

# Health, Water and Sanitation

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## Introduction

It has been estimated that globally 3.4 million people, mostly children die annually from water related diseases. These are mostly preventable if basic water supply, sanitation and hygiene are ensured. Sri Lanka being a middle income developing country is also not an exception where diseases resulting from poor sanitation and bad hygiene rank among the leading causes of hospitalization and ill-health.

Good health is considered as the essence of development and the gateway to poverty alleviation. Therefore, provision of safe water supply, adequate sanitation and hygiene could be the powerful tool to protect health and could be used by individuals, households and communities to improve their quality of life. Protecting health improves productivity and leads to development. As such safe water supply, adequate sanitation and hygiene are considered among the basic human rights.

Simple interventions like improving the availability and quality of water in the community and improving the household level hygiene and sanitation as well as creating awareness of these issues – of what they are and how they work, and access to information on water, sanitation issues can significantly bring down the burden of disease and misery especially among the especially among the marginalized and the poor.

## Health Policy

Broad aims of the health policy of Sri Lanka are:

- Increase the life expectancy by reducing preventable deaths due to both communicable and non-communicable diseases.
- Improve the quality of life by reducing preventable diseases, health problems and disability and by health promotion.

## Services

- The responsibility for the provision of water supply lies with National Water Supply and Drainage Board.
- The responsibilities for refuse collection and disposal, housing and sanitation, food safety and hygiene lies with the local Authorities.
- The responsibility of prevention and control of environmental pollution lies with the Central Environmental Authority under the Ministry of Environment and Natural resources.

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## Role of the Ministry of Health

The Ministry of Health and its officials assist these agencies to perform their functions more effectively by providing health related advice, technical guidance and support and also participating in some of the activities.

Some of the Acts and Ordinances related to water, sanitation and environmental protection for which the Ministry of Health is responsible for implementation either directly or in an advisory capacity are listed below:

- Housing and Town Improvement Ordinance
- Nuisances Ordinance
- Wells and Pits Ordinance
- Quarantine and Prevention of Diseases Ordinance
- Food Act
- Cemeteries Ordinance
- Dairies and Laundries Ordinance

## Objectives and Strategic Interventions

1. To ensure the provision of adequate and safe water by regular monitoring of water supplies and disinfecting polluted supplies through the medical officers of health and public health inspectors at divisional level.  
*Water quality monitoring of all public water supply schemes in the area at least once a month by measuring the free residual chlorine content of water at source and points of consumption. Chlorination of all wells when pollution is suspected e.g. after floods, during epidemics and diarrhoeal disease.*
2. To motivate the community to consume water that is safe, through health education.  
*Advise the community to use boiled, cooled water for drinking.*
3. To ensure the sanitary disposal of excreta by advising on the proper construction of excreta disposal systems, and assist the community in the construction of sanitary latrines by providing financial assistance to low income householders.  
*Promotion of use of sanitary latrines by community is through health education as well as by enforcing the provisions of the relevant legislation related to housing (Housing and Town Improvement Ordinance) which requires all new houses have to possess toilet facilities in order to obtain approval from the local authorities.  
Rs. 3000/= is provided to those with a monthly income less than Rs. 2500/= as financial assistance to construct a sanitary latrine.*
4. To ensure the proper disposal of refuse by advising and assisting local authorities and individual householders on sanitary methods of refuse disposal.  
*In keeping with the Basel convention and the National policy on solid waste management, the department is giving special attention to the disposal of "health care" waste generated by tertiary state health care institutions.*
5. To ensure the use of habitable dwellings and prevent the construction of insanitary dwellings

6. To maintain high standards of food safety and hygiene by regular inspections of food handling establishments, food factories etc., and ensure prevention of contamination, adulteration, and fraudulent presentation of food by regular monitoring of food offered for sale.
  - Registration of all food handling establishments.
  - Regular inspection & grading of food handling establishments.
  - Regular sampling of food items for quality and evidence of contamination.
7. To ensure proper sanitation of markets, fairs and festivals through regular inspections.
8. To ensure a safe working environment by regular inspection of work places and advise on the prevention of hazards at work and environmental pollution from industrial establishments.
9. To ensure the provision of public health measures required during natural disasters such as floods, landslides, storms and civil disturbances.
10. To promote community participation through community health education and community mobilization through volunteer health workers.

## **Institutional Structure**

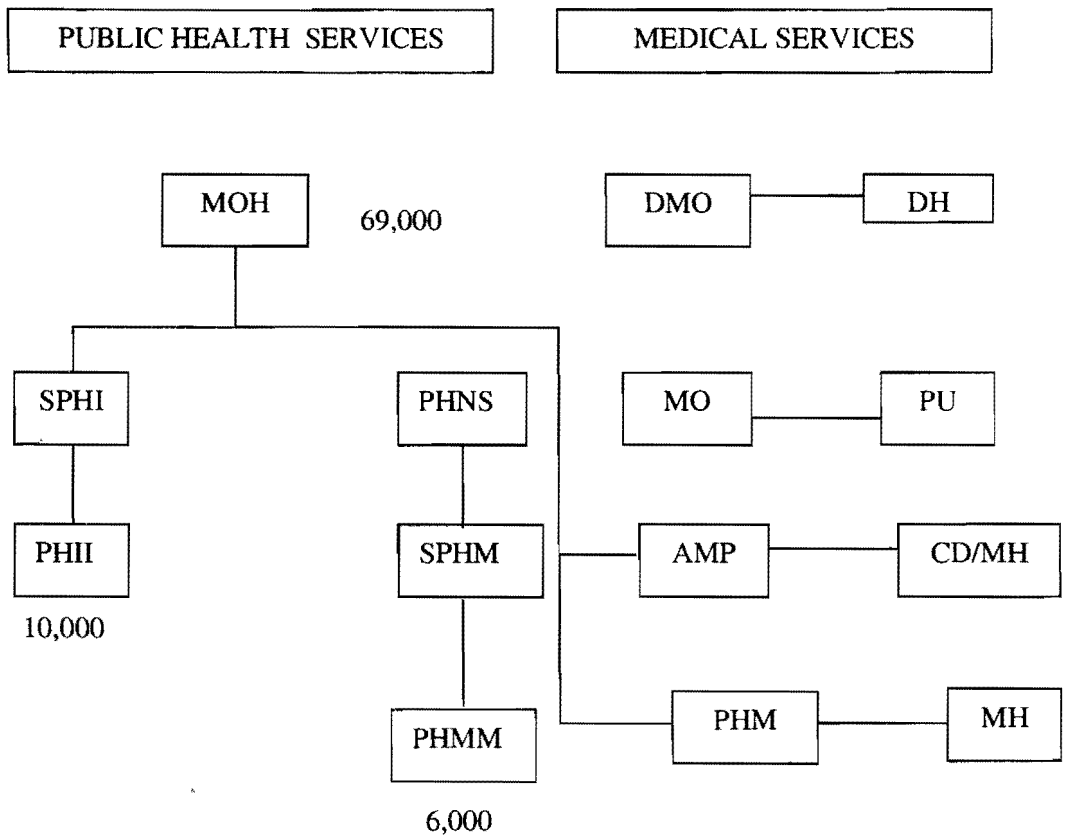
The health services in Sri Lanka has two, more or less distinct and parallel components with varying degree of integration at different levels, viz. the medical services providing curative care and the public health services providing preventive and promotive healthcare, supported by laboratory and other ancillary services.

Administratively, there are four levels viz. central, provincial, regional (district) and divisional.

<b>CENTRAL</b>	Ministry of Health Dept. of Health	Director General of Health Services
<b>PROVINCIAL</b>	Provincial Ministry Provincial Dept. of Health Services	Provincial Director of Health Services (PDHS Deputy PDHS)
<b>DISTRICT</b>	(Regional)	

**At the divisional level**, where the community level interventions are undertaken, health care is provided through:

- a) a network of medical institutions including district hospitals;  
and
- b) a network of health units providing public health services



*Diagrammatic representation of the divisional level Health System*

Key:	MOH	- Medical Officer of Health	DMO	- District Medical Officer
	PHII	- Public Health Inspectors	DH	- District Hospital
	SPHI	- Supervising PHI	MO	- Medical Officer
	PHNS	- Public Health Nursing Sister	AMP	- Assistant Medical Practitioner
	PHMM	- Public Health Midwives	CD	- Central Dispensary
	SPHM	- Supervising PHM	MH	- Maternity Home

The Medical Officer of Health – currently designated as Divisional Director of health services, in order to provide guidance, support and leadership for all health development efforts, as the chief health manager of the division, while maintaining good public relations, co-ordinates with the Divisional Secretary, Heads of other health related sectors, Chairman and members of Local Government bodies, Members of the Parliament and Provincial Council in the Division, religious and community leaders, Non-governmental organizations, private practitioners, and officers in – charge of other institutions.

### **Achievements and Current Issues**

Successive governments in Sri Lanka have always recognized the UN declaration of human rights (1948) that every one has the right to a standard of living adequate for the health and well being

of oneself and one's family including food, clothing, housing, medical care and education. This has served as the motivating force for successive governments to invest heavily on human development, thus adopting a policy of providing free health care services and free education to its entire people. Although this has helped Sri Lanka to achieve a better health status at a modest average per capita income of US \$ 856 (2000) when compared to other countries of comparable per capita income, issues related to quality of life and equity remained poorly addressed. One such issue is that hitherto more attention has been given to the role of water in disease transmission and less to its role as a household level and indirectly as a means to maintain health problems related poor living conditions, in-adequate sanitary facilities, malnutrition, changes in life style and other behavioural factors.

The majority, exceeding 80% of the population reside in rural areas, since basic necessities such as health and education facilities and transport and communication modes, which are being improved by successive governments since independence, are accessible without much difficulty. Nevertheless, inadequate coverage of services does occur especially in remote rural areas and the plantation sector due to lack of policy, improper planning and inequitable distribution of facilities and resources. A survey done in one of the districts (Hambantota) showed high prevalence of indebtedness during bouts of illness and obtaining loans at times of illness. This showed clearly how poverty and health are interrelated.

Urbanization has been rather slow in Sri Lanka and urban rural composition has remained almost static through out the years. However, the changes in life-style resulting from rural to urban migration often adversely affect the urban poor, which is further aggravated by rapid unplanned urbanization resulting in unemployment, poor housing with insanitary conditions.

### **Growth of Urban Population**

Year	Percentage of urban population
1946	15.4
1958	15.3
1981	(14.8) **
1994	(15.5) **

\*\* NEP not included

Source: Dept. of Census & Statistics

## Water Supply & Sanitation (percentage of availability)

		1981	1993	2000
URBAN	WATER SUPPLY		87	95.6
	SANITATION	84	67	86.5
RURAL	WATER SUPPLY		49	74.6
	SANITATION	65	60	72.6
<b>TOTAL</b>	WATER SUPPLY	53		75.4
	SANITATION	69	61	72.6

Note: In the estate sector access to safe drinking water is 24.8% and sanitation is 35.5% (Source: DHS Survey 2000 Preliminary report)

## Leading causes of hospitalization

Intestinal infectious diseases are still an important cause of hospitalization. The picture has not improved much during the past years. It ranked as the 4<sup>th</sup> leading cause of hospitalization in 1994 and as the 6<sup>th</sup> in 2000 and accounted for 4.1 percent of discharges. It is also a major cause of hospitalization in all districts. It ranked as a 12<sup>th</sup> leading cause of hospitalization in the Colombo District during 2000 in spite of water supply and sanitation being at a higher level compared to rest of the island. (Water supply 99.4%, sanitation 87.3% - DHS 2000 preliminary report.) Trends in hospitalization for selected diseases from 1970 to 2000 is shown in annexure I. It is likely that diarrhoeal diseases will remain as a public health problem in Sri Lanka, for the next few years. Annexure II shows morbidity and mortality pattern of diarrhoeal diseases and case fatality rate during 1985 to 1999.

## Targets and Indicators

### Health Development Targets

Indicator		Benchmark	Target for 2002
Crude birth rate (per 1000 pop)	17.3	1998	16.0
Eligible couples using FP method %	66.1	1993	72.0
IMR per 1000 live births	16.3	1997	15.0
Malnutrition under 5 yrs. of age %	23.8	1993	17.5
Deaths under 5 yrs of age due to diarrhoeal diseases %	2.0	1996	to reduce 1990 level by 25%
Deaths under 5 yrs of age due to acute respiratory infections %	5.6	1996	6.0
Iron deficiency anaemia among pregnant & lactating women %	39.0	1994	22.0
% of newborns with birth weight less than 2500 grams	16.4	1999	18.0
% of housing units with access to safe drinking water			100.0
% of housing units with latrines			100.0

Source: Annual Health bulletin 2000 – Ministry of Health

Data on morbidity and mortality is collected from hospitals by the medical statistics unit of the Ministry of Health by way of Indoor morbidity and mortality quarterly returns. Data on water supply and environmental health is collected and recorded in the sanitation registers maintained

by the public health inspectors and lack completeness. This environmental health information system has to be strengthened so that accurate and complete data would be available to develop and utilize the following indicators:

1. % expected number of water quality monitoring tests conducted.
2. % houses with sanitary latrines.
3. % food handling establishments registered.
4. % food handling establishments inspected and Food Handling trades – Inspection Forms (Form Health 800 Rev.) completed.
5. % factories inspected.
6. % of protected wells

## Challenges

The UN Protocol on water and health calls upon member countries to make provisions for:

- adequate supplies of wholesome drinking-water;
- adequate sanitation, protecting human health and the environment;
- effective protection of water resources;
- adequate protection from water-related diseases;
- effective monitoring systems and response capability

Taking into consideration, the norms set by the World Health Organization, Sri Lanka being a developing country has to recognize four major challenges:

- keeping pace with the population growth
- closing coverage and service gap with emphasis on sanitation, which lags behind water supply
- ensuring sustainability of existing and new services in terms of capacity building, operation and maintenance.
- improving the quality of services

The population of Sri Lanka for 2000 as estimated by the Registrar General is 19.4 million, while that of 1950 was 7.6 million. The average annual growth rate for 2000 was 1.7 per cent, which fluctuated in the range of (1.4 – 2.8) between 1946 to 1998. Being a middle income developing country, Sri Lanka is undergoing an epidemical and demographic transition. The rate of increase in the number of older people (aged 60 and above for Sri Lanka), from nearly ten per cent today, and to nearly 17 per cent in 2021, is higher when compared to advanced industrialized countries.

Urbanization leads to a shift from the use of latrines and septic tanks to sewage systems that can cause contamination of water systems. Although it could be argued that pollutants undergo dilution reducing the risk of health hazard but accumulation in the fauna and flora such as fish, shellfish could create health problems through human consumption. This will also pose problems in coastal areas where swimming and beach side resort activities are undertaken. In Sri Lanka where state health services are provided free of charge, loss of revenue by way of direct and indirect costs due to ill-health must be weighed against the investment to provide safe drinking water and also on purifying sewage polluted water.

Pollution from industrial waste poses a major health hazard in Sri Lanka. This has to be addressed through a national policy on cleaner production, which encourages stakeholder

participation, promotes community involvement and strengthens intersectoral linkages. The present policy on national solid waste management strategy and the environmental protection-licensing scheme needs to be strengthened in terms of implementation.

The health sector being an important stakeholder, could play a major role through its public health system, by way of creating public awareness of the risk to human health from pollutants by strengthening its intersectoral linkages, while addressing to the issue of health care waste generated through its system that has a major impact on health and environment. It could also establish an effective water quality monitoring mechanism utilizing the intersectoral linkages and help relevant sectors to protect ground water quality through a strengthened water policy. It can provide other sectors with reliable data on water-related diseases and effectiveness of interventions to facilitate decision-making on water projects.

Agricultural practices such as use of fertilizer and pesticides need to be addressed through environmentally friendly practices including integrated pest management strategy. Health impact assessment should be promoted as an integral part of all water development projects and agricultural schemes as these are associated with increase in diseases like malaria, Japanese Encephalitis by increasing the number of vector habitats, when improperly designed and managed.

Objective of environmental management for vector control includes reduction of the population density of the vector below disease transmission threshold level. For this, understanding of the vector ecology, population dynamics and disease epidemiology is necessary. Although there are entomologists in agricultural and health sectors hardly any collaboration between these two groups are available to address these issues on a common forum maximizing the use of the resource available.

Disaster preparedness must be an integral part of the planning process in programme development as the damage sustained from natural disasters such as floods by water supply, irrigation & other water infrastructure is a major source of set back to health.

Many water pollution problems are due to lack awareness of the causes of health problems among communities. The link between water, hygiene and illness is not strongly perceived since water is often considered as an essential commodity and a cleansing agent and not as a potential source of infection. The community can be motivated through creation of awareness, changes in attitudes and values, and could be encouraged to protect water sources and environmental conservation by allowing them to maintain and manage rural water supply systems.

With rapid advances in science and technology, in all developmental activities where there is lack of scientific evidence regarding potential health hazards, the "precautionary principle" should be applied so that uncertainty cannot pave way for potentially excessive or damaging actions. Strategies to protect the environment and conserve resources should be applied until the level of uncertainty of the environmental or social impact on health is reduced through experience and research based evidence.

There is also a need to develop mechanisms for regulation by way of legislation and its enforcement.

Finally, there must be a change in the political will and perception in order to accommodate the linkage between water, health and poverty within the favoured option of economic development for poverty alleviation.



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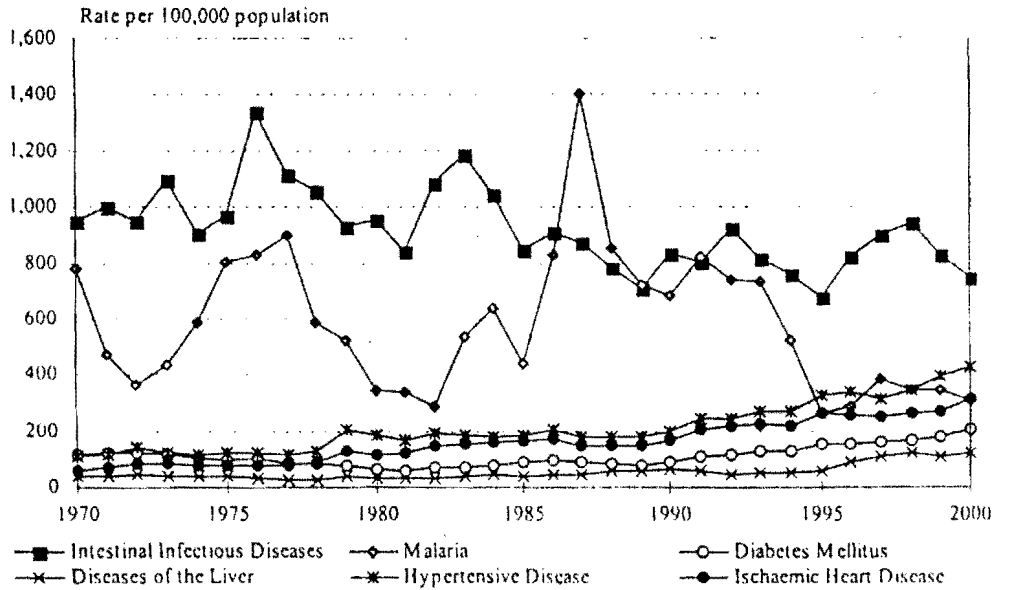
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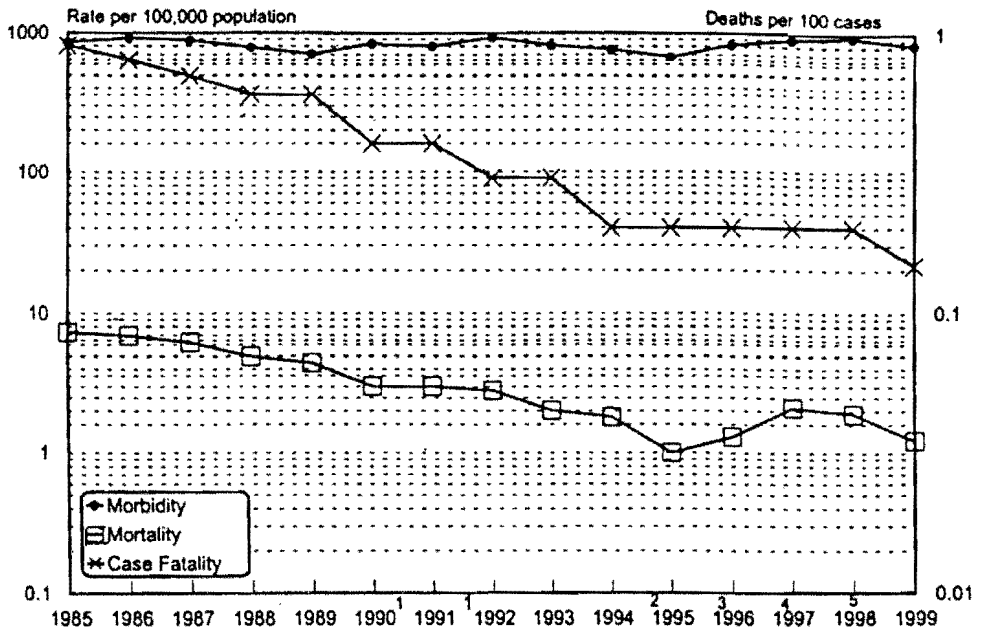
**Annexure I**

**Trends in Hospitalization for Selected Diseases, 1970-2000**



**Annexure II**

**Morbidity and Mortality of Diarrhoeal Diseases and Case Fatality Rate, 1985-1999**



Excludes 1 Northern and Eastern Provinces.  
 2 Polonnaruwa district.  
 3 Jaffna, Kilinochchi, Mullaitivu and Ampara districts  
 4 Kilinochchi and Mullaitivu districts  
 5 Ampara district

Source: Epidemiological Unit