO and universally accepted codes are not used

(de Mel). Due to this kind of limitation in recording, the available classifications may not be accurate. However, there is no other dependable data for a considerable period of time available for analysis.

(ii) The other limitation is that the recorded data are available only for a few years from 1975-1978. There are no data available prior to this period. The more recent data have not been published by the authorities concerned. The analysis therefore is limited to the four years of data available for the purpose.

(iii) The classified causes of death registered are malnutrition, anaemia

of pregnancy, Protein Energy Malnutrition (PEM) and Anaemia. The PEM is referred to as Mandama by the Department of Census and Statistics. Anaemia is referred to as Pandu (De Mel). These two terms, Mandama and Pandu are in common usage both in Sinhala and Tamil and often broadly referred to as diseases of malnutrition. Therefore there are possible distortions on the recorded figure than what is actually referred to.

Behaviour Patterns of Variables

Considering the data within the limitations set out above, the figures available with the Department of Census and Statistics, show a declining trend in all cases of recorded diseases causing malnutrition. The declining rate is an indicator of declining malnutrition. The recorded diseases of malnutrition causing deaths at this declining trend should result in a drop of the malnutrition levels to a bare minimum in a short period of time, if the rate of decline of the past few years is maintained (Ref. Table III).

TABLE III

REGISTERED DEATHS CAUSED BY DISEASES OF MALNUTRITION

	Anaemia of Pregnancy (Nos.)	PEM	Anaemia (Pandu)	All Others
1974	7	N/A	N/A	N/A
1975	11	835	3,836	3,070
1976	7	586	2,996	1,937
1977	9	425	2,236	1,549
1978	4	262	1,769	1,039

* Protein Energy Malnutrition

Related to Malnutrition

Source: *Bulletin on Vital Statistics 1978 & 1979*

Sri Lankan Status Compared with Other Countries

The declining indicators of malnutrition rates in Sri Lanka are best analysed in comparison with some of the neighbouring low income countries and some of the middle income countries. Though Sri Lanka records a very low GNP its position in quality of life as seen from the indicators are satisfactorily high (Ref. Table IV). It is evident from this Table that the Infant Mortality Rate is almost a third compared to two other countries in the low income groups of countries, namely India and Pakistan. It is almost equal to countries such as Chile and Venezuela in the middle income group of countries. Korea records 34 as against the 44 of Sri Lanka. The Infant Mortality Rate (IMR) compared to the other two countries is almost a sixth compared to India and Pakistan and higher by one (or 10%) compared to Korea, Chile and Venezuela, all of which are in the middle income group of countries. The NI

on the other hand is almost double the rates for Chile and Venezuela while it is only 10 percent and 5 percent of the extremely high rates for India and Pakistan respectively. Maternal Mortality per 100,000 Sri Lankans is the lowest among the three

low income and the three middle income groups. These indicators and their behaviour patterns have a direct relation to consumption habits. The higher the consumption of nutritional food, the higher the nutritional level, and vice versa. The analysis of food consumption would reveal relations between levels of nutrition and consumption of food.

to country. Similarly sizeable populations in some of the less developed countries consume much less than the minimum recommended levels. For example in Pakistan, Bangladesh and Morocco 28 percent or more households consume less than 90 percent of the FAO/WHO calorie requirements. Bangladesh and Morocco both have a relatively large proportion of their population consuming less than 1800 calories while their minimum requirements levels are 2020 and 2276 respectively. An estimated 35 percent of the Bangladesh and 21 percent of the Moroccan population consume less than 1800 calories which is much less than the required levels. Pakistan on the other hand has only 27 percent of the population consuming at this level (World Bank Staff working paper No. 328; May 1979;). With regard to Sri Lankan calorie requirements, there appears to be a dispute with regard to the recommended quantities. The FAO/WHO classification suggests 2000 calories while the Department of Census and Statistics has considered 2200 as the recommended level for the purpose of the nutritional status survey conducted in 1969/70 (Austin; 1981;) Dr. De Mel, one of the well-known nutritionists in the country, has taken the view that 2200 calories and 48 gram protein levels are accept-

TABLE IV MORTALITY AND MORBIDITY IN LOW AND MIDDLE INCOME COUNTRIES

	Low Income Groups			Middle Income Group		
	Sri Lanka	India	Pakistan	Korea	Chile	Venezuela
Infant Mortality Rate (%)	44	123	126	34	43	42
NMR (%)	3	17	18	2	2	2
Maternal Mortality (Per 100,000 live births)	49	450	600	N/A	131	68
IDR (% of under 5 years deaths)	4	40	20	N/A	1.7	1.94

Source: UNICEF June 1983

Consumption of Calories and Protein

The calorie and protein consumption requirements vary from country

able levels. (Jayantha;1983;). However, for the purpose of this analysis, and in order to avoid controversy the widely

used classification of 2200 calories is taken for analysis.

(i) Table V provides the per capita calorie and protein supply for six years from 1976 to 1981. The calorie data since 1977 is steadily declining and picks up slightly in 1981. The protein supplies had been declining with the exception of 1978 and 1981.

TABLE V

SUMMARY OF FOOD BALANCE SHEET- PER CAPITA CALORIE, PROTEIN SUPPLY PER DAY		
	Calories	Proteins
1976	2,172	46.28
1977	2,343	49.20
1978	2,325.41	52.21
1979	2,316.6	48.15
1980	2,169.4	45.97
1981	2,200.12	47.10

Source: *Pocket Book of Statistical Data of the Republic of Sri Lanka 1976-1981*

(ii) The decline in calorie and protein supplies should contribute to the deterioration of the nutritional standards of the country. But, on the contrary, as illustrated earlier, all other indicators are showing positive signs. The reasons for the contrasting rates are that the protein supply, though declining, has not dropped lower than the suggested average of 48 grams per person per day. The lowest ever decline had been 45.97 in 1980 which is only 2.03 less than the standard per capita calorie supply. On the other hand consumption by most people had been more than the suggested level of 2200 calories per day. The decline, therefore had no remarkable effect on the society. In other words most people received their minimum requirements of calories.

(iii) Comparing Sri Lankan consumption patterns of calories with other countries it is remarkably high. As much as 84 percent of the population is consuming 2400 calories, 7 percent of the population consumes less than the minimum level of 2200 (Table VI). Therefore, comparatively, the Sri Lankan consumption patterns

TABLE VI

CALORIE REQUIREMENTS

SRI LANKA 2000 Minimum Level				
Consumption below	2400	2200	2000	2000
Percentage	84	41	07	0

Source: *World Bank Staff Working Paper No.323 May 1979*

have been sufficiently high to prevent a drastic increase in the rate of malnutrition.

Findings of the Nutrition Status Survey

The declining rates of the indicators are further supported by the findings of a recent report published by the Ministry of Plan Implementation. The findings of chronic malnutrition is compared satisfactorily with the survey conducted by the Centre for Disease Control (of U.S.A.) in 1975/76. The comparison of the two sets of data could result in some distortion since both Surveys have not used the same sample frame, though both cover inter-related areas. The first study done in 1975/76 had been based on S.H.S. (Superintendent of Health Services) areas while the second one conducted in 1979/82 had been based on Administrative Districts. Table VII shows that due to this difference in the sample frame there can be some distortion, particularly in the Nuwara Eliya district which is large, while the other areas will not alter the picture with great variations, as the SHS areas cover a wide area of the districts. Therefore, for the purpose of comparison possible distortion is ignored.

What is important for this analysis from the comparative figure is not the

magnitude of the rate by which it has declined but the fact that there has been a decline. The declining trend is proof that the nutritional standards in the country have been improving. Sri Lankan nutritional status on estimation, using PQLI technique, rates high among LDC's.

Comparison of the Quality of Life Method

Though the analysis of Gross National Product provides a good indication of the economic levels of a country, these calculations do not provide for the non monetary social welfare measures in sufficient detail. The Physical Quality of Life Index method developed in the recent past, quantifies those indicators and assesses them accordingly. These calculations show that some of the low income and middle income countries have a higher level of nutritional and social status than what they ought to have within their poor GNP. The indicators such as infant mortality rate, and the life expectancy at the age of one year are brought down to a scale and the Physical Quantity of Life Index Rate for the country is determined. (Morris 1981). The rates of these indicators are resultant factors of the welfare measures provided by the country for its people. Therefore, the economi-

TABLE VII

CHRONIC MALNUTRITION

1975/76	1979/82	Deviation
Kandy SHS 49.6%	Nuwara Eliya District 34.6%	15%
Mannar SHS 29.6%	Mullaitivu District 28.1%	1.5%
Jaffna SHS 28.4%	Jaffna District 25%	3.4%

Source: *Food and Nutrition Policy Planning Division, Ministry of Plan Implementation; 1983*

cally quantifiable variables have been brought into focus to determine the social status of the country.

Sri Lanka's Position

The PQLI technique assists in analysing the status of a country or countries comparing both with the GNP terms and in PQLI rates. The countries with a high GNP have not always proved to have a high level in terms of quality of life. The welfare measures in those countries have not sufficiently developed to have a high welfare state. Some countries and States with a lower GNP, on the other hand, have developed a welfare state and record a high level of PQLI. Sri Lanka with a low infant mortality, high life expectancy rate and high literacy stands out above most of the Less Developed Countries. The Table VII shows Sri Lanka's per capita income at a very low level of US\$ 179 but has a PQLI of 82. U.S.A. with the highest rate of PQLI records 94 while Qatar with a per capita income of US\$ 11,779 and United Arab Emirates with US\$ 14,368 record PQLI rates of 31 and 34 respectively. The rates of these two rich countries are much less than even the average of 40, for the low income countries. Sri Lanka's rate of 82 on the other hand, stands out much above these rates. Compared to a selected number of countries in the low and middle income group, only three countries namely Cuba, Guyana and Western Samoa record greater points on the scale, than that of Sri Lanka.

The Sri Lankan welfare society has maintained a healthy society with satisfactory levels of almost all vital indicators. Behaviour of the indicators has been influenced by various schemes of health, education, subsidised food, etc. Further improvement of the indicators should be its concern and should be constantly under surveillance. The benefit schemes presently available should be either improved or if changed, should be substituted with well planned out schemes considering all implications to society. The nutrition intervention programs may have substantially contributed to the better quality of life in Sri Lanka. Some of

TABLE VII

COMPARISON OF PER CAPITA GNP AND PQLI FOR SELECTED LOW INCOME, MIDDLE INCOME AND HIGH INCOME COUNTRIES

	Per Capita GNP US\$	PQLI
All Low-income Countries (average)	155	40
Sri Lanka	179	82
Kerala State, India	126	68
India	133	43
All Lower-Middle-Income Countries (average)	340	67
PQLI of 77 or over		
1. Cuba	640	84
2. Guyana	559	85
3. Grenada	465	77
4. Korea, Republic of	464	82
5. Western Samoa	300	84
PQLI of 68-75		
1. Mauritius	552	71
2. Paraguay	533	76
3. Albania	530	75
4. Colombia	526	71
5. Ecuador	505	68
6. Philippines	342	71
7. Thailand	318	68
8. China, People's Republic of	300	
All High-Income Countries (average)	4,404	92
1. United Arab Emirates	14,368	34
2. Kuwait	13,787	74
3. Qatar	11,779	31
4. Libya	4,402	46
5. Saudi Arabia	3,528	28

NOTE: The figure of GNP and PQLI are based on 1970 data.

Source: *Morris & D. Morris*
Physical Quality of Life Index (PQLI)
Development Digest Vol. XVIII No. 1 Jan. 1980

the intervention programs, on a close examination, could reveal the desired results. Since the Thripasha Program affects the variables of Infant Mortality rates, Neo-Natal Mortality rates, the Maternal Mortality Rates, etc., detailed analysis of the variables in relation to the program could bring out some interesting and useful contributions. Nutritional status of the country should be viewed in relation

to the nutritional intervention programs. The effectiveness of the programs in operation should influence the behaviour of the indicators. Though it may not be possible to attribute, conclusively all credit to a single program, it could as one in the package have contributed to the better standards. A closer study of the program would help to understand its contribution.