JAFFNA HEALTHY CITY:
An Experience

Volume I

Published by

Coordination Committee of Jaffna Healthy City,

Department of Community and Family Medicine,

Faculty of Medicine, University of Jaffna

Sri Lanka

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Volume I

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Forward

Having worked with the World Health Organization and as a focal point of social determinants of health along with other entities, the author had the opportunity to realize the importance of the determinants of health.

A healthy city is a city where the determinants of health is adequately addressed and sustained across all sectors and layers. Double burden of communicable and non-communicable diseases and unplanned urbanization with life style modifications have given rise to the dire need of addressing the health city issue.

This book describes the realities and the aspirations of a healthy city project which is done with intersectoral collaboration, WHO support and the community participation.

The author, a well-known Academic and a Public Health Specialist, who is instrumental in this project and many other health related projects in this region has proven to be the most suitable candidate to author this book.

This book clearly describes the inception of the project, the planning process and the implementation exercises of the project.

The book also gives you an idea of the expected output, outcome and impact on the healthy living of the people living in the city and around it.

With the fulfillment of this project, a city with people enjoying high levels of physical, mental and spiritual health would no longer be a dream.

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Preface

There are many approaches suggested by WHO to address the inequalities in the community and the arising health issues. One of the measures involves the healthy settings approach which has been successfully implemented in many cities, especially in the European region. Settings can be used in many forms to promote health. Actions often involve some level of organizational development, including changes to the physical environment or to the organizational structure, administration and management. Settings by promoting health can also be used as a vehicle to reach individuals, to gain access to services, to bring people together and develop interactions throughout the wider community.

Among the different types of healthy settings approaches, the city-based approach became famous and Healthy Cities are the best-known example of a successful healthy settings approach. Urbanization is becoming a global trend and Jaffna is no exception.

The book describes the steps taken to implement the WHO healthy settings approach in Jaffna Municipality (JMC) area. The initial steps taken in the early part of the implementation is described in detail. It also explains the effect of COVID 19 pandemic on the implementation of the project. Two stages were successfully implemented with the support of stakeholders. Sharing the experiences faced during the implementation would be very useful for the people who want to embark on a similar endeavor.

Dr.R.Surenthirakumaran

December, 2020

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Acknowledgement

I would like to offer my thanks to Head, Department of Community and family Medicine, University of Jaffna and all Jaffna Healthy City coordination committee members. I also thank all the stakeholders who spent time with us and continue their involvement in the implementation of the project activities.

The support given by all the academic and non-academic staff of the Department of Community and family Medicine, University of Jaffna in the completion of this book should also be acknowledged here. Thank You.

Abbreviations

CBR	Crude Birth rate
CDR	Crude Death rate
COVID19	Corona Virus 2019
HIV/AIDS	Humman Immunodeficiency Virus/ Acquired Immuno Deficiency Syndrome
IMMR	Indoor Morbidity and Mortaliy Record
JMC	Jaffna Municipal Council
NCDs	Non Communicable Diseases
NGO	Non Government Organizations
PA	Physical Activity
UDA	Urban Development Authority
UN	United Nations
UOJ	University of Jaffna
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization

Chapter 01

World Health Organization Healthy City Concept - Setting Approach

Health is defined by the constitution of World Health Organization (WHO) as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. (1)

When we describe health, we need to consider individual health and population health. Both health aspects depend on many factors such as individual behavior, genetic makeup, exposure to environmental factors and social-economic conditions etc. The concept of health as the business of the health care provider is wrong. A holistic approach to health is accepting the influence of the social, economic, psychological and environmental well-being of the community on people's health. Unfortunately, all the people in the population do not get health at an equal level—many factors contribute to inequalities. The distribution of health is determined by many different kinds of individuals and the community.

1.1 Inequalities in the distribution of health

Many kinds of literature have documented inequalities in the distribution of health by social classes, gender, and ethnicity. Inequalities in health have been measured by using many different outcomes including life expectancy, morbidity, disability and mortality rates. Social and economic conditions and its influence on the lives of the people eventually determine their risk of poor health and being prone to illnesses or diseases. The poor in the community is the most vulnerable in terms of ill health which leads to many diseases. Environment and the circumstances in which people are born, how they grow up, live, work and their age is considered as the social determinants of health. These are further molded by the forces of economy, social policy and politics. (2).

The successful handling of inequalities heavily depends on the understanding of the root causes: the unequal distribution of power, income, goods and services in our society. WHO considered this a key priority and mobilized its resources to address the key issues.

WHO has laid down several approaches to handle the problems of inequality of health. Initially in 1977, the World Health Assembly decided to mobilize all the governments to formulate policies at national and global levels to ensure that people attained a level of health that would permit them to lead a socially and economically productive life. By the year 2000, this was popularly called; ‘Health for ALL’. That means all the people should be capable of working productively and participating actively in the social life of the community in which they live. (3)

The approach was more clearly structured in the 1986 Ottawa Charter for Health Promotion. These are critical essential steps that provided a platform to establish a holistic and multifaceted approach embodied by ‘Healthy Settings Programmes’ which further guided the integration of health promotion and sustainable development. (4)

1.2 Settings approach to health promotion

Currently various settings are defined and developed by WHO together with multiple countries to address the issues holistically. Healthy settings are defined by WHO as the place or social context in which people engage in daily activities where environmental, organizational and personal factors interact to affect health and well-being.(4) Settings are actively used by people to shape the environment in order to create or solve problems related to health. Settings are normally identified as having physical boundaries, range of people with defined roles and an organizational structure. Examples of settings include schools, worksite, hospitals, villages and cities.

Settings can be used in many forms to promote health. Actions often involve some level of organizational development, including changes to the physical environment or to the organizational structure, administration and management. Settings by promoting health can also be used as a vehicle to reach individuals, to gain access to services, to bring people together and develop interactions throughout the wider community.

After implementation of settings in many WHO based regions, the success of this approach has been validated through various internal and external evaluations and experiences. Healthy settings approach helped in the initiatives to carry out intersectoral coordination. This approach is now considered a potent tool to protect public health and is also believed to be a useful, dynamic method for integration of risk factors and disease prevention to ensure better quality life of the people.

Many WHO regions have been implementing a healthy settings approach as long term projects. The following figure shows the different activities in all six WHO regions. (Figure 1)

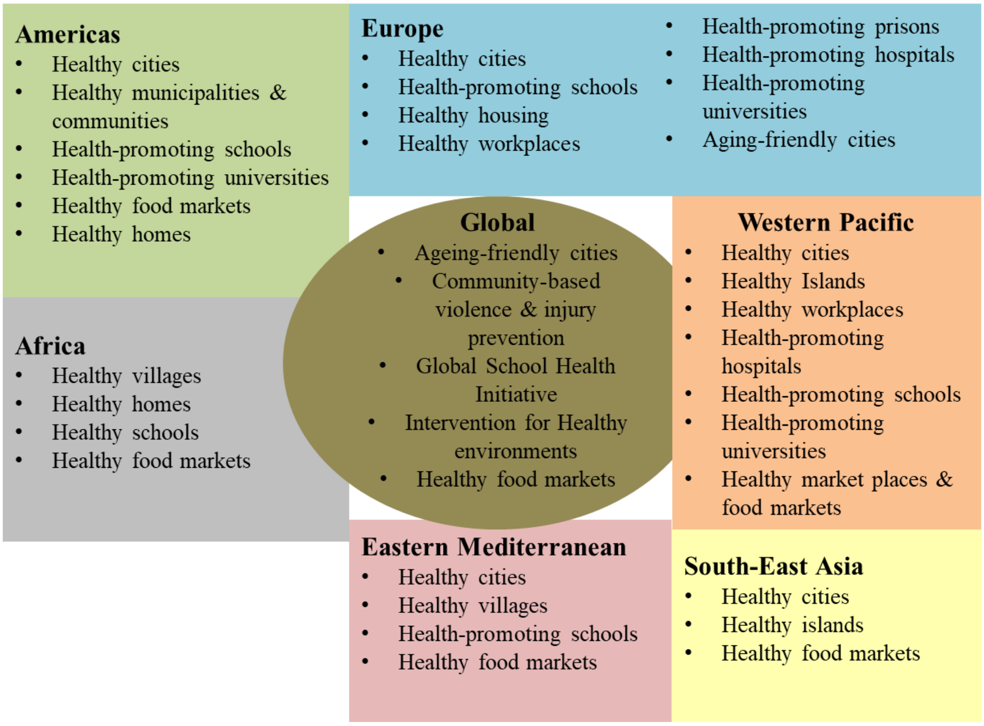


Figure 1.1: Ongoing activities in all six WHO regions
Source: WHO website: Healthy settings; Regional activities(5)

1.3 Healthy cities

Among the different types of healthy settings approaches, the city-based approach became famous and Healthy Cities are the best-known example of a successful healthy settings approach. WHO initiated this in 1985 and healthy cities have spread rapidly across Europe and other parts of the world. (6) Most of the regions were creating healthy cities and each region created it under different names.

Healthy cities are defined as one that is continually creating and improving those physical and social environments and expanding those community resources which enable people to mutually support each other in performing all the functions of life and developing to their maximum potential. (7)

Healthy cities are considered the largest among the settings approach; this is a programme with long term international development initiatives that aims to convince the decision-makers to keep health on top of their agendas. It also facilitates and promotes comprehensive local strategies for health protection and sustainable development.

Key features of healthy cities include;

1. Community participation and empowerment;
2. Intersectoral partnerships;
3. Participants equity;

According to the WHO guide, A Healthy City aims to:

1. Create a health-supportive environment;
2. Achieve good quality of life;
3. Provide basic sanitation & hygiene needs;
4. Supply access to health care;

Successful implementation of Healthy City depends not on the infrastructure of health or other resources; it is all about the commitment to improve the city environment and the willingness to create a strong link of political, economic and social arenas.

There is a need for innovative action addressing all aspects of health and living conditions and extensive networking between the organizations and the cities. This requires:

1. Explicit political commitment
2. Leadership

3. Institutional change
4. Intersectoral partnerships

Collaboration across public, private, voluntary and community sector organizations and encouragement of local people towards thinking and involvement in the decision making process will help to develop sustainable cities.

Figure 1.2: Healthy City Vision:6 Ps in WHO European region
Source: Healthy Cities Vision, WHO Regional Office for Europe(8)

WHO European region includes 6 Ps: people, participation, prosperity, planet, place, and peace in the vision of healthy cities which is highlighted in figures 1 and 2. (8)

1.4 Major health issues to be addressed prior to addressing urban health issues

Urbanization is becoming a global trend. About 55% of the world's population live in urban cities. The proportion is expected to increase to 68% by 2050 and the increase will be higher in the developing cities.(9) Health and wellbeing of the people in the urban areas are affected in many ways. Evidence shows that people living in urban areas face inadequate housing and transport, poor sanitation and waste management and poor air quality. In addition to these, there are other forms of pollution such as noise, water and soil contamination and urban heat islands and a shortage of space for walking, cycling and active lifestyles. A combination of these causes a triple health burden: infectious diseases like HIV/AIDS, tuberculosis, pneumonia, dengue, and diarrhea; non-communicable diseases like heart disease, stroke, asthma and other respiratory illnesses, cancer, diabetes and depression; and violence and injuries, including road traffic injuries.

People must be enabled to increase control over their health and its determinants (Ottawa Charter for Health Promotion, 1986). Health promotion efforts aim to promote equity in health as emphasized in WHO's "Health For All" principles. Hence, a healthy city approach is becoming highly important in addressing a large number of urban health problems and promoting healthy lifestyles in city dwellers.

Healthy city programme has been considered an effective tool for improving the equity of the people living in the deprived urban areas. This will help the formation of political, professional and technical alliance to achieve the health improvement goals. This approach will help to develop systematic efforts to address health inequalities and environmental root causes of ill health. (10)

It is important to develop the healthy city programme to meet the local needs. So, establishing a locally tailormade programme is the key for the successful implementation of the healthy city programme. There is no standard guide to developing a healthy city programme. It is essential to follow a methodological approach of implementation. According to WHO, the framework for implementation consists of three stages:

1. Getting started
2. Getting organized
3. Taking action

The following table describes the activities to be implemented in each stage;

Table 1.1 : Stages of the project for implementing healthy city programme

Stages	Activities
Getting started	Build a core support group, location of the model area, develop plan for a quick needs assessment, analysis of data collected, Prepare project proposal, obtain approval from the city council, mobilize funds for programme implementation
Getting organized	Organize committees, set up a programme office, capacity building, organize and mobilize community, define work priorities, plan long-term strategies, establish accountability mechanisms
Taking action	Increase health awareness, advocate strategic planning, mobilize partnerships and intersectoral action, encourage community participation, promote change and innovation, ensure healthy public policy

Source: A short guide to implementing the healthy city programme,WHO (10)

The successful implementation of the programme depends significantly on its organizational structure, capabilities and dedication.

Following structure is suggested by WHO for the implementation of the healthy city;

At National Level **:** Core support group, national focal point

At City Level **:** Healthy city coordinator, healthy city coordinating committee, subcommittees/task forces/working groups, community development committee

Chapter 02

Health issues in Sri Lankan cities

2.1 Major health issues in Sri Lanka

The Sri Lankan population is expected to reach 21.41 million at the end of 2020 and current projections show that the population will peak around 2037 at 22.19 million.

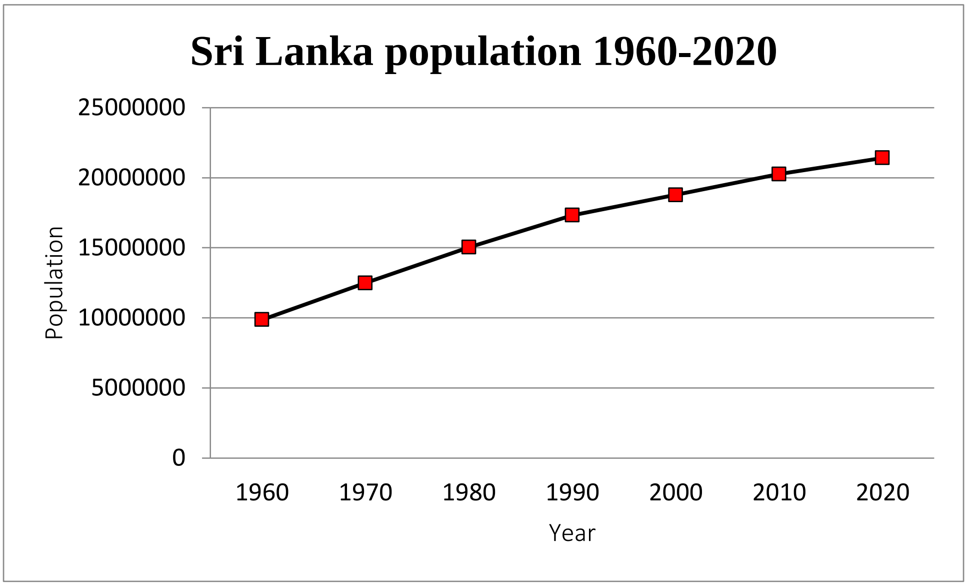
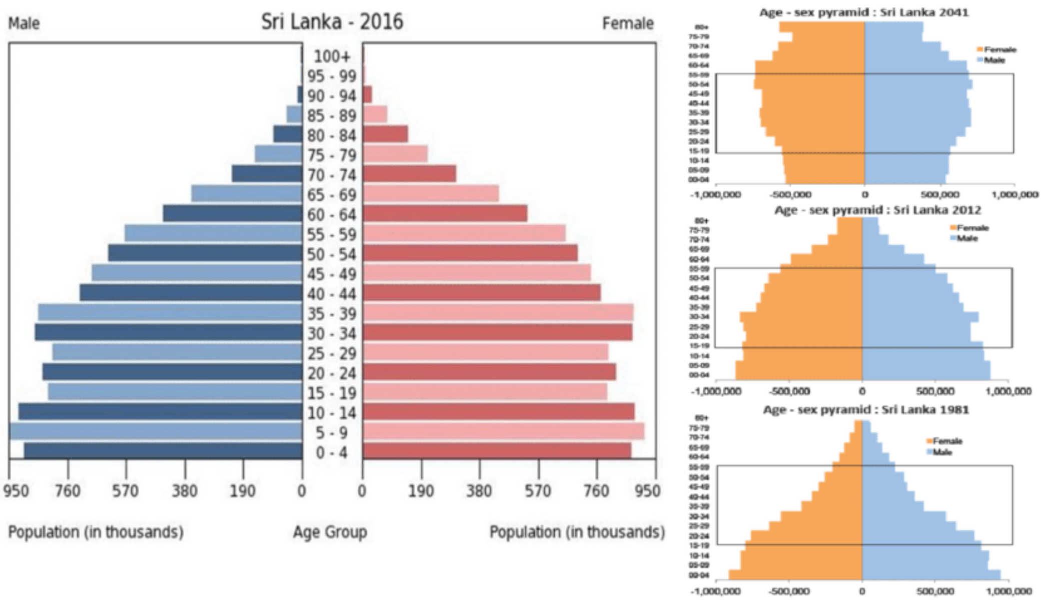


Figure 2.1: Population trend in Sri Lanka
Source: Worldometer (www.Worldometers.info)

Urban areas have 18.4 % of the population. Population growth in Sri Lanka has been below 1% since 2000; however, between 2019 and 2020, the population grew by 0.42% thus adding about 89,000 people to the population. (11)



Source: Left: UN Population Division 2017 (UN 2017); Right: Annual Health Bulletin 2016 (MoH 2018a).

Figure 2.2: Population pyramid of Sri Lanka

Population pyramid of Sri Lanka clearly shows that the population is ageing steadily and will reach its peak in 2041.(12) The transition will lead to an increase in the dependent population, with high comorbidity. The environment they live in, should be able to provide the required facilities to cater to the need. It will also create many socioeconomic issues, which will increase the existing disparities within the community.

2.2 Health issues in Sri Lankan urban settings

As discussed earlier, a larger proportion of the world population live in urban cities and this appears to be an increasing trend. Although 18.5% of the Sri Lankan population live in urban cities, this is no hindrance to the growing trend of movement to urban areas.(13) In the region of South-East Asia, Sri Lanka is the country with the fastest expansion of the urban area. This expansion was measured using nighttime lights data and the finding indicates that it is relative to the urban population, with a ratio of more than seven. The growth rate of the urban area in Sri Lanka is the same as the rate of the region. As a result of the sprawl and ribbon type of urban development, urban population is not growing. (14)

In Sri Lanka, urban status is defined as an area governed by a Municipal Council or an Urban Council. However, Urban Development Authority (UDA) of Sri Lanka, based on the definition of “Urbanization”, considers areas beyond the Municipality and Urban Council areas as Urban Development area. The definition of urban development areas, assume the features of urban location and services. Urban living creates a complete lifestyle change which leads to many complex issues, as observed in many

Figure 2.3 : Waste Management practices in Sri Lanka

other countries. Much of the urban development depends on better planning and efficient utilization of resources. Movement of people from rural areas to a metropolitan area is usually motivated by job opportunities and infrastructure facilities. The high levels of movement and settlements have caused unplanned urban development resulting in many issues such as poor housing, sanitation problems, poor waste management, and environmental pollution and degraded ecological quality, poor management of infrastructure, flooding, urban crime, etc.

The rapid growth in population leads to huge waste generation in urban areas. Unscientific waste handling causes health hazards and degradation in urban environment.

These are the main reasons for poor waste management in urban areas;

- Lack of proper waste management plan by the designated organizations, such as municipal council, urban council and pradheshya saba;
- Lack of available and suitable land for waste disposal;
- Inefficient collection system;
- Major lack of public awareness on waste management

Because of poor waste management practices, most of the selected dumping places are near wetlands and flood retention areas which lead to health issues, water pollution, loss of aesthetic values and marring scenic beauty of the place.

Food and physical activities

Urban livelihood has caused changes in food preferences and engagement in activities. As of 2020, half the world populations live in urban areas. The urbanites should think of how their city should effectively deal with health in terms of provision of required services and facilities for healthy life styles. Physical and built environments are the factors which are influencing people's food consumption behavior patterns and engagement in physical activities.

For example, growth of population is replacing manual and physical labor with sedentary office work. In addition, infrastructure development and technological innovations allow individuals to use different and flexible sources of transport rather than walking, thus extending sedentary behavior throughout their daily lives. Decreased physical activity, increased access to food in general and fatty food in particular, has led to risk of obesity among the urban people. When people move from rural to urban areas, the availability of space for exercise and outdoor recreation activities have decreased, this discourages physical activity. Most individuals living in urban areas always rely on grocery stores. However, these options mostly offer junk food and don't have the capacity to deliver diverse and nutritious food choices.

National policies are very important in terms of product formulation, labeling, advertising and promotion in the urban areas. This is required especially around the schools, to minimize marketing of poor-quality diet and to educate consumers about healthier food choices to promote healthy food behavior among urban people.

Air pollution

Air pollution is a major environmental health risk. By reducing air pollution levels, countries can reduce the burden of diseases such as; stroke, heart disease, lung cancer, and chronic and acute respiratory illnesses, including asthma. Air pollution is a main threat in urban areas as it impacts health of urban dwellers significantly. Industries, waste generation and transportation are the main causes for air pollution in urban areas.

Air pollution in Sri Lankan cities is a growing issue. Air quality in Kandy is worse than that of Colombo due to the geographical location, increased vehicle usage and traffic congestion. A computer model used to determine sulphur depositions in several cities including Jaffna, found that the acidic depositions both as sulphate in acid rain and gaseous SO2 are increasing.(15)

2.3 Non-Communicable Diseases (NCDs) and Healthy Cities

The global burden study shows that the main contributors were NCDs.

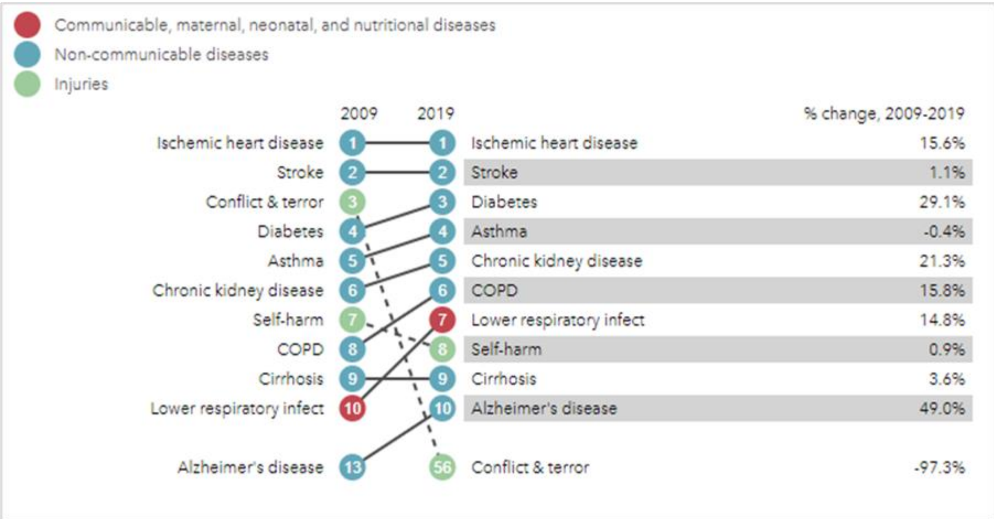


Figure 2.4: Global top ten causes for the most deaths in 2009 and 2019: a systematic analysis for the Global Burden of Disease Study 2019

Sources: Lancet: Global burden of 369 diseases and injuries in 204 countries and territories(16)

Non-Communicable Diseases (NCDs) are estimated to account for 75% of total deaths in Sri Lanka”. In Sri Lanka, NCDs cause more than three-quarters of all deaths and nearly 1 in 5 people die prematurely from NCDs. In October 2015, the United Nations Interagency Taskforce on NCDs conducted a mission to Sri Lanka. It concluded that the epidemic of NCDs has now become a serious economic as well as public health issue in Sri Lanka and is fueled by tobacco use, unhealthy diet, alcoholism and physical inactivity. (17)

More than one third of adult males in the country are tobacco users. One out of three people have high blood pressure and a third of women are overweight. Consumption of salt is two to three times higher than recommended. (18) The following chart shows the top ten causes for the most deaths in 2009 and 2019, through this, we can understand how non-communicable diseases hugely affect death rate in Sri Lanka.

Sri Lanka has set up an operational NCD mechanism within the Ministry of Health to tackle the burden indicated in these statistics. It also has an operational action plan to reduce tobacco use, unhealthy diet, alcoholism and physical inactivity.(19)

In the recent past, many attempts have been made to implement community development programmes. Few programmes are in implementation phase and few other development programmes are in the pipeline. In this backdrop of infrastructure development, it was opportune to embrace the WHO concept of Healthy City in Jaffna to promote the wellbeing of the citizens in a sustainable manner.

The trend of rapid urban growth in developing nations such as Sri Lanka, raises concerns regarding its impact on the community and its residents. While it is regarded as advancement from less developed conditions, urbanization creates new demands for public services and the impetus for modernization, implies greater stress on our ecosystems. More specifically, urbanization and the accompanying population growth generate the need for comprehensive and accessible health services, as well as infrastructure, like adequate water and sewage systems. Being a Healthy City depends not on current health infrastructure, but rather upon, a commitment to improving a city's environs and a willingness to forge the necessary connections in political, economic, and social areas.

Chapter 03

Adopting a healthy city approach to the city of Jaffna

Jaffna is at the northern end of the Northern Province of Sri Lanka. It consists of the peninsula and seven inhabited Islands. The district is divided into four subdivisions such as islands, Valikamam, Thenmaradchi and Vadamaradchi. It has 15 Divisional Secretariat divisions. Jaffna has a population of 624,179 according to the annual performance report of Jaffna District, 2017.(20)

Jaffna was known as a distinct cultural center of the Northern part of Sri Lanka. It is situated about 189 miles (or 305 km) north of Colombo, the country's capital city. Jaffna town is a Metro Urban Centre as per urban hierarchy in the Northern Region. According to the National Planning Policy of the Department of National Physical Planning, the town is categorized as a main Administrative Centre in the Northern Province. Also the National Physical Planning Department identified Jaffna as a Mega City in the National Plan for 2030.(21)

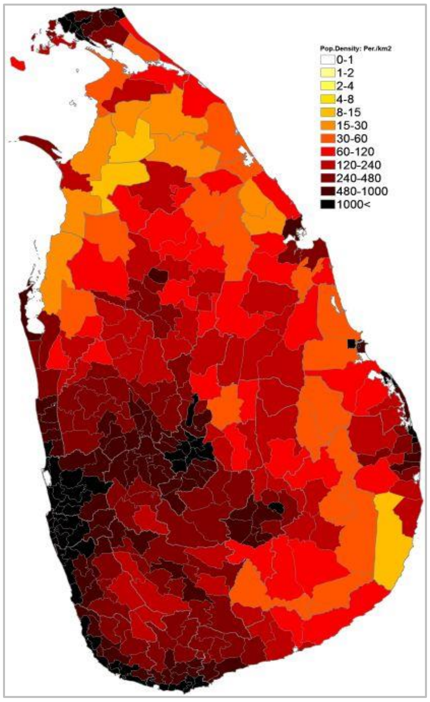


Figure 3. 1: Population Density map of Sri Lanka
Source: Census of Population and Housing of Sri Lanka, 2012

Figure 5 shows the population density in Sri Lanka. Jaffna district is the most densely populated area in Northern

Province.

The population distribution is described according to different age categories. The population pyramid is used to represent the age- sex composition. This will help us make a decision based on the economic status of Jaffna District. According to the source: Census of Population and Housing of Sri Lanka, 2012,

- Age range of majority population is between 15 and 19.
- Dependency range amidst the population is very low, the active population is high between the ages of 15 to 64, and therefore it will increase the labor force participation.
- All age groups comprise almost an equal level of male and female population. A higher proportion of the population are amongst the younger age group, therefore educational facilities should be high.
- Due to educational improvements and family planning measures, the population under the age of 1 is very low.

Jaffna, during and after the war

Figure 3. 2: Jaffna Railway station
Source: www.tripadvisor.com

3.1 Health issues in Jaffna

- According to Census of Population and Housing of Sri Lanka, 2012, those between the ages of 40-44 are fewer in the population; hence there are fewer people in the economically active group, whereas those above the 65 plus age group comprise 53,458 people.

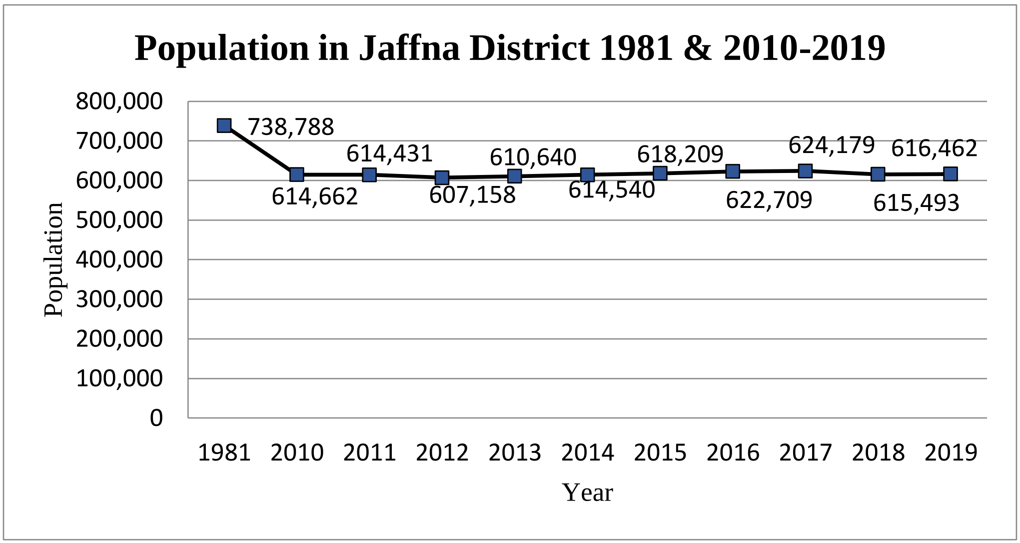


Figure 3. 3: Population in Jaffna District 1981 & 2010-2019

Source: District Secretariat, Jaffna

According to the 1981 census, the total population of the Jaffna district was 738,788. Due to the civil war, the net out-migration led to the decline of the population. Jaffna district was not included in the 2011 census due to the conflict situation. District population was 614,662 in the 2011 census.

According to the data of the district secretariat the rate of population growth is almost zero. The tables below comprise two vital statistics of Jaffna, Crude Birth Rate (CBR) and Crude Death Rate (CDR). This shows the important reason affecting the population growth rate of Jaffna.

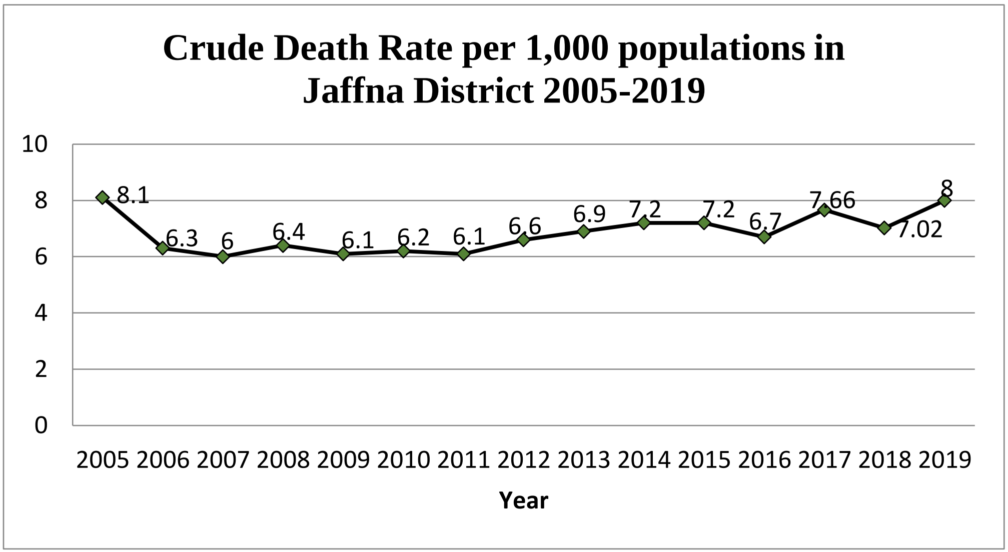


Figure 3. 4: Crude Death Rate per 1,000 populations in Jaffna District 2005-2019

Source IMMR 2019, Statistical Hand Book 2019, RDHS Office, Jaffna

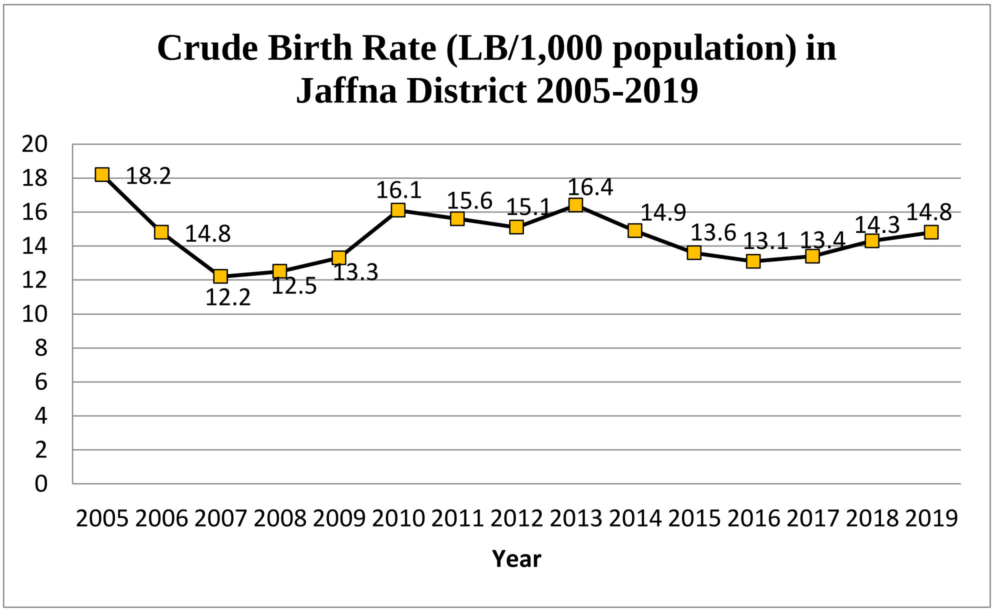


Figure 3. 5: Crude Birth Rate (Live Births/1,000 population) in Jaffna District 2005-2019

Source IMMR 2019, Statistical Hand Book 2019, RDHS Office, Jaffna

According to the Annual Health Bulletin 2018, the crude birth rate of Sri Lanka was 15.1 per 1000 population, and the crude birth rate of Jaffna was 14.8 per 1000 people. So, the crude birth rate of Jaffna was always below the national level. Crude Death Rate of Sri Lanka was 6.4 per 100 populations and the crude death rate of Jaffna was 7.02 and it was 8 per 1000 people in 2019. Jaffna always had a higher Crude Death Rate than the national rate. Many factors would have led to this situation. One important reason would be that the Jaffna population consists of a higher proportion of the elderly population. The table below shows the percentage of the aged population in the district.(22)

Ageing population of Sri Lanka increased from 7.3% to 10.8% between 2009 and 2019.

Table 2. 1: Distribution of elders nationwide and across Northern Provincial districts

District	Total Population	Total aging population	Percentage of elderly %
Jaffna	616,004	84434	13.7
Kilinochchi	145,213	9969	6.9
Mullaitivu	137,622	7860	5.7
Vavuniya	187,571	14985	8.0
Mannar	163,330	8252	5.1
Sri Lanka	21,413,249	2,312,630	10.8

Source: Respective District Secretariats, Northern Province and Sri Lanka Population and Housing Census of 2012.

Based on Sri Lanka Population and Housing Census of 2012 (SLPHC), there are 2,524,570 people, (12.4%) living above the age of 60 years. In 1981, it was 6.6%, however, between 1981 and 2012 it has accelerated faster than other Asian countries. Jaffna district's share is 3.3 % of total ageing population.

Table 2.2: Health issues in Jaffna; Demographic & Health Indicators (2012-2019)

Details	2012	2013	2014	2015	2016	2017	2018	2019
Actual population	607,158	610,640	614,540	618,209	622,709	624,179	615,493	616,462
Population Density	617.2	620.8	624.7	628.5	615.3	616.8	608.2	607.3
Crude Birth Rate (LB/1,000 population)	15.1	16.4	14.9	13.6	13.1	13.4	14.3	14.8
Crude Death Rate (/1,000 population)	6.6	6.9	7.2	7.2	6.7	7.66	7.02	8.0
Infant Mortality rate (per 1,000 Live Births)	14.1	12.6	13.3	12.6	11	10.3	12.7	11.5
Maternal Mortality Rate (per 100,000 Live Births)	129.7	30.2	68.1	37	38	85.9	34.1	43.8

Source: Statistics Unit, RDHS office, Jaffna

Table 2.3: Indoor Morbidity and Mortality statistics, 2019 in Jaffna district

No	Causes of Hospitalization	No of cases	No of death
1	Traumatic injuries (S00-T19, W54)	34937	118
2	Diabetes mellitus (E10-E14)	20559	20
3	Disease of the respiratory system (J20-J22, J40-J98)	19718	341
4	Toxic effects of other pesticides (T60.0, T60.1-T60.9)	17763	4
7	Acute rheumatic fever and rheumatic heart disease (I00-I02, I05-I09)	15249	3
8	Disease of the urinary system (N00-N39)	11379	105
9	Viral diseases (A80-B34)	8735	4
10	Other bacterial diseases (A20-A49)	628	323
11	Ischaemic heart diseases (I20-I25)	3117	227
12	Neopalsms (C00-D48)	5652	171
13	Other heart diseases (I26-I51)	882	133
15	diseases of the gastrointestional tract (K20-K92)	8200	108
17	Pneumonia (J12-J18)	1382	103
18	Cerebroavascular diseases (I60-I69)	1787	102

Source: IMMR, Statistical Handbook 2019, RDHS Office, Jaffna

All of the food industries in Jaffna district undergo food handling inspection, the industries comprise food factories, bakeries, hotels & restaurants, tea & coffee boutiques, super markets etc. Food poisoning diseases are identified below as per IMMR, 2019. In the last four years there was only one death. In 2012, 4,003 people reported for clinically confirmed foodborne illnesses and a majority of them were children below the age of 9. According to 2014 annual health bulletin of Sri Lanka, 1,072 cases of typhoid fever were reported and 27.6 % of the cases reported were between the ages of 5-14 years.

Table 2. 4: Reported Communicable diseases in Jaffna district and Sri Lanka in 2019

	Jaffna/2019	**Sri Lanka/2019**
Dengue fever	7901	101387
Dysentery	408	3206
Encephalitis	17	240
Enteric Fever	42	266
Leptospirosis	44	5619
Typhus Fever	566	1551
Chickenpox	279	8058

Source: Weekly Epidemiology Report (WER)Epidemiology Unit, Ministry of Health, Sri Lanka

3.2 Jaffna livelihood

Figure 3. 6: Livelihoods of Jaffna

Source: Northern Livelihood Development Project

The Jaffna district livelihoods depend mainly on agriculture, animal husbandry and fishing. Some are engaged in self-employment and cottage industries. There has been an increasing trend of non-communicable diseases (NCDs) in the recent past due to urbanization, acute lifestyle transformation, cultural changes and other factors. Changes in the lifestyle of Jaffna has led to increased alcoholism, smoking, drug abuse, high caloric and low fiber enriched food intake and fast food consumption etc.

There has been rapid urbanization in the past decade which is expected to continue in the coming years. This trend will provide more opportunities for employment, education and socio-economic development. Rapid urbanization has also brought about a number of adverse health problems arising from the effects of health determinants, which are mostly related to physical, social and economic environments of urban areas, as well as people's lifestyles and behavior.

Jaffna, the main city in Northern Province, is developing rapidly after the end of the protracted civil conflict. It was not possible to carry out most of the national studies or surveys during the war. Recent small scale unpublished surveys that were carried out at district level, showed the epidemic nature of the NCDs. In the recent past, many attempts have been made to implement community development programmes. Few programmes are in implementation phase and few other development programmes are in the pipeline. In this backdrop of infrastructure development, it was opportune to embrace the WHO concept of Healthy City in Jaffna to promote the wellbeing of the citizens in a sustainable manner.

Thus, as a setting approach, movement of Jaffna healthy city was initiated in December 2019, by Jaffna municipal council in collaboration with the Provincial Department of Health services, Northern province and Faculty of Medicine, University of Jaffna, with the guidance of WHO.

3.3 Jaffna Municipal Council

Jaffna is the provincial capital city of Northern Province. It is a historical port city that was established during the colonial era. Jaffna municipal council area measures 1,910 hectares and has a population of 94,000 as of 2020. (23)

People who live in the city are the main driving force that defines the city's dynamism, which are based on their behavior patterns. People keep moving to the city from rural areas, for instance, according to 2012 Census and Statistics Report, 20,582 people migrated to the city. The driving factors behind migration include marriage and employment. Municipal services are one of the key tasks an urban centre carries out to sustain living conditions and functions for its citizens. Urban development and the performance of the city depend on the provision of good quality services from municipal council. (23)

Good practices available in Jaffna Municipal Council (JMC)

When compared with Colombo, Jaffna has lesser traffic and pollution because of the different modes of transport. For instance, Jaffna city has a good road network for cycling thus ensuring less traffic. Also the absence of pollutant industries and dispersion of buildings leads to higher air quality in Jaffna. Green environment around the city encourages people to hang out and spend quality time. All the facilities such as banks, markets, retail industries, businesses etc., are concentrated in the city and hence, are easily accessible to the public through public transport. There are number of actions that are carried out to mitigate disaster in Jaffna municipal council areas. For instance, reconstruction of drain cover slab, improvement of critical infrastructure facilities, road renovation, reconstruction of retaining walls etc. Improvement to infrastructure, including hotels, destination developments, road developments etc., helps attract more people and encourages tourism in Jaffna. Colorful, ancient temples and historical places located around Jaffna also plays a key role in the tourism industry.

Key problems of the Jaffna Municipal Council

Waste Management: It is a major issue in JMC areas which directly influences the urban quality and health of people. Poor waste collection and poor methods are the main reasons for that. There was a well-designed and well maintained storm water drainage system. This however, has issues since the disposal of waste water into the storm water drainage system. The disposed water running into the pond has led to water pollution. Unstructured drainage system leads to flooding in the city. The core area of the city got affected by the recent floods than the other surrounding areas.

Traffic and accidents: Jaffna Municipal Council area is well-structured with road networks which connect all parts of the country. However, poor design in terms of lane capacity and street design, has led to traffic congestion, accidents and lack of workout activities on the streets such as cycling and walking.

Figure 3. 7: Waste collection at Jaffna MC

Lack of physical activity among people: According to the unpublished study done among Jaffna University students, fatigue, lack of free time, reluctance to exercise in public, lack of peer group, and lack of exercise facilities were barriers to physical activity in Jaffna. In addition, the increasing fast-food outlets in Jaffna town area has led to poor healthy diet patterns among people. Therefore, lack of physical activity and unhealthy food intake has led to health problems among people such as obesity, diabetes etc.

CHAPTER 04

Creating Jaffna as a Healthy City

Jaffna is the most urbanized city in Northern Province and is an attraction for tourists from a historical perspective. However, unplanned structures and actions carried out by people leads to major issues such as flooding, pollution, saltwater intrusion etc. There are a number of potential areas to develop as tourism attraction sites in Jaffna. Therefore, healthy city concept will help to improve the potential and attract investors to the north. This in turn should help deliver effective environmental and health services to the people. For healthy city to be made possible, physical environment, social environment and economic environment of the city should be considered. The healthy city concept should be applied with a comprehensive health development approach. Through the different approaches, the gap in the management related to healthy city can be identified, for instance, the selection of settings approach to implement this concept.

On the request of the city mayor, the WHO country representative of Sri Lanka visited Jaffna. During this visit, a stakeholders meeting was organized at the Department of Provincial Health, Northern Province, to discuss the formation of Jaffna as a healthy city. All the participants were very keen to support the proposal. Based on the decision, WHO country office requested the officials to submit a proposal to develop a major public consensus on the development of Jaffna healthy city programme. A proposal was submitted by the Department of Community and Family Medicine, Faculty of Medicine, University of Jaffna, with the support of provincial health authorities, district secretariat and Jaffna municipal council. To sensitize the concept, a series of symposia and discussions were conducted with the relevant stakeholders.

4.1 Symposium in sensitization of key stakeholders

A symposium was conducted on non-communicable diseases, to solicit support of the non-health sectors for the Jaffna healthy city programme. The specific objective of this symposium was to design and conduct a NCD symposium to raise awareness of NCDs among citizen groups and non-health stakeholders and to solicit their contribution towards the programme. Output was enhanced awareness on NCDs, NCD risk factors and its prevention among multiple stakeholder groups and their commitment to contribute to the programme to overcome the NCD burden and establishment of a multisectoral committee to design the healthy city project.

Several school awareness programs were conducted. As part of the activities, school level competitions were conducted among ten schools on non-communicable diseases, to solicit their support of the healthy city programme.

During the period of 10th November 2019 and 31st December 2019, workshops were held. A workshop was held for media personnel. Another workshop was held for food industries at the Valampuri Hotel in Jaffna.

Awareness programs were held among 3000 students in the form of dramas in ten leading schools of Jaffna municipal area. Moreover, a media campaign was arranged to create awareness among media personnel to formulate their publications towards healthy city movement. In addition, skills and knowledge update workshops were conducted for the owners and managers of the food industries, to ensure the production of hygienic food.

4.2 Organizing programme launch

After successful sensitization programmes, a meeting was held in aid of the launch, with the support of District Secretariat, Jaffna, Regional Director of Health services, Jaffna Municipality and WHO country office, Sri Lanka.

The meeting provided the opportunity for a fruitful discussion with major stakeholders such as the Department of Education, Department of Agriculture, Department of Engineering and City Development and Environmental Authority. An action plan was formulated to sustain the Jaffna healthy city movement. Five action areas were identified comprising, refuse disposal, hygienic food availability, accident prevention, physical activity with cycling and exercise, and non-communicable disease prevention.

At the end of the discussion stakeholders who wished to join the initiative were invited. The launching ceremony created an opportunity to connect the multiple stakeholders in working together as a healthy city team.

After the launch, the first consultative meeting was organized with the healthy city team members for the second week of January. The participants wanted to initially work on the three most essential issues which could show impact. It was decided to select three activities from the five key activities specified in the launching workshop. It was decided to identify the feasible work settings for the implementation. Following points were shared in the meeting;

1. Promoting school health via hygiene improvements to canteen activities, sanitation coverage, maintenance of the Body mass index (BMI) and School Medical Inspections (SMI), garbage segregation, development of a social media platform, banning of plastic and

updating the health data into Ministry of Education Northern Province data base.

2. Promoting the health of staff at work places via provision of opportunities for physical activities, BMI and waist circumference control, office based gardening and internal mobilization of staff;
3. Promoting healthy waste management activities via improved environmental safety, compost making for use as fertilizer, sanitized washrooms at work and public places, plastic banning policy and designating specific days for waste collection by municipal council vehicles.

Finally, it was decided to analyse the information collected by the various institutions and discuss with the relevant stakeholders regarding finalization of the settings and key activities. Second meeting was organized after two weeks to analyze the information from reports and data published by various government departments, UN agencies and community and non-governmental organizations. Team members also presented the information they collected from multiple actors working with the issues identified. Following discussion points were put forward;

1. Awareness and skills development amongst students is key for schools to achieve social mobilization In addition to this, it is important that students undergo attitude and behavioral change. The key action for this under school settings comprises;

    - Education regarding healthy environment based on grades;
    - Mobilize student attitudes and behavior towards healthy environment;
    - Ensure health facilities in schools;

- Ensure students' health status maintenance with school medical officer

2. Workplace is the other setting determined for health. The environment and condition of the work place defines the physical, mental, economic and social well-being of workers. Through mobilization of staff in terms of physical activity, waste management etc., we can promote healthy city to the next level and create supportive environment for healthy activities. Non-work-related conditions also influence the health of employees. Work place setting participation can address;
    - Knowledge and education of the workers, for instance, risk assessment, safety procedures etc.
    - Get support and training of NGOs, to undertake and improve staff knowledge
3. Public places and communities - public places are where people spend their leisure time. We can reach different types of people in public places. This is the best setting to reach the public. We selected communities around the city to understand their waste management practices.

The following settings were identified, based on the analysis of the available information and rounds of discussions with team members and staff of WHO country office.

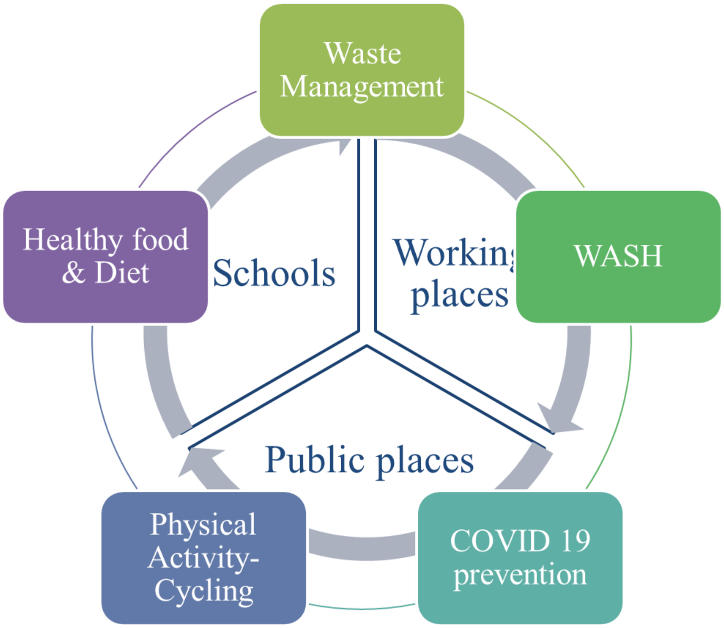


Figure 4. 1: Setting and themes of Jaffna Healthy city Project

The Committee decided on the three settings of schools, offices and public places to improve the health status of the people and the city. The committee also decided on three action areas to develop Jaffna city as a healthy city;

- Promoting healthy diets through the settings of schools and offices;
- Promoting physical activity through school, office and public settings;
- Creating a sustainable environment through healthy waste management practices at schools, offices and public areas.

After the successful selection of the settings and themes, it was decided to form a technical working group.

4.3 Formation of the technical working group: Jaffna Healthy City concept and implementation plan

Both, the WHO guide to implement the healthy city programme / WHO regional office for Eastern Mediterranean, clearly recommends the need to form a coordination committee in the facilitation of;

- Designing the action plans/ results framework on selected areas of improvement;
- Implementing the programme in accordance with regional and national approaches and strategies;
- Providing leadership to the healthy city team and workers and supervising day-to day operations;
- Building capacity of the stakeholders in the subject areas related to selected themes of the healthy city project;
- Liaising with the national focal point and healthy city coordinating committee;
- Providing support to the subcommittees, community and other working groups;
- Coordinating multi sectorial activities and development projects;
- Mediating, facilitating and enabling local partnerships;
- Generating support and financial resources;
- Identifying, designing and implementing innovative solutions to underlying problems;
- Developing the tools and conducting the baseline survey; documenting, recording and reporting all information related to the programme;
- Monitoring the implementation of strategies and plans.

Table 4.1: Objectives of the project

Designing	Designing the action plan framework on selected areas to be improved, Implementing the programme in accordance with regional and national approaches and strategies.
Building	Building the capacity of the stakeholders
Identifying, designing and implementing	Identifying, designing and implementing Innovative solution to underlying problems
Developing	Developing the tools and conducting the baseline survey
Monitoring	Monitoring and implementation of strategies and plans

4.4 Methodology

Establishment of the Jaffna Healthy City Coordination Committee was the initial step. A working group was formed for centralized functions, for each of the themes and to conduct the monitoring and evaluation activities and focal points were identified to coordinate the activities.

Regular meetings are conducted according to the schedules of the relevant working groups and a mechanism is in place for keeping of meeting minutes. Dissemination of the decisions and action points were established. Baseline and periodic surveys were planned to be conducted, results will be disseminated and corrective actions will be coordinated by the Jaffna Healthy City Coordination Committee.

Capacity of the stakeholders in the subject areas of selected themes under healthy city project will be improved through training sessions, organized with relevant experts as resource persons.

The action plans under each setting are listed below;

School settings - activities identified by the school team;

School Diet theme;

1. Develop videos on healthy eating
2. Distribute the videos to the school children
3. Improve knowledge on healthy food
4. Improved dietary pattern

School Waste Management Theme;

1. Establishing school gardens
2. Awareness programmes for school students on 4 R (reducing, reusing, recycling and recovering)

- Awareness through poster and essay competitions
- Awareness through celebration of environmental day

3. Improved knowledge on 4R
4. Create waste segregation methods
5. Reduce plastic usage

School Coordination;

1. Establishment of school committee
2. Establishment of school clubs / environment clubs
3. Create a communicating platform for dissemination of information and to obtain support

Workplace activities - identified by the work setting team;

Workplace Diet Theme;

1. Develop videos on healthy eating
2. Advocacy and training programmes for the management and employees

3. Improve the dietary pattern of staff

Workplace waste management theme;

1. Assess the practices related to waste management in different work settings
2. Create awareness in selected work settings on 4R
3. Liaise with other organizations to provide plastic free options
4. Improved knowledge on 4R
5. Create waste segregation methods in work places
6. Reduce plastic usage in workplaces

Workplace physical activity theme;

1. Create awareness on benefits and recommendations for physical activity in selected work settings
2. Develop educational videos on a physical activity that can be carried out at work stations
3. Create walking groups in selected work settings
4. Advocate for convenient gym membership

Workplace coordination activities

1. Establishing links with other organizations (private, police, etc.)

Public place or community setting activities identified by team;

Public place diet theme;

1. Develop videos on healthy eating and distribute through social media
2. Promote healthy eating options in public places
3. Arrange food festivals

Public place waste management theme;

1. Assess the knowledge and practices related to waste management
2. Create awareness on waste management in selected community
3. Liaise with other organizations to provide plastic free options
4. Improve waste management systems (composting/ segregation etc.)

Public place physical activity theme;

1. Increase awareness on the benefits of physical activity
2. Advocacy programmes with city planners on creating an environment for physical activities
3. Develop a video/ exercise programme to create awareness
4. Distribution of the videos through social media
5. Create physical activity places (parks/ streetscapes)
6. Assess the level of participation in public activities

Public place coordination;

1. Establish links with other organizations (private, police, etc.)
2. Create social media platforms to connect the community

Based on the suggested activities, initial action plans were developed by the three teams with indicators

4.5 Advocacy with the relevant stakeholders

After formalization by the coordination office with action committee and action plans, committee started advocacy with the relevant stakeholders for implementation. Several small scale discussions and communications were created through social media.

Details of the stakeholders who joined us after the advocacy are listed in the annexure.

The advocacy programme led to the decision to form a steering committee.

Committees for steering, management and implementation

After finalizing the settings, themes and key indicators, the team felt the need for a robust coordination mechanism to provide strong leadership for implementation and sustainability. Three levels of committees were formed to implement the Jaffna healthy city programme. The steering committee was created with high-level decision makers from the state institutions involved in the implementation of a healthy city. The role of the steering committee is to provide leadership and oversee the progress. The role of the management committee is to monitor and evaluate the progress of the programme and report to the steering committee. The implementation committee is responsible for executing the programme.

The following members were included in the initial meeting held at the District Secretariat Jaffna.

Steering Committee	**Management Committee**	**Implementation Committee**
Mayor	Dr.R.Surendrakumaran	Dr.Dinesh Coonghe (Head of Community and family medicine, UOJ)
Government Agent of Jaffna	Jaffna MC commissioner	Public Health Engineering Department
Secretary to Governor	Zonal Director of Education	School medical officer – Dr.S.Nithiyananda

Provincial Director of Health Service	Mr.S.T.Pieris (Programme coordinator for school Health and Nutrition, PDE NP.	School Team – Eng.S.Radhika
Provincial Director of Education Service	Urban Development Authority	Garbage Management Team - Mr.K.Rakulan
Representative of Dean, University of Jaffna	Road Development Authority	Physical activity Team- Mr.N.Navaprasanth
Country representative WHO	Central Environment Authority	Project coordinator – T.Tharsana
	Divisional Secretariat Jaffna and Nallur	

It was decided that the Department of Community and Family Medicine, Faculty of Medicine, University of Jaffna would take the coordination role with all three committees and conduct the necessary baseline survey, monitoring as well as reporting of the actions under the project.

All stakeholders and volunteers would contribute in implementing the project within Jaffna municipal council area.

4.6 Popularizing the concept

Formation of the committee paved the way for popularising the concept through social media. The team wanted to develop a logo for the programme and after consultation with the stakeholders, the logo was developed. A Facebook page of the programme was created under the name of ‘Jaffna healthy City’. University of Jaffna agreed to provide a webpage on their website. Also, Government and Non-Governmental Organizations’ permissions were obtained to use their logo for advocacy activities of the healthy city programme.

Figure 4. 2: Logo of Jaffna Healthy city

Chapter 05

COVID19 and implementation of Jaffna healthy city

While the team was working actively to set up a programme for Jaffna healthy city, mid-March this year, an unexpected interruption was created by the COVID 19 pandemic. Several measures were implemented by the Government of Sri Lanka to control the effects of the pandemic. Lockdown was implemented and the movement of people was restricted through nationwide curfews imposed by the state from 20th March 2020 to 19th April 2020. Schools and offices were closed down. Established healthy city working teams were active in disseminating information about the prevention of COVID 19 and in working with the communities in food distribution and other support.

In early part of May, the state was looking into an exit plan and the committee worked with the schools to assess the facilities by using the Google forms that were available at the schools for the prevention and control of COVID 19, particularly for when they started to function.

The team, especially the school medical officer was using the social media groups that were created to educate the parents on COVID19 prevention.

The team formed a group to develop public education materials in Tamil and also prepared video and audio based health education materials with the support of Department of Drama and Theatre, Faculty of Arts, University of Jaffna. The purpose of the activity was to support in increasing the institutional capacity of relevant institutions that were working in the area of healthy settings and to strengthen by breaking the chain of transmission of COVID-19 through community engagement.

As an initiative of the Jaffna Healthy City, video and audio-based health promotional activities were carried out for COVID-19 control in the Northern Province. This is part of the mechanism where the whole-of government and whole-of-society approach, advocated by the World Health Organization (WHO) in responding to the COVID-19 pandemic was adopted by the Sri Lankan government.

To engage the community on breaking the chain of transmission of COVID-19 in the Northern Province, the objective is to create health promotion video and audio clips in the following settings:

- Public markets
- Grocery stores/supermarkets
- Public transportation
- Offices
- Banks
- Barber/beauty salons
- Gathering places (e.g. weddings)
- Places of worship
- Schools and universities
- Restaurants/tea shops

Also identify already developed COVID 19 related health promotion video clips and dub in other languages.

- https://youtu.be/XZ4pca23Vaw
- https://www.youtube.com/channel/UCSu281jSZLXgzKVUpAja1RA/videos

Office based physical activity improvement related online survey is already prepared and awaiting approval of the study areas' permission. Likewise, waste management related survey is also ready.

At present, the government is preparing to change the public health and social measures in implementing its exit strategy. The public have a significant role to play in breaking the chain of transmission of COVID-19.

Considering the WHO concern of the vulnerability of the low socioeconomic strata groups, especially the urban slums, in the infection of COVID 19 and other infectious diseases such as HIV/AIDs and TB, the Jaffna healthy city programme had a discussion and decided to add two additional themes in the programme. The themes included are;

1. COVID related
2. Hand washing

The following figure 9 shows the last updated settings with themes of the Jaffna healthy city programme during COVID 19.

Figure 5. 1: Themes selected to implement the actions

School Settings

COVID 19 Themes

1. Awareness about COVID transmission through Viber and WhatsApp groups;
2. Parent - Teacher training manual on COVID 19 prevention developed, printed and distributed;
3. Development and distribution of ‘Back to school campaign’ videos;
4. Building hand wash stations in schools;
5. Facilitating supplies for hand wash stations;
6. Monitoring of hand wash stations;
7. Establishment of a sickroom with first aid facility and facility for temperature checks and recording.

Hand Washing Theme

1. Assessment of WASH facility;
2. Advocacy with other organizations to facilitate WASH facility;
3. Provide improved sanitary facilities where required;
4. Improving cleanliness of sanitary facilities;
5. Facilitate improved water supply

Preparing final key indicators

Key indicators for the updated themes of each setting was developed and checked for feasibility. Finalized key indicators are annexed. Annexure(1)

5.1 Implementation in school settings

As part of the initial learning process, the team of school settings wanted to implement the health city programme in selected schools in JMC area. After considering the factors such as the size of the school, feasibility of implementation, previous experiences of support rendered for the implementation of similar programmes and the need of the community, the following ten schools were identified;

1.Holy Family Convent National school
2.Jaffna Hindu Primary School
3.Nallur St Benedict Roman Catholic Vidyalayam
4.Osmania College
5.St John Bosco Vidyalayam
6.St Patricks College
7.Angel International School
8.Kanagaratnam Mathiya Maha Vidyalayam
9.Columbuthurai Thuraiyappa Vidiyalayam
10.Vaitheeswara College

Approval for the implementation was obtained from the relevant authorities, including the Ministry of Education, Northern Province. A meeting was held with the principals and teachers selected as school level focal points for the programme.

Team also visited the schools and had introductory sessions in a few schools; the activities were interrupted by the closure of schools. We created WhatsApp groups with allocated teachers of the selected schools for distribution of details on COVID 19 awareness amongst students through Viber and WhatsApp.

Baseline survey on waste management, physical activity and WASH was finalized for online and direct distribution.

Develop pre and post-surveys, to assess knowledge improvement among teachers and students on the training programme subject.

- Published Data on Ministry of Education website: http://www.edumin.np.gov.lk/medias/news/218-%E2%80%9Cjaffna-healthy-city%E2%80%9D-programme-introductory-meeting.html

Manual Guide for setting up COVID-19 measures was prepared in Tamil and English languages and circulated amongst the teachers.

5.2 Implementation in office settings

A list was prepared of government institutions in the area. A scientific study is being carried out by a postgraduate student to understand the current practices of waste management in the office settings.

Survey forms were created to assess the level of physical activities and the facilities available for physical activities. Currently, due to the ongoing COVID 19 restrictions, it was planned to carry out the survey by using the Google form. Survey forms were distributed to the staff at Jaffna Divisional Secretariat and the responses were collected. The analysis is in progress.

5.3 Implementation in public spaces

Permission for household waste management surveys was obtained from Jaffna and Nallur divisional secretariat. The survey will be done by the medical students of Faculty of Medicine, University of Jaffna as part of their academic activities.

The team together with the commissioner visited Kakativu recycling site and Kallundai dumping site, to understand the solid waste management progress and challenges within municipal council area. The data related to waste collection was taken from PHED, JMC. The detail report is annexed. Annexure (6)

Selected GN _ Garbage management Survey

No	GN No	GN	Sample size
1	J/73	Jaffna Town west	20
2	J/74	Jaffna Town east	20
3	J/65	Passaiyoor	20
4	J/80	Grand bazar	20
5	J/108	Nallur South	20
6	J/98	Vannarpannai South	20
7	J/70	Gurunagar East	20
8	J/87	Moorstreet South	20
9	J/76	Chundukkuli North	20
10	J/63	Columbuthurai West	20

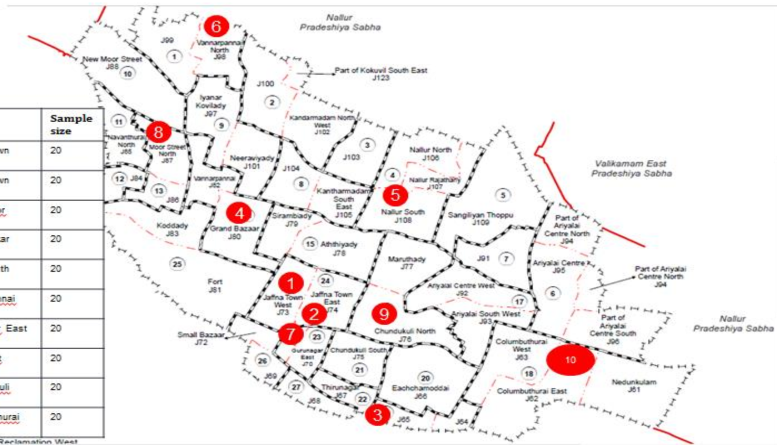


Figure 5. 2: Selected GNs within Jaffna MC to conduct survey

Publications and regular local TV programmes are conducted to create awareness among the public on hand washing and other preventive measures during COVID-19 pandemic.

A WhatsApp group named ‘Jaffna as cycle icon’ was formed and weekly activities are carried out by a group of youths. It is now becoming a popular event.

Chapter 06

6.1 Future directions

Stakeholders were sensitized and the settings and themes were finalized. Committed teams have been built with the support of policy makers. The success of the programme greatly depends on the robust coordination mechanisms and strong leadership for implementation and sustainability. Three levels of committees were formed to implement the Jaffna healthy city programme. Coordinating office was developed, and full-time staff appointed. Indicators were developed for monitoring the progress. Baseline surveys are in operation in all three settings. Essentially, a steady foundation is in place.

As per the WHO short guide on implementing the healthy city(8) programme, the programme successfully passed the implementation steps of initiation. It is progressing to the second step of getting organised. In the second step, the committees have been formed and an office has been setup. Immediate next steps are to build the capacity and organise and mobilise the community. These are the challenging steps. A planned, organised approach is essential to overcome the challenges.

Many community actors are very keen to work with the Jaffna Healthy City Programme. It is important to clearly define their roles and responsibilities. The process of defining the roles of different partners will help them deliver their tasks effectively and also ensure accountability. Based on the identified actions and the indicators to be achieved, activity packages have been developed. Advocacy programmes were developed to attract more partners to join the team. Base line surveys also provide more input to develop more evidence based actions.

These efforts takes us to the more challenging third step. The programme needs more resources to sustain the implementation. Enhanced team spirit and commitment will make this project a success.

6.2 Conclusion

Awareness and commitment of the citizens working in different settings and different organizations have been established. Committees have been formed

and coordination mechanisms developed. Plan of action has been developed. The actions will change from time to time with changing scenarios, such as COVID 19. COVID 19 pandemic created new challenges in the plans and actions, thus creating new learning styles for the programme. The programme adopted new strategies and themes. The lessons learnt were useful for the successful implementation of the programme. The model could be used as one of the learning models in the region.

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Annexures

Annexure 1: Action and indicators in each setting

Outcome 01: Improve the Health and Nutritional status of the children in the selected schools		
Output 1.1	Improved awareness on COVID 19	**Indicators**
Activity 1.1.1	Conducting awareness programs on COVID transmission through Viber and what's up groups established	% of groups active status on Whatsapp and viber
Activity 1.1.2	Develop, print and distribute Teacher and Parents Training manual:	Assessment on improved knowledge through pre and post survey
Activity 1.1.3	Development and distribution of "Back to school campaigns-videos"	Number of school and number of views from school students
Activity 1.1.4	Building Hand washing stations in schools	% of improved gap on require hand wash station
Activity 1.1.5	Facilitating supplies for hand washing stations	%of filled gap in required hand washing facilities
Activity 1.1.6	Monitoring of hand washing stations	Assessment on students practices through monitoring
Activity 1.1.7	Establish health promotion with first aid facility and facility record temperature	Assess the facility on selected schools and do survey
Output 1.2	Improved knowledge and practices on waste management	
Activity 1.2.1	Establishing school gardens	Assessment on availability of school gardens on selected school and the practices % of schools with practice
Activity 1.2.2	Conducting awareness programmes for school students on 4 R , awareness: [Poster and essay competitions in schools, awareness: Celebrating Environmental day in schools]	No of programmes conducted in schools
Activity 1.2.3	Improved knowledge on 4R	Knowledge with Pre & post survey

Activity 1.2.4	Create waste segregation methods in schools	No of bins distributed to schools and monitor practice
Activity 1.2.5	Reduce plastics usage in schools	Assessment on practices in plastic usage at school level
Output 1.3	Improved knowledge and behavior change on healthy diet pattern among children	% of schools receive awareness to follow healthy diet
		No of training programs conducted for school students on healthy diet pattern
Activity 1.3.1	Develop videos on healthy eating	No of videos developed
Activity 1.3.2	Distribute the videos to the school children	No of videos distributed
Activity 1.3.3	Asses improved knowledge on healthy food	% of knowledge improved
Activity 1.3.4	Assess improved dietary pattern	% of behavior improved/ changed
Output 1.4	Improved facilities WASH to deliver a better service.	
Activity 1.4.1	Assessment of WASH Facility	% of schools having proper WASH facility
Activity 1.4.2	Advocacy with other organization to facilitate WASH Facility	No of organization
Activity 1.4.3	Provide improved sanitary facility where required	% of schools requires facilities
Activity 1.4.4	Improving cleanliness of sanitary facility	Monitoring and photographs to analyze
Activity 1.4.5	Facilitate improved water supply	% of schools improve the facilities in water supply
Output 1.5	Coordinating committee at school level to promote health	
Activity 1.5.1	Establishment of functioning school clubs / environment clubs	number of clubs and number of participants
Activity 1.5.2	Create a communicating platform for dissemination of information and to obtain support	Number of post shared on social medias

Output 1.6	Improved physical activity among school children	
Activity 1.6.1	Conduct Baseline survey on physical activity	Number of survey and the analyzed data
Activity 1.6.2	Create cycling club at school level	Number of club and number of participants
Activity 1.6.3	Awareness and drawing activities with club members	Number of programmes organized
Activity 1.6.4	Coordinate event on cycling with selected schools	Number of participants from each schools
Output 1.7	Improved planting coverage area in Selected schools	
Activity 1.7.1	Planting trees in selected schools	Number of plantation distributed
Outcome 02: Improve the Health and Nutritional status and healthy practices among people		
Output 2.1	Improved practices in waste management in terms of disposing and recycling among selected households	Indicators
Activity 2.1.1	Assess the knowledge and practices related to waste management	Number of survey conducted and outcome
Activity 2.1.2	Create awareness in selected community	Number of awareness programme conducted
Activity 2.1.3	Liaise with other organizations to provide plastic free options	Number of organization who support to plastic free options
Activity 2.1.4	Improved waste management systems (composting/ segregation etc.)	Monitoring the practice of people through field visit
Output 2.2	Improved behavior in physical activity and the practices	
Activity 2.2.1	Increase awareness on the benefits of physical activity	Number of awareness programmes
Activity 2.2.2	Advocacy programmes with city planners of	Meeting with city planners and the outcome

	enabling environment for Physical activity	
Activity 2.2.3	Develop a video/ exercise programme to create awareness	number of videos on selected theme
Activity 2.2.4	Distribution of the videos through social media	Number of post and vies from social media on videos.
Activity 2.2.5	Create enabling places (Parks/ streetscape) for PA	Number of attraction techniques used to collaborate with people in PA
Activity 2.2.6	Assess the level of participation in PA	Number of participants regularly
Output 2.3	Improved knowledge and behavior change on healthy diet pattern	
Activity 2.3.1	Creating social Media platforms connecting community to distribute awareness videos in healthy diet pattern	number videos and post on healthy diet patterns which are shared on social media
Outcome 03: Improve the Health and Nutritional status and healthy practices workers		
Output 3.1	Improved behavior in physical activity and the practices	Indicators
Activity 3.1.1	1.Create awareness (of benefits and recommendations for physical activity) in selected work settings	Number of survey conducted and number of awareness programmes
Activity 3.1.2	2.Develop educational videos on a physical activity that can be carried out at work stations	Number of videos developed on PA
Activity 3.1.3	3.Create walking groups in selected work settings	Number of groups and participant from ach organization
Activity 3.1.4	4. Advocate for convenient gym membership	Number of interested people to join
Output 3.2	Improved practices in waste management in terms of disposing and recycling among selected households	

Activity 3.2.1	Assess the practices related to waste management in different work settings	Number of survey conducted and outcome
Activity 3.2.2	Create awareness in selected work settings on 4R	Number of awareness programmes in each organization
Activity 3.2.3	Liaise with other organizations to provide plastic free options	Number of organization providing support
Activity 3.2.4	Improved knowledge on 4R	Pre & post survey and outcome
Activity 3.2.5	Create waste segregation methods in selected offices or organizations	Monitoring practices and analyze photo graphs
Activity 3.2.6	Reduce plastics usage	Number of awareness programmes on that and outcome
Output 3.3	Improved knowledge and behavior change on healthy diet pattern	
Activity 3.3.1	1.Develop videos on healthy eating	Number of videos developed
Activity 3.3.2	2.advocacy and training programmes for the management and employees of the work setting	Number of training programmes on healthy diet pattern
Activity 3.3.3	3.improve the Dietary pattern of workers	Assess with pre and post survey based on their attitude and behavior change

Annexure2: Implementation Team Members

Dr P A D Coonghe	Head, Senior Lecturer, Department of Community and Family Medicine, Faculty of Medicine, University of Jaffna
Dr R Surenthirakumaran	Senior Lecturer, Department of Community and Family Medicine, Faculty of Medicine, University of Jaffna
Mrs T Tharsana	Project Coordinator - Jaffna Healthy City
Team Members	
Dr S Nithiyananda	School Medical Officer
Mr S T Pieris	Provincial Program Coordinator for School Health and Nutrition, Provincial Department of Education, Northern Province
Mrs Sasrubi Sathees	Research Assistant, Faculty of Medicine, University of Jaffna
Eng Radika Sivakumaran	Child Survive and Development officer, UNICEF
Dr R Ketheeswaran	Director, Provincial Department of Health Services, Northern Province
Dr R Kesavan	Consultant Community Physician, Ministry of Health, Northern Province
Mr K Kanapathy	Retired Assistant Director of Education, Island Zone
Mr C Jackseel	Deputy Director, Administration, Department of Health services, Northern Province
Mr T Ayavan	Assistant Director of Education, Department of Education, Northern Province
Eng S Mayuran	Deputy Project Director, Strategic Cities Development Project- Jaffna
Mr Vyravan Premakumar	Public Health Inspector, Department of Community and Family Medicine, Faculty of Medicine, University of Jaffna
Dr Nadaraja Prabu	Co- founder, Suvadi
Mr T Micheal	President, Jaffna Diabetic Association

Mr S Senthurajah	Executive Director, SOND
Ms G Niruba	Documental Office, SOND
Ms V Jency	Field Officer, SOND
Mr Vyramuthu Miralan	Director of Product Managemen, Ceymplon Pvt Ltd
Mr Y Sharmmhik	Activist, Organic Movement
Mr N Navaprasanth	Research Assistant, Faculty of Graduate Studies, University of Jaffna
Mr. R. Nishanthan	Assistant Commissioner of agarian Department
Mr. P. Rajkumar	Development officer
Mr. S.Sutharsan	Coordinator/Oferr. ceylon
Mr. P. Roneybus	Officer/ Oferr. ceylon
Mr. M. Piratheeban	Zonal technical specialist/ World Vision
Ms. T. Anitha	Development officer
Ms. T. Sivabalasuntharam	Land use planning officer
Mr. Jehan Aruliah	Programe Head
Mr. K. Rakulan	Program manager
Mr. N. Kugathasan	Development officer
Dr. N. Pirabu	Eco. Activist,Co- founder, Suvadi
Mr. S. Pirasanth	Technological officer
Mr. Kirisan	Organic Farmer
Ms. I. Karththiga	Graduated
Mr. T. Thanujan	Activist, Organic Movement Instructor, Department of Earth Resources Engineering, University of Moratuwa
Dr. S. Thuvaraga	MSc. Community Medicine Trainee, Post Graduate Institute of Medicine, Colombo

Annexure 3: Questionnaire on Physical Activity among School Students

Physical Activity among School Students

WHO healthy City Project in Jaffna: Department of Community and Family Medicine, University of Jaffna.

1. Full Name:
2. School Name:
3. Age in completed years to 01.10.2020:
4. 4. Gender: Male ☐ Female ☐
5. Area of residence (DS division):
6. Do you have any chronic disease which was diagnosed by health professional? *

   ☐ Yes

   ☐ No

7. if yes please mention *

8. Are you currently taking medication for that disease? *

   ☐ Yes

   ☐ No

9. Knowledge of Physical Activity *

	yes	No	Don't Know
PA would help in optimizing blood sugar control	☐	☐	☐
PA would help in optimizing blood pressure control pressure control	☐	☐	☐
PA improves mental wellbeing	☐	☐	☐

10. What is the distance between your school and home? (Km)

11. What is the mode of transport to your school/ day to day activities *
   - [ ] Public Transport
   - [ ] School service bus
   - [ ] With parents
   - [ ] Walking
   - [ ] Cycling
   - [ ] Other

12. How often are you engaged in exercise/activity per week - walking/ cycling/ any other exercises or activity (time a week - in number of days a week) *

13. How often are you engaged in exercise / activity per week - walking/ cycling/ any other exercises or activity (Average duration in minutes)

14. Why did you participate in this activity? *

15. Would you recommend this for others? *
   - [ ] Yes
   - [ ] No

16. Do you have time for exercise in your school? *
   - [ ] Yes
   - [ ] No

17. Once all the arrangements are made, which of the following would you like to do for school exercise? *
   - [ ] Yoga
   - [ ] Bicycle ride (to a selected destination)
   - [ ] Exercises performed from the isthmus.
   - [ ] Other

18. Height (cm) *

19. Weight (kg *

Cyclin

20. Do you own a bicycle? *

☐ Yes

☐ No

21. Can you come to the school on a bicycle? (Only those who do not currently come to the school on a bicycle can respond) *

☐ Yes

☐ No

22. What additional facilities do you need to get to the school on a bicycle? *

☐ Need a Bicycle

☐ Controlling highly trafficked roads

☐ controlling dogs on the streets

☐ Facilities needed to train me to ride a bicycle

☐ Organizing Cycling group from locations to School

23. Are you using a bicycle for daily activities? *

☐ Yes

☐ No

24. What are the struggles you are facing during regular cycling?

- [ ] No Bicycle
- [ ] High traffic in the road
- [ ] Dogs in the streets
- [ ] Can't ride a bicycle

25. Want to ride a bike with your family for fun? *

- [ ] Yes
- [ ] No

26. If your answer is yes, then which of these places would you like to cycle to? *

- [ ] Tuition center
- [ ] Temple
- [ ] Market
- [ ] Home of relative / friends
- [ ] Beach/Parks
- [ ] Other

27. How many times a week do you use a bicycle for these purposes? *

28. Since your health has been important in the last 5 years, has there ever been a time when you wanted to use a bicycle? *

- [ ] Yes
- [ ] No

29. Specify how much you like bicycle, the higher the point the higher the option. *

1	2	3	4	5
☐	☐	☐	☐	☐

Annexure4: Introductory session of Jaffna Healthy City Project with selected school principals

Date: September 18, 2020

Time: 09:00 AM -10:00 AM

Venue: Conference Hall, Ministry of Education.

School Principals and responsive teacher

01	St.Patrick's College
02	J/Vaidyeshwara College
03	Angel International School
04	J/ Holy Family Convent
05	J/Nallur St.Benedict R.C.V
06	J/ Hindu Primary school
07	J/St John Bos'co VID
08	J/ Canagaratnam M.M.V
09	J/Osmania College
10	J/ Colombuthurai Thuraiyappa VID

Purpose of the meeting**:** Introductory session for Education officers and school teams on Jaffna Healthy City Project.

The following matters are discussed:

1. Welcome note and introduction to Jaffna Healthy City project by L.Ilangovan (Secretary/MOE/NP)
    - Obesity
    - Rapid urbanization
    - Position of Jaffna in Education
    - Critical factors in health status
    - Role of principals
2. Presentation on Jaffna Healthy City Project by Dr.R.Surenthirakumaran
    - Goals of the project
    - Objective of the project
    - Setting and themes of the project
    - Process of the project

- Importance of the project
- Brief of coordination committee
- Explanation on log frame of school activities

3. Activities in school setting and strengthening the existing capacity by Dr.S.Nithiyananda
4. Comments on Health sector development By Mr.S.T.Pieris
5. Comments on schools selection by S.Thevakumaran (DEO/ZEO/Jaffna)
6. Plantation on selected schools by Dr.Kumarendran

Outcome:

- All selected school principals accepted to implement the project and their support
- All selected schools accepted to allocate a respective teacher and committee for health promotion

Annexure5: Questionnaire for schools on WASH

WHO Health City, Jaffna

School Secondary Health and Water and Sanitation DATA Collection

Name of the School:

Demography

Number of student population:

Boys:

Girls:

Number of Teachers (including principal):

Male:

Female:

Water

1. Availability of water for Hygiene Purpose

Yes/No

If "No" what could be the plan –

2. Availability of drinking water

Yes/No

If "No" what could be the plan?

3. Is water connected to all toilets and urinals?

Yes/No

If "No" what could be the plan?

4. Is water connected to all hand washing stations?

Yes/No

If "No" what could be the plan?

5. Do you treat water at school for drinking?

Yes/No

If “No” How you assure the safety of the drinking water?

6. Is the storage capacity sufficient for school needs?

Yes/No

If “No” how can you make it sufficient?

<u>Sanitation</u>

1. Are the toilets sufficient for all children? (Refer Norms for boys and girls) – See Annex

Yes/No

If no, how many needed? (Indicate number separately for toilets and urinals)

2. Are the toilets enough for all children? (Refer Norms for boys and girls) – See Annex

For Girls

Yes/No

If no, how many needed? (Indicate numbers only for toilets)

3. Do the male teachers have enough toilets?

Yes/No

If no, how many needed? (Indicate numbers only for toilets)

4. Do the female teachers have enough toilets?

Yes/No

Is no, how many needed? (Indicate numbers only for toilets)

5. Do you see queuing in front of the toilets during intervals?

Yes/No

If yes, what could be done to reduce it

6. Do you have Menstrual waste management plan in place for school?

Yes/No

If No, what could be done?

7. Do you have Menstrual waste management plan in place?

Yes/No

If No, what could be done?

If you have adolescent girls in school:

8. Do you have a stock of sanitary pad maintained at school?

Yes/No

If No, what could be done?

If yes, do the girls know how to access it when need arises?

9. Do you have a monitoring plan to see the availability of soap at school toilet?

Yes/No

If No, what could be done?

Hand washing

1. Are the hand washing stations sufficient? (according to the COVID – 19 IPC)

Yes/No

If No, what could be done?

2. Are the hand washing stations sufficient? (According to the COVID – 19 IPC guidelines.)

Yes/No

If No, what could be done?

3. Do the hand washing stations have soap all the time?

Yes/No

If no, what could be done to make sure the soap is available all the time?

4. Is the hand washing station waste water managed well?

Yes/No

If no, what could be done to make sure the soap is available all the time?

Annexure6: Solid Waste Management in Jaffna Municipal Council.

Jaffna is the provincial capital city of Northern Province. The city is a historical port city, which was established in colonial era. Jaffna has one of the highest annual GDP growth rate and is driven by a service economy. A city is a large human settlement. People are the main driving force in a city. The dynamism of a city is dependent on people and their behavior. The Jaffna municipal council consists of Jaffna and part of Nallur Divisional Secretariat Division.

DEMOGRAPHY

Population	:	**94,000**
Administrative area	:	**1,910.6 ^{ha}**
Density	:	**52 $^{persons / ha}$**

Solid waste generation & management: Jaffna MC is responsible for waste management in Jaffna municipal council area and they collected waste from each household through collection vehicles from respective collecting zone. And also in some areas, they use handcart in narrow roads where vehicles cannot access. The kerbside collection system with waste bins and stationed collection system for mixed waste are also available in MC area. Twice a week, the waste is collected from large shops and restaurants. MC has imposed a waste tax of rs.300 for 200 L barrel and rs.1,110 for garden waste/any tree disposal.

Food waste of approximately 3 tons are collected from hotel sectors per day. Private and government hospitals which are located within the city area also get solid waste management services form Jaffna MC.

Solid waste	
Waste Generation	104.87tons/day (JICA,2016)
Waste Collection	82.3tons/day (JICA,2016)
Collection coverage	77.8% (JICA,2016)
Solid waste treatment / Disposal method	Open dumping + composting

Total cost of waste collection	177,974,000LKR (JICA,2016)
Available area for disposal	20.8 hectares Kallundai dumpsite
Duration in operation	Since 2002
Waste water & Septage	
Sewerage cover	-
Septage collection	11 m^3 /day (JICA,2016)
Treatment and disposal	Treatment plan in Recycling unit kakativu

Waste Disposal Details average per day in Jaffna municipal council

Waste	Load
Generated waste in JMC	70
Collected waste by JMC	68
Biodegradable waste	47
Plastic waste	5
Polythene waste	4
Glass waste	1/2
Shopping bag waste	2
E-=waste	1/2
Bata, shoe, slippers waste	1/2
Tin waste	1/2
Cloth waste	1/2
Food waste	1
Bones waste	1/2
Other (Iron, yogurt, furniture…..)	4

Details on daily garbage collecting vehicles (2020)

	No of vehicle	Load
Waste collector Tractor in zones	18	36
Waste collector compact in zones (3*2.5*1)	3	7.5
Waste collecting vehicle (payment)	1	2
Polythene	1	2
Government organization	1	2
Market waste – morning compact (1*2.5*1)	1	2.5
Market waste – evening compact (1*2.5*2)	1	5
Waste Night compact (1*2.5*2)	1	5
Waste collecting vehicle _Kakativu	1	1
Waste collecting vehicle _Bones	1	1

Waste collecting vehicle _Drainage	1	2
Waste collecting vehicle (payment)_Private	1	2
Total	31	68

58Tons (58000Kg) waste collected per Day

No.	Item	Tractor	Kg
01.	Plastic	5	1850
02.	Polythene	4	1000
03.	Glasses	0.5	1500
04.	Shopping bags	2	500
05.	E- Waste	1	600
06.	Tire	0.5	500
07.	General place waste	3	3000
08.	Tin	0.5	600
09.	Food Waste	3	3600
10.	Composed waste	44	39600

Sale Recycle Items in Recycle unit Kakativu

No	Items	Rate
1	Polythene LDPE Bail	3.50
2	Polythene LDPE Crush	15.00
3	Polythene LDPE compact	30.00
4	Polythene PP Bail	3.50
5	Polythene PP Crush	15.00
6	Polythene PP compact	30.00
7	Polythene HDPE Bail	1.00
8	Polythene HDPE Crush	15.00
9	Polythene HDPE compact	30.00
10	Pet bottles – Bail	12.00
11	Bottles flop – KG	25.00
12	Plastic Bail	25.00
13	Plastic crush	30.00
14	Plastic pellet	50.00
15	Seline bottles Bail	12.50
16	Cloth Bail	1.00
17	Glass KG	1.00
18	Glass Piece KG	1.00
19	Iron KG	5.00
20	E-Waste KG	2.00
21	Beer Cane KG	10.00
22	Yogurt cup KG	1.00
23	Urea Bag	1.00

The most common practice of SW disposal in the city however is to dump SW into an open land in Kallundaii which is located approximately 6 km away from Jaffna city. The land is situated close to the Jaffna lagoon in Maanippai area, Valikamam south west pradeshiya sabha has an extent of 20.8 hectares. The General hospital is facilitated with an incinerator to manage hazardous waste.

The infectious waste (syringes, etc.) is not taken to the disposal site since it is incinerated. However, the waste generation from hospitals mainly consists of municipal waste and the disposal amount at the Kallundai disposal site is approximately 4.5 tons/day (JICA, 2016). Due to these improper SW disposal practices, Jaffna lagoon and the adjacent coastal area is highly prone to pollution.

JAFFNA MUNICIPAL COUNCIL

SOND Better World Movement

Jaffna Diabetes Association

Save a Life

Jetwing HOTELS

unicef for every child

Scaling Up Nutrition 10TH ANNIVERSARY

ceymplon