National Strategy for Prevention and Control of Noncommunicable Diseases (NCDs), Injuries, disabilities and care of the elderly

&

NCD National Action Plan 2014-2018

Ministry of Health, Timor-Leste

Abbreviations

ADL	Activities of Daily Living
AFHCP	Age Friendly Health Care Program
BMI	Body Mass Index
BMI	Body Mass Index
COPD	Chronic Obstructive Pulmonary Disease
CVD	Cardiovascular Disease
DALYS	Disability Adjusted Life Years
DHS	Demographic Health Survey
ECG	Electrocardiography
FCTC	Framework Convention on Tobacco Control
GSHS	Global School-based Student Health Survey
GYTS	Global Youth Tobacco Survey
HBV	Hepatitis-B virus
ICD-10	International Classification of Diseaes version 10
LISAI	Livrinho Saude Amigavel ba Idosus
MRD	Medical Records Department
PWD	People with Disability
SISCa	Servisu Integradu da Saúde Communitária
NCD	Non communicable Diseases
NCDRF	Non communicable disease risk factors
PEN	Package of Essential Noncommunicable Interventions
PHVO	Partially Hydrogenated Vegetable Oils
SEAR	South-east Asian Region of WHO
UNHLM	United Nation High Level Meeting
VIA	Visual inspection with Acetic Acid
WHA	World Health Assembly
WHO	World Health Organization
WHO-STEPS	WHO-STEPwise approach to NCD Surveillance

Preface

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1. Prevention and Control of Noncommunicable Diseases

1.1 Preamble

Noncommunicable diseases (NCDs)- are group of conditions that includes cardiovascular diseases, cancer, diabetes mellitus, chronic respiratory disease among many other diseases characterized by their chronicity and not being transmitted from person to person. A large proportion of NCDs are preventable. They share modifiable behavioural risk factors such as tobacco use, unhealthy diet, physical inactivity, and the harmful use of alcohol. These lead to four major metabolic risk factors: overweight/obesity, high blood pressure, raised blood sugar and raised blood lipids, which in turn are responsible for four group of major NCDs – cardiovascular diseases, diabetes, chronic respiratory diseases and cancers. Apart from these four diseases, there are other chronic conditions such as renal, hepatic and gastroenterological diseases as well as oral diseases which share some of these risk factors, but more importantly, can share the platform of chronic NCDs for their prevention and control strategies.

Apart from the traditional risk factors listed above, infectious and environmental factors are also increasingly contributing to the risk of NCDs. Infections with Hepatitis B & C, Human Papilloma viruses and helicobacter pylori may be responsible for up to one fifth of the cancers in developing countries. Household air pollution due to solid fuel combustion is an important risk factor for chronic respiratory diseases, which is specially relevant in developing countries. The increasing burden of NCDs is attributed to population ageing, rapid and unplanned urbanization, as well as international trade and marketing practices. Globalization has brought processed foods and diets high in total energy, fats, salt sugar into daily life of people in developing countries. Aggressive marketing by tobacco and alcohol industry is also resulting in an increase in use of these products in developing countries. About one third of Timor Leste's population resides in urban areas.
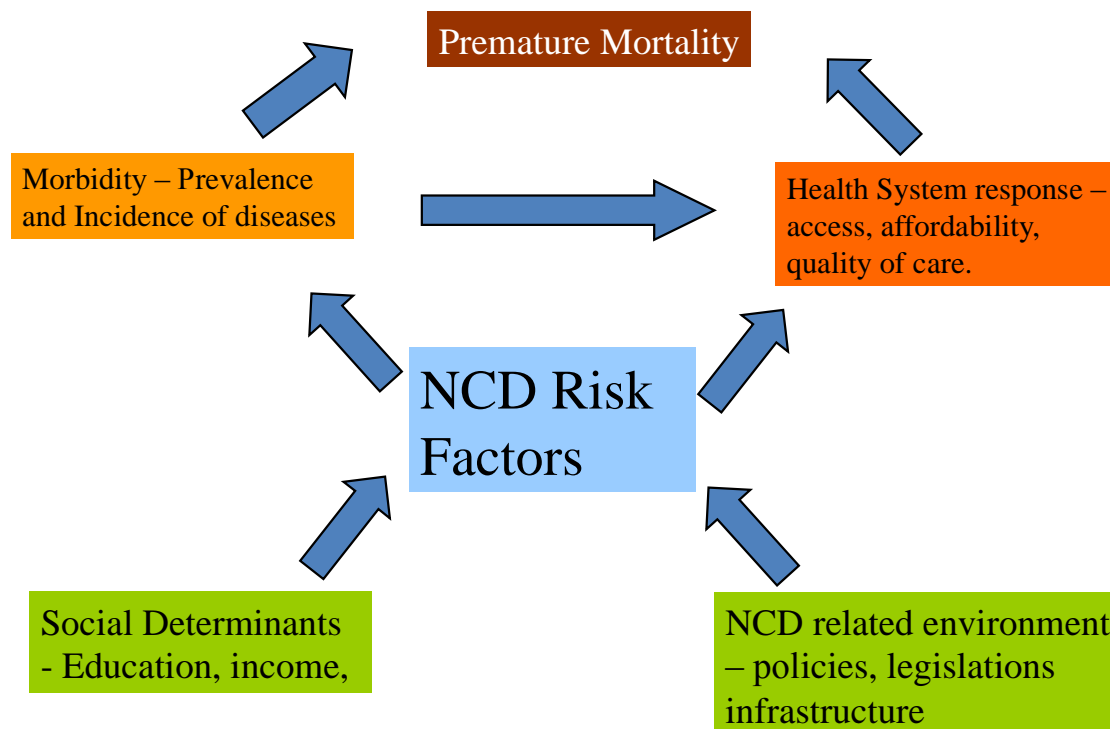
Figure 1. Causal Framework of NCDs

Besides an enormous health problem, NCDs pose a serious economic threat to individuals, families as well as governments. Premature mortality of individuals at their most productive period of life (40-60 Years) not only causes a loss to the economy due to lost productivity but also results in families being impoverished. It has also been shown in other countries that tobacco and alcohol use are more common among the poor and in the long run, these poor people will have higher levels of morbidities if steps are not taken now. This makes it imperative for governments to initiate actions to prevent and control NCDs. Health gains can be achieved much more readily by influencing public policies in sectors like trade taxation, education, agriculture, urban development, food and pharmaceutical production than by making changes in health policy alone. Therefore, there is a strong case for involving all government departments as well as private sector to have a comprehensive and multi-sectoral approach for prevention and control of NCDs.

Fortunately, feasible and cost-effective interventions to reduce the burden and impact of NCDs exist, and sustained action to prevent risk factors and improve health care can avert many preventable and premature deaths. Global Initiatives in the area of NCDs started in the year 2000 with the adoption of the World Health Assembly of the Global Strategy for the prevention and control of NCDs which rested on three pillars of surveillance, primary prevention and strengthened health care. Due to sustained advocacy by many international agencies including WHO, the UN General Assembly convened a High-Level Meeting (HLM) in New York in September 2011. As a follow-up to the political declaration of the UN HLM, WHO developed a Global Action Plan (2013-2020) and a comprehensive monitoring framework with indicators and global voluntary targets through a consultative process. The 66th WHA in May 2013 while endorsing the Global Action Plan along with the list indicators and targets, also urged Member States to consider development of national plans of action along with national monitoring framework with targets and indicators.

1.2. Situational Analysis

Burden of NCDs and its Risk Factors

Noncommunicable diseases are currently the leading global cause of death worldwide. WHO estimates that in 2008 of the 57 million deaths that occurred globally, 36 million –almost two thirds – were due to NCDs, comprising mainly of cardiovascular diseases, cancers, diabetes and chronic lung diseases. Of the estimated 14.5 million total deaths in 2008 in SEAR, 7.9 million (55%) were due to NCDs. NCD deaths are expected to increase by 21% over the next decade. Of the 7.9 million annual NCD deaths in SEAR, 34% occurred before the age of 60 years compared to 23% in the rest of the world.

Timor Leste is facing a double burden of disease. Communicable diseases such as TB, Malaria and Dengue continue to pose a public health challenge. However, due to effective measures by the government, these diseases are coming down. On the other hand, NCDs such as cardiovascular, chronic obstructive pulmonary diseases have emerged among the top ten causes of mortality. Hospital authorities are unanimous in their opinion that admissions due to these diseases are on the increase in the hospitals and are also getting younger. The data on admissions and deaths from the public hospitals confirm this trend. (table 1). Based on this data 22.4% of deaths were due to

NCDs, which was equivalent to that of communicable diseases. Almost half of the deaths were classified as due to non-specific causes. Admissions due to NCDs were lesser indicating probably, higher case fatality rate of NCDs.

Table 1. Mortality and Morbidity due to NCDs in hospitals of Timor Leste (Jan-Dec 2012)

	Admissions		Deaths	
Disease categories	Number	%	Numbers	%
Communicable Diseases	17193	49.9	272	22.2
Cardiovascular diseases including stroke	1307	3.8	147	12.0
Diabetes Mellitus	115	0.3	16	1.3
Chronic Respiratory Diseases	531	1.5	29	2.4
Liver and Kidney Diseases	608	1.8	73	6.0
Nutritional Diseases	563	1.6	21	1.7
Mental and neurological disorders	183	0.5	0	0.0
Injuries	1416	4.1	39	3.2
Non-specific or ill-defined causes	12504	36.3	626	51.2
TOTAL	34420	100.0	1223*	100.0
*Intrauterine fetal deaths not included				

Source: Annual Health Statistics Report

In Timor Leste, the availability of data on NCD risk factor indicators is limited and is described below. It indicates that tobacco use and the use of solid duels for cooking are the major risk factors on which information is available. Overweight among women and diabetes are also emerging as possible public health problems. No information is available on diet, physical activity, blood pressure and cholesterol levels from the Timorese population. The information primarily comes from the Demographic Health Survey (DHS) that is done every five-six years. Adolescents form a critical group in NCDs as many of the behaviors are developed at that age and are more amenable to intervention. Except for tobacco, the data on adolescents was not available but would be important to collect.

Table 2. Data on noncommunicable disease risk factor in Timor-Leste

Indicator	Value	Year	Source/Comments
Prevalence of current tobacco use among persons aged 15-49 years	69.5% Men 4.7% Women	2009	DHS; Includes all tobacco use in 15-49 age group
Prevalence of current tobacco use among adolescents	50.6% - Boys 17.3% - Girls	2006	GYTS, Aged 13-15 years. Restricted to smoking
Total alcohol per capita (≥ 15 years) consumption within a calendar year in litres of pure alcohol	0.9 Litres	2005	WHO Atlas; 97% consumption is of beer. Local liquor is probably not fully included.
Prevalence of raised blood glucose / diabetes among persons aged $\geq$40 years	4.6%	2010	From Blindness survey; uses HbA1C $\geq$ 6.5% or pre-diagnosed.
Prevalence of overweight and obesity in persons aged 15-49 years	Overweight – 5.1% (Women)	2009	DHS; Only for women. Urban 2.5 times more than rural.
Proportion of households with solid fuel use as primary source of cooking	94.9%	2009	DHS

Critical Review of the current national response

Government of Timor Leste recognizes the growing problem of NCDs and also the limitations of the current health system response to it. Only 10% of deaths occur in the hospitals and even in those deaths almost 50% remain unclassified. Vital event registration system is not fully functional and only way of counting deaths is during census of Demographic Health Surveys. However, these do not elicit causes of death. Morbidity Data is currently available only through the hospital based reporting. No disease registries exist. The main source of risk factor data was from DHS, which was not geared to measure NCDRFs. The current national health system in Timor Leste is mainly geared towards addressing maternal and child health and communicable diseases. Every year around 250-300 patients are referred to Indonesia for high end treatment for which Ministry of Health budgets a cost of US$ 4 million. Many of these are NCDs and significant resources can be saved if these diseases are managed at an earlier period through the primary health care and if the tertiary care is strengthened.

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1.3 National Strategy for Prevention and Control of Non-communicable Diseases

Purpose: The overall intent of the NCD Strategy is to reduce avoidable mortality, morbidity, risk factors, and costs associated with NCDs; thus promoting well-being and improving productivity and development prospects in the country. This strategy aims to facilitate a comprehensive multi-sectoral response from government to NCDs. So as to have an impact on health care costs, productivity, economic growth, and sustainable development.

Vision, Goals and Core Values

Vision

"All Timorese people enjoy healthy and productive lives free of avoidable morbidity, disability and premature death due to NCDs."

This is in keeping with the Health Ministry's vision of a ***"Healthy East Timorese people in healthy Timor-Leste".*** The vision recognizes that NCDs are preventable and with provision of a good quality health care individuals with NCDs can live longer and without disability. More importantly, it recognizes that the people of East Timor are at the centre of the strategy.

Goal

"To reduce the preventable morbidity, avoidable disability and premature mortality due to NCDs in Timor Leste."

Core Values

- Equity - Government shall ensure equal access to quality care according to needs of individuals with same medical conditions.
- Community empowerment – The strategy will keep Timorese people at its centre and will strive to empower them to make healthy choices for a healthy life.
- Right to best possible health care – The strategy is being developed in the context that health is a fundamental human right. The public and private health care providers are

obliged to ensure good quality treatment. This has implications for treatment protocols, quality of medicine, medical equipment and supplies and infrastructure.

- Respect for cultural diversity – The strategy and its implementation will align itself with the cultures and traditions of the people of Timor-Leste that promote health. At the same time, efforts will be made to modify the harmful customs and traditions.

These values and the proposed strategies are in harmony with the National Health Sector Strategic Plan 2011-2030.

Objectives

1. To effectively lead multi-sectoral partnerships to accelerate and scale-up national response to NCDs
2. To improve the capacity of individuals, families and communities to live a healthy life by creating healthy environments, conducive to making healthier choices that promote health and reduce the risk of development of NCDs
3. To strengthen the health system by improving access to health care services and increasing the competence of human resources in management of NCDs.
4. To establish a sustainable surveillance, monitoring and evaluation system that generates data for evidence based policy and programme development.

Strategic Areas

The above four objectives lead to four priority strategic areas for NCD prevention and Control. These are:

1. Advocacy and Leadership for a multi-sectoral response
2. Health promotion and Primary Prevention to reduce risk factors for NCD
3. Health System Strengthening for early detection and management of NCDs
4. Surveillance, Monitoring and Evaluation and Research

Advocacy and Leadership for a multi-sectoral response

Multi-sectoral action requires working together across sectors to improve health and influence its determinants. The objective is to achieve greater awareness of the health and health equity consequences of policy decisions and organizational practice in different sectors and thereby move in the direction of healthy public policy and practice across sectors. This strategy aims to create a supportive governance structure and a shared policy framework to ensure integration of strategies and actions towards a common end of prevention and control of NCDs.

The Health Ministry will be the central player and would facilitate the process of involvement of other policy sectors in the policy-making process. A capable and accountable health sector is vital to promote and support multi-sectoral action. While in the long run, the strategy aims to integrating a systematic consideration of health concerns into all other sectors' routine policy processes, an approach described as *"Health in All Policies"*, in the short term, a more *issue-centred* and narrower strategy, for tobacco, alcohol, diet and physical activity will be pursued.

Components of the Strategy

Evolving and implementing a multi-sectoral response

- Constitute an Inter-ministerial Committee under the National Health Sector Strategy Plan 2011-2030 to be chaired by the Prime minister or a designated senior member of the cabinet to provide overall stewardship to the multi-sectoral response.
- Constitute a Multi-sectoral NCD Working Group under the chairmanship of Director General of Health services with involvement of all stakeholders including international partners to define each stakeholders' roles and responsibilities. Some of the ministries to be involved include Ministry of Justice, Ministry of Planning and Finance, Ministry of Industry and Commerce, Ministry of Education, Ministry of Infrastructure, Ministry of Agriculture, Youth and Sports, Gender and Equality, National Directorate of Statistics, Legal affairs, Social welfare, Communication etc. Other ministries could be involved as deemed appropriate.
- Ministry of Health to sign a Memorandum of Understanding with partners with their defined roles and responsibilities and seek accountability.

- Co-ordinate with and utilize the existing multi-sectoral mechanism set in place to address nutritional issues.

Promoting Healthy Public Policies

- Advocate for assessing the health impact of policies in non-health sectors like finance, trade and commerce, agriculture, education, trade, environment, sports, transport and urban planning etc.

Increase Priority for NCDs within the Health Ministry

- Strengthen NCD Unit of the Ministry of Health for co-ordinating, implementing and monitoring a multi-sectoral action plan in terms of human resources and their capacities.
- Increase allocation of funds in the government regular budget for Health and within it, for NCD Prevention and control.
- Advocate for earmarking funds generated through taxes/levies on cigarettes and alcohol to fund health care of NCD patients with the focus on primary health care.

Health promotion and Primary Prevention to reduce risk factors for NCD

A comprehensive approach to health promotion embraces actions directed at strengthening the skills and capabilities of individuals to improve their health alongside actions directed towards changing social, environmental and economic conditions that have an impact on health. It also addresses the determinants that underpin the NCDs epidemic across populations by changing the environments (physical, economic, social, cultural). An effective NCDs strategy must address social determinants such as education, employment, housing, income, access to health care. Majority of NCDs occur in individuals with modest elevations of multiple risk factors rather than with significant elevation of a single risk factor. This emphasizes the need to address all risk factors simultaneously rather than focus on one at a time.

Component of the strategy (Risk factor wise)

Reduce Tobacco Use

- Introduce comprehensive tobacco related legislation in keeping with the commitments under Framework Convention on Tobacco Control (FCTC) and enforce its implementation.

- o Raise taxes on tobacco products including import duty.
- o Declare all public places tobacco free
- o Make pictorial health warnings mandatory on tobacco products
- o Implement comprehensive ban on tobacco advertising in mass media and through Bill Boards, sponsorship and promotions.
- o Prohibit sale of tobacco to and by minors.
- Set up a tobacco surveillance system to monitor its use including among adolescents.
- Establish Tobacco Cessation Services in health facilities.
- Conduct mass-media campaign to counter the influence of tobacco industry and discourage tobacco use.

Reduce Harmful Use of Alcohol

- Implement WHO's Global Strategy to reduce harmful use of alcohol.
  - o Restrict or ban alcohol advertising, promotions and sponsorships
  - o Regulate the public availability of alcohol including sale to minors through appropriate laws
  - o Increase tax on alcohol products including import duty.
- Effectively Implement drink-driving legislation.
- Strengthen health services to provide treatments to individuals and families affected by alcohol-use disorders.
- Develop and strengthen surveillance system to monitor the magnitude and trends of alcohol related harm.
- Conduct Mass Media campaign to reduce alcohol use.
- Conduct Social Mobilization to initiate/strengthen community action to restrict the use of alcohol during social and religious events/functions.

Promote Healthy Diet

- Promote and support exclusive breast feeding for the first six months of life and continued breast feeding until two years.
- Use fiscal measures to subsidize fruits and vegetables production/import and discourage consumption of unhealthy food that are high in saturated fats, sugar or salt.

- Promote user friendly Nutrition labeling of all pre-packaged foods.
- Develop and implement healthy eating guidelines for restaurants and eating places.
- Establish policies and regulations to eliminate partially hydrogenated vegetable oils (PHVO) in the food supply.
- Regulate private industry to reduce salt content in the processed/packaged foods that are produced in or imported into the country.
- Develop national nutrition guidelines.
- Carry out mass media and social marketing to raise awareness on benefits of healthy eating through out the life course.
- Regulate marketing of foods and non-alcoholic beverages to children.
- Consider provision of fruits and vegetables in the School Lunch Program for children.
- Co-ordinate activities with the national multi-sectoral nutrition committee to align and strengthen the actions of each other.

Promote Physical Activity
- Develop and adopt National Guidelines for physical activity.
- Increase the availability of public space for physical activity, including walking cycling, exercising, sports and improve the walkability of footpaths.
- Promote sports among youths in schools and colleges.
- Carry out mass media and social marketing to raise awareness on benefits of physical activity
- Establish a public transport system.

Promote Healthy Settings
- Develop and implement national guidelines for healthy schools.
- Develop and implement national guidelines for healthy workplaces.
- Establish effective co-ordination mechanism with ministry of education for implementation of health promoting school guidelines.
- Strengthen Servisu Integradu da Saúde Communitária- SISCa (Integrated Community Health Services) and LISAI (Livrinho Saude Amigavel ba Idosus) or AFHCP (Age Friendly Health Care Program) for aged 60 and over.

- Encourage health promotion in the community-based settings including spaces for parks, group physical activity, sports.

Reduce Household pollution

- Create awareness and develop appropriate strategies to reduce exposure to second hand tobacco smoke in households.
- Develop and implement programs to encourage use of improved cook-stoves and other measures to reduce exposure to smoke in households.
- Advocate with Ministry of Energy for transition to cleaner fuels.
- Conduct mass media campaign to improve cooking practices and generate demand for use of cleaner fuels.

Health System Strengthening for prevention, early detection and management of NCDs

The disease burden can be reduced considerably in the short- to medium-term if the population-wide approach is complemented by health-care interventions for individuals who either already have NCDs or those who are at high risk. The long-term nature of many NCDs demands a comprehensive health system response that brings together a trained workforce with appropriate skills, affordable technologies, reliable supplies of medicines, referral systems and empowerment of people for self-care.

Effective individual health-care interventions fall into three categories. One pertains to acute events and should be delivered in special units dealing with coronary care, stroke care or intensive care. A second category of health service interventions deals with complications and advanced stages of disease. They both require health workers with specific skills, high technology equipment, costly treatment and tertiary hospital infrastructure. By contrast, the third category of interventions can be applied at the first level of contact with the health system - in primary care. These primary health-care interventions are essential for proactive early detection of risk factors and providing the essential standards of care for the metabolic risk factors and the four major groups of NCDs, thereby reducing the demand for the first two categories of interventions. Early detection and treatment of conditions like hypertension and diabetes prevent a significant proportion of strokes and heart attacks, thus reducing the financial strain on individuals and health

care system, while at the same time reducing premature mortality. The Box below captures the proposed package of services at each level of the health system.

Components of the Strategy

- Introduce a package of basic primary health care interventions for NCDs based on WHO guidelines into the Revised Primary health care package of the country.
- Create awareness to empower people through home visits by health care workers for risk reduction, early detection and improving compliance to drug treatment.
- Universalize access to essential drugs and basic technologies*

  - Include essential medicines and technologies for NCDs in national essential medicine lists and technologies
  - Improve efficiency in procurement, supply management of generic drugs and technologies.

- Develop and implement National standard Treatment Guidelines for common NCDs and their risk factors management.
- Strengthen human resource capacity at all levels of health system.
- Provide continuum of care by strengthening referral systems including tertiary care.
- Establish tertiary care services in the National Hospital for cardiac, renal dialysis, stroke and cancer care.

(* Essential NCD medicines including generics, of at least aspirin, a statin, an angiotensin converting enzyme inhibitor, thiazide diuretic, a long acting calcium channel blocker, metformin, insulin, a bronchodilator and a steroid inhalant. and basic technologies including at least a blood pressure measurement device, a weighing scale, blood sugar and blood cholesterol measurement devices with strips and urine strips for albumin assay)

Table 3. Proposed Package of NCD related services/kit by levels of health system

Level	Package of services to be provided
Home Visits	• Risk Assessment using appropriate tool • Health Education aimed at risk reduction • Identify people with disease and refer • For people already on treatment, advise regarding compliance • Address the health needs of disabled, elderly and terminally ill including distribution of drugs already prescribed.
Outreach services – SISCA	• Initially provide a selective subcomponent of the services available at Community health centre and later expand to provide the total basket of services.
Health Posts	• Opportunistic screening for selected NCDs – Hypertension an diabetes • Provision of anthropometry, BP apparatus and blood sugar testing using strips • Provision of first line drug for hypertention and diabetes and chronic respiratory diseases • Prescription of these drugs if doctor available in the health post.
Community Health Centres	• Provision of above equipments plus ECG and possibly spirometry. • Basic lab services should have testing for blood sugar, lipid profile and basic biochimistry using strips/colorimetry. • Provision of first line drugs for hypertention, diabetes , Chronic respiratory diseases and rheumatic and ischemic heart disease including statins.
Community Health Facilities with inpatient facilities	• Tobacco and alcohol deaddiction Services • Provision of doctor trained in managing referred/uncontrolled cases including those needing admission. • Above Laboratoring services and screening for common cancers • Provision of second line drugs for all common NCDs • Provision of HPV Vaccine
Referral Hospitals (Secondary Care)	• Availability of Coronary Care units including echocardiography/ultrasonography • Provision of third line drugs for common NCDs
National Hospital (tertiary Care)	• Availability of • intensive care unit including caridac interventions • Provision of specialist doctor in cardiology, neurology, endocrinology, pulmonary medicine and oncology, nephrology and urology. • Establishing Hospital Based disease Registries • Cancer care unit including palliative care and anti-cancer medicines • Laboratory services for immunochemistry and cancer cytopathology

Surveillance, Monitoring, Evaluation and Research

Noncommunicable disease surveillance is the ongoing systematic collection and analysis of data to provide appropriate information regarding NCD disease burden, the population groups at risk, estimates of NCD mortality, morbidity, risk factors and determinants, and to track health outcomes and risk factor trends over time. This enables monitoring and evaluation of the progress made in implementing policies and programs. NCD surveillance systems need to be integrated into existing national health information systems, especially in settings where resources are limited. Three major components of NCD surveillance are: a) monitoring exposures (risk factors); b) monitoring outcomes (morbidity and disease-specific mortality); and c) assessing health system capacity and response.

Components of the Strategy

- Include NCD Surveillance in the terms of reference for the Monitoring and Evaluation Working Group of the Ministry of Health.
- Establish a National NCD Monitoring Framework including monitoring indicators and targets.
- Identify and strengthen Institutional capacity to carry out Integrated Disease Surveillance including NCDs.
- Strengthen Cause of Death Data by
  - Improving civil registration and vital statistics
  - Improving medical cause of death certification in the hospitals and use of ICD-10 coding
  - Establishing a verbal autopsy based system (within or outside DHS) for ascertainment of cause of death in an adequate sample of deaths occurring at home.
- Conduct a Nationally representative NCDs Risk Factor Survey to generate baseline data and repeat it every five years.
- Collect data on access to NCD services through existing/planned Health Facility surveys or supportive supervision checklists.
- Identify areas of integration between DHS and NCD surveillance requirements.

- Conduct national school based student health surveys to monitor NCD risk factors among adolescents every five years.

- Explore the possibility of setting up NCD registries for major NCDs at the National Hospital after their strengthening.

- Strengthen Hospital Information and Reporting System by

  - Strengthening the Medical Record Departments (MRD) to address the information needs of routine administration, medico-legal issues and for retrieval of patients records.

  - Strengthen the MRD to report on morbidity and mortality as per ICD 10.

  - Use Information technology to minimize paper records and for timely reporting

  - Improve the capacity of MRD staff at hospital accordingly.

  - Implement a feedback mechanism to improve performance and efficiency.

- Regularly disseminate the results of the monitoring process through reports and publications and any other appropriate mechanisms.

- To strengthen research related to NCDs

  - To identify the research priorities in the area of NCDs in Timor-Leste

  - To strengthen capacity to conduct research among academic institutions

1.4 National NCD Monitoring Framework with indicators and targets

Monitoring serves to raise awareness and reinforce political commitment for stronger and more coordinated national action on NCD prevention and control. A comprehensive NCD monitoring framework includes relevant process and outcome indicators. WHO has proposed a set of 25 indicators as a part of its Global NCD monitoring framework and identified voluntary targets for nine of these indicators. These have been adapted to the national context while deciding on national indicators and fixing national targets. As a part of the national monitoring framework, a total of 24 indicators have been identified (table 4), out of which targets have been set for 12 indicators (table 5). Targets have been set only for those indicators that are critical for monitoring, for whom the strategies being planned are expected to start showing results and for those indicators where data collection appears feasible in the timeframe proposed. The actual baseline values for these targets will be estimated according to the baseline data for 2010 for risk factors for which information is available. For others, the data from 2014-15 as generated will be used.

It is recognized that there is a lack of baseline data on most of the indicators proposed globally and the national efforts for prevention and control of NCDs have just started. There is also currently inadequate capacity in the country to implement this strategy, despite a strong political commitment. Therefore, the proposed targets for 2025 may be considered as ambitious. The baseline data generated by 2015 and the possible availability of a second set of data points by 2020 will enable a more realistic setting of the targets for 2025. Therefore, it is proposed to review the targets in 2020. The current government planning cycle is for 2014-18 and thus would enable an evaluation of this plan in 2020. The Demographic Health Surveys, an important source of data for monitoring are likely to be conducted 2014 and 2020. Setting up of a surveillance mechanism as indicated in table 6 is critical to generate the baseline and monitor the progress of the NCD program in the country.

Table 4. List of indicators in the National NCD monitoring framework.

Outcomes (mortality and morbidity)

1. Unconditional probability of dying between ages 30-70 from cardiovascular disease, cancer, diabetes, or chronic respiratory disease.
2. Cancer incidence, by type of cancer, per 100 000 population.

Exposures (risk factors)

3. Age-standardized prevalence of current tobacco use among persons aged 18+ years
4. Prevalence of current tobacco use among adolescents (13-17 years)
5. Total (recorded and unrecorded) alcohol per capita (15+ years old) consumption within a calendar year in litres of pure alcohol, as appropriate, within the national context.
6. Age-standardized prevalence of heavy episodic drinking among persons aged 18+ years.
7. Age-standardized prevalence of persons (aged 18+ years) consuming less than five total servings (400 grams) of fruits and vegetables.
8. Age-standardized mean population intake of salt (sodium chloride) per day in grams in persons aged 18+ years.
9. Prevalence of insufficiently physically active (defined as less than 60 minutes of moderate to vigorous intensity activity daily) among adolescents (13-17 years)
10. Age-standardized prevalence of insufficiently physically active persons aged 18+ years (defined as less than 150 minutes of moderate-intensity activity per week, or equivalent.
11. Age-standardized prevalence of raised blood glucose/diabetes among persons aged 18+ years (fasting plasma glucose value ≥7.0 mmol/L (126 mg/dl) or on medication for diabetes
12. Age-standardized prevalence of raised blood pressure among persons aged 18+ years (defined as systolic blood pressure ≥140 mmHg and/or diastolic blood pressure ≥90 mmHg); and mean systolic blood pressure.
13. Prevalence of overweight and obesity in adolescents (defined according to the WHO growth reference for school-aged children and adolescents, overweight – one standard deviation body mass index for age and sex, and obese – 2 SD BMI for age and sex).
14. Age-standardized prevalence of overweight and obesity in persons aged 18+ years (defined as body mass index ≥25 kg/m2 for overweight and body mass index ≥ 30 kg/m2 for obesity).
15. Age-standardized prevalence of raised total cholesterol among persons aged 18+ years (defined as total cholesterol ≥5.0 mmol/L or 190 mg/dl); and mean total cholesterol.
16. Proportion of households with solid fuel use as their primary source of cooking

Health System response

17. Proportion of women between the ages of 30–49 screened for cervical cancer at least once.
18. Proportion of eligible screened for oral cancers at least once.
19. Proportion of eligible persons (defined as aged 40 years and over with a 10-year cardiovascular risk ≥30%, including those with existing cardiovascular disease) receiving drug therapy and counselling (including glycaemic control) to prevent heart attacks and strokes.
20. Availability and affordability of essential noncommunicable disease medicines, including generics, and basic technologies as per the national package in both public and private facilities.
21. Proportion of primary health care workforce trained in integrated NCD prevention and control.
22. Vaccination coverage against hepatitis B virus monitored by number of third doses of Hep-B vaccine (HepB3) administered to infants.
23. Policies to reduce the impact on children of marketing of foods and non-alcoholic beverages high in saturated fats, *trans-fatty* acids, free sugars, or salt.
24. Adoption of national policies that limit saturated fatty acids and virtually eliminate partially hydrogenated vegetable oils in the food supply, as appropriate, within the national context and national programmes.

Table 5. National targets set for NCD prevention and control for 2020 and 2025

Indicator	Targets	
	Mid term (2020)	End term (2025)
1. Unconditional probability of dying between ages 30 and 70 years from four major NCDs.	7% relative reduction	20% relative reduction
2. Age-standardized prevalence of current tobacco use among persons aged 18+ years	10% relative reduction	20% relative reduction
3. Prevalence of current tobacco use among adolescents (13-17 years)	15% relative reduction	30% relative reduction
4. Age-standardized prevalence of heavy episodic drinking among adults,	5% relative reduction	10% relative reduction
5. Prevalence of insufficiently physically active adolescents (13-17 years)	5% relative reduction	15% relative reduction
6. Age-standardized prevalence of insufficiently physically active persons aged 18+ years	5% relative reduction	10% relative reduction
7. Age-standardized prevalence of overweight and obesity in adults aged 18+ years	Not set	Halt the rise (0% increase)
8. Age-standardized prevalence of raised blood glucose/diabetes among adults	Not set	Halt the rise (0% increase)
9. Age-standardized prevalence of raised blood pressure among adults aged 18+ years	10% relative reduction	25% relative reduction
10. Drug therapy to prevent heart attacks and strokes (includes glycemic control), and counselling for people aged 40 years and over with a 10-year cardiovascular risk greater than or equal to 30% (includes those with existing cardiovascular disease).	25%	50%
11. Availability of generic essential NCD medicines and basic technologies in both public and private facilities.	50%	80%
12. Proportion of primary health care workforce trained in integrated NCD care	50%	80%
13. Coverage with Vaccination against hepatitis B virus (HBV).	80%	95%

Table 6. Sources of data and frequency of data collection needed for monitoring targets set for NCDs

Indicators covered	Frequency	Source /Comments
Mortality indicators	Annually for deaths in hospital and along with DHS (once in 5 years) for the deaths in houses	Hospital reporting and special Cause of death survey
Risk factor among adults	Every five years	Adults NCD risk factors survey
Risk factor among adolescents	Every Five years	School based student survey
Health System response	Every Five years	Health Facility Survey; NCDRF Survey, Routine hospital reporting using supervisory check list

1.5 National NCD Action Plan 2014-2018

The National action plan for prevention and control of NCDs is intended to provide a roadmap for actions for implementing policies and programmes to reduce the burden of NCDs within Timor Leste. It provides a framework to support and strengthen the implementation of various international commitments of the country. This action plan also aims to inform relevant national stakeholders as well as international development partners and donors, about national priorities for prevention and control of NCDs to facilitate the provision of technical and financial support to the country. It is recognized that successful implementation of the national action plan requires high-level political commitment, sustainable resources and concerted involvement of government, communities and other stakeholders.

Strategy: Advocacy and Leadership for a multi-sectoral response

Activities	Implementation Timeframe					Focal Point	Partners
	2014	2015	2016	2017	2018		
Adoption of a nationally endorsed multi-sectoral national NCD strategy/Plan	☐					MoH	All Partners
Constitute an inter-ministerial Committee and ensure it meets regularly	☐	☐	☐	☐	☐	Council of Ministers	Different ministries
Constitute Multi-sectoral NCD Working Group and ensure it meets regularly		☐	☐	☐	☐	Director-General Health	Different ministries/ partners
Sign a MoU with partners with their defined roles and responsibilities.	☐	☐				Director-General, Health	Partners
Prepare policy brief for different non-health sectors like finance, commerce, agriculture, education, , environment, sports, transport etc.	☐	☐				Ministry of Health	WHO
Increase number of technical staff working in NCD Department	☐	☐	☐			Director General, Health	
Advocate to increase budgetary allocation for NCDs	☐	☐	☐	☐	☐	NCD unit	

Strategy: Health promotion and Primary Prevention to reduce risk factors for NCD

Activities	Implementation Timeframe					Focal Point	Partners
	2014	2015	2016	2017	2018		
Comprehensive legislation on tobacco (already drafted)	A	I	I	I	I	Tobacco Unit	Law/legal
Start Tobacco Cessation Services at different levels of health care	--	T	S	S	P	Tobacco Unit	Hospital
Develop and Implement a mass media campaign for tobacco	D	I	I	I	I	Tobacco Unit	Communication
Comprehensive legislation on prevention of harmful use of alcohol		D	A	I	I	Alcohol Unit	Law/legal
Start Alcohol de-addiction Services at different levels of health care	--	T	T	S	S	Alcohol Unit	Hospital
Develop and Implement a mass media campaign for alcohol		D	I	I	I	Alcohol Unit	Communication
Develop , adopt and Implement National Nutrition Guidelines as relevant to NCDs	D	A	I	I	I	Nutrition Dept.	
Develop and implement a mass media campaign for healthy eating			D	I	I	Nutrition Dept.	
Initiate procedure for labeling of both imported and locally produced. food products			☐	☐	☐	Secretary, State	Commerce
Draft, Adopt and Implement Regulation of salt/fat/sugar content of processed/pre-packaged foods		D	A	I	I	Nutrition Unit	Law/Legal
Regulation of marketing of food and non-alcoholic beverages to children		D	A	I	I	Nutrition Unit	Communication, Law/Legal
Develop and Implement guidelines for healthy food in restaurants and eating places to include NCD issues	D	I	I	I	I	Sanitation and Vigilance unit	
Implement National Physical activity Guidelines	I	I	I	I	I	NCD Unit	
Develop and implement mass media campaign for promotion of physical activity	D	I	I	I	I	NCD unit	Dept. of youth & sports
Develop and implement Healthy schools guidelines (under preparation)	A	I	I	I	I	School Health	Ministry of Education
Develop and implement Healthy Workplace guidelines	D	A	I	I	I	Occupational Health unit	Ministry of labour
Mass Media campaign and IEC material for clean fuel use			D	I	I		Communication

D – Draft/Develop, A – Adopt, I- Implement, T – Tertiary, S – Secondary, P – Primary level of care

Strategy: Health System Strengthening for early detection and management of NCDs

Activities	Implementation Timeframe					Focal Point	Partners
	2014	2015	2016	2017	2018		
Formulate the essential NCD kit as a part of the overall PHC package at different levels of health system	□					NCD Unit	
Review and update existing Standard Treatment Guidelines for common NCDs	□					INS	
Review and update essential medicine and technology requirements for NCDs	□					Pharmacy	
Pilot test and Scale up WHO's primary health care package for NCDs		□	□	□	□	NCD Unit	WHO
Advocate for regular funding for essential drugs and technologies and their		□	□	□	□	NCD Unit	Pharmacy
In-service training all Human Resources in management of NCDs (Top down process)	□	□	□	□	□	INS	
Revise curriculum for different health staff to include NCD management protocols			□	□	□	University	
Set up tertiary care centres for cardiac, stroke and oncology, renal dialysis in National Hospital	□	□	□			National Hospital	

Strategy: Surveillance, Monitoring and Evaluation

Activities	Implementation Timeframe					Focal Point	Partners
	2014	2015	2016	2017	2018		
Include NCDs in the terms of reference of M & E Working Group	☐					MoH	
Conduct NCD risk factor Survey	☐					University	
Train Doctors in Medical Certification of causes of death/ICD coding	☐	☐				University	
Explore cause of death ascertainment using verbal autopsy in deaths counted in DHS survey	☐	☐				MoH	DHS, Direct. of statistics
Conduct a survey among adolescents using available WHO tools		☐				University/ Research unit	
Conduct a Health Facility Survey			☐				
Strengthen Hospital Information System	☐	☐	☐	☐	☐	National Hospital	
Establish Hospital Based Cancer and Stroke Registry in National Hospital				☐	☐	National Hospital	IARC, WHO

2. Injury Prevention and Control

2.1 Introduction

Injuries kill more than five million people worldwide annually and cause harm to millions more. They account for 9% of global mortality, and are a threat to health in every country of the world. For every death, it is estimated that there are dozens of hospitalizations, hundreds of emergency department visits and thousands of doctors' consultations. A large proportion of people surviving their injuries incur temporary or permanent disabilities. Beyond their immediate health consequences, injuries and violence have a significant impact on the wellbeing of people by contributing to premature death and disability, high medical costs and lost productivity. The effects of injuries and violence extend beyond the injured person or victim of violence to family members, friends, coworkers, employers, and communities.

Injuries–resulting from traffic collisions, drowning, poisoning, falls or burns are termed unintended injuries whereas violence from assault, self-inflicted violence or acts of war are termed intentional injuries. The key determinants of unintentional injury and violence include individual behaviors, such as alcohol use or risk-taking, the physical environment, both at home and community, access to health services and trauma care, social and community environment.

2.2 Situational Analysis

The estimated road traffic death rate in Timor-Leste is 19.5 per, 100,000 population, second only to Thailand in the South-East Asia Region. The registered vehicles are however, only 8.6 per 1000 population, the lowest in the region. There exists a comprehensive law pertaining to road traffic injury but is not effectively implemented. Information on other injuries is not available. However, they do constitute a major component of the emergencies seen in the hospitals.

2.3 Aims and Objectives

The aim of this strategy is to reduce premature mortality, morbidity and disability due to the injuries in Timor-Leste. The specific Objectives include:

1. Improve access to trauma care including pre-hospital care to individuals with injuries.
2. Reduce the risk of all injuries by addressing key risk factors for injuries.
3. Establish an injury surveillance system to provide evidence to support decision-making.

2.4 Strategies

Strategies for prevention of injuries depend on the nature and cause. Important among them are road traffic injuries, suicides, violence and occupational injuries. However, some of the strategies cut across them.

1. Improve access to trauma care

    Many subjects with injury need immediate hospital care as well as a good quality pre-hospital care while on their way to a hospital. These may be a problem in rural and remote areas and need to be tackled to prevent deaths due to injuries. There is a need to strengthen pre-hospital care as well as facility based trauma care. Subcomponents of this strategy include

    - Training of health and police staff in pre-hospital care
    - Provision of free timely ambulance services to those affected by injury
    - Strengthen trauma care in all levels of health facilities according to the resources available.

        Primary care – Pre-hospital care including splinting

        Secondary care – Blood storage facilities, simple surgical procedures

        Tertiary Care: Blood banking facilities and full-fledged trauma care

2. Establish an Injury Surveillance: System

A good injury surveillance system provides answers to the two questions - What is the problem? (Who and how many are being injured and in what ways?) and; what is the cause? (What are the risks that contribute to injury?) . At its basic level, it should comprise of two components:

- A system that keep records of individual cases which describe the person injured, the nature of their injury and when, where and how the injury happened. These records will be compiled into a database, from which one can readily generate a set of statistics that give an overall picture of the injury problem.
- A community-based survey that collects information at population level of people who have been exposed to injuries and their risk factors.

3. Prevention of mortality and morbidity due to specific type of injuries

Road-traffic injuries

- Effectively implement the existing comprehensive legislation covering five key areas – speeding, drink-driving, helmet use, seat-belt use and child restraint.
- Establish and implement policies to promote walking, cycling, public transport and to separate vulnerable road users as a way of protecting them.
- Establish safety standards for vehicles
- Strengthen post-crash emergency medical system by early availability of ambulance and staff trained in pre-hospital care.
- Carry out mass media and social marketing to raise awareness on safe driving

Other unintentional injuries

- Modifications of the environment by changing existing social norms on the acceptability of violence and changing policies to address the social and economic conditions that give rise to violence.
- Improving problem-solving skills of individuals and communities (for example, parenting, conflict resolution, coping)
- Developing life skills in children and adolescents;
- Reducing the availability and harmful use of alcohol;
- Reducing access to guns, knives and pesticides;

Suicides

While its causes are complex, the goal of suicide prevention is to reduce factors that increase risk and increase factors that promote resilience or coping. Key components of this strategy include:

- Establish regular telephone based 24 hour helpline for suicide prevention counseling offering confidential referral services in public sector or through volunteer citizen groups
- Enact a law that decriminalizes suicide attempt
- Conduct media campaigns about suicide, its risk factors, warning signs and the availability of help.
- Strengthening health and welfare services to recognize and respond to people in need. This includes better training of health professionals in identification and management of suicides.
- Reducing access to convenient means of suicide (e.g. toxic substances, handguns).

<u>Workplace injuries</u>

Key strategies to prevent workplace injuries include engineering controls, protective equipment, education/training, and regulatory and management practices (including those that encourage safe behavior and practices).

- Establish a legal framework for protection of interests of the workers
- Identify key industries where occupational injuries are common and undertake redesigning of the job or engineering solutions to make it safer
- Promote the use of protective clothing or other protective devices.
- Promote educational interventions to change the attitude of the workers to accept the safety provision and guidelines

2.5 Monitoring Indicators

Impact:

1. Proportion of total deaths attributed to injuries, especially among the productive age group
2. Road traffic death rate per 100,000 population

Outcome:

1. Prevalence of identified risk factors for injury (alcohol use, drink driving, domestic violence, access to weapons)
2. Access to trauma care – % of subjects with trauma who received pre-hospital care before admission to a health facility.

3. Health Care for people with disability

3.1 Introduction

Disabilities is an umbrella term, covering impairments, activity limitations, and participation restrictions. An impairment is a problem in body function or structure; an activity limitation is a difficulty encountered by an individual in executing a task or action; while a participation restriction is a problem experienced by an individual in involvement in life situations. Thus, disability is a complex phenomenon, reflecting an interaction between features of a person's body and features of the society in which he or she lives.

There are over 1 billion people with disabilities (PWD) in the world. This corresponds to about 15% of the world's population. People with disabilities have generally poorer health, lower education achievements, fewer economic opportunities and higher rates of poverty than people without disabilities. This is largely due to the lack of services available to them and the many obstacles they face in their everyday lives. Disability is more common among women, older people and children and adults who are poor. PWDs face widespread barriers in accessing services in health care (including rehabilitation), education, transport and employment.

3.2 Situational Analysis

Based on a survey in 2006, it was estimated that 1.5% of the population of Timor-Leste has disability in some form or the other. The most common cause of disability was visual impairment followed by mobility impairment, speech and hearing impairment and least of all intellectual impairment. Timor-Leste already has a **NATIONAL POLICY FOR INCLUSION AND PROMOTION OF the RIGHTS OF PERSONS WITH DISABILITIES**. The Constitution of the Democratic Republic of Timor-Leste consecrates the disabled citizen enjoys the same rights and be subject to the duties of other citizens, as well as that no citizen can be discriminated against on the basis of their physical or mental condition, as provided for in paragraph 1 of Article 21 and paragraph 2 of Article 16 (2). The Ministry of Social Solidarity provides food and financial support through the allowance of the elderly and invalids approved by Decree entered by-law. 19/2008 Of 19 June and the pilot project Scholarship of the Mother to people with disabilities and their families, the well the to non-profit institutions that develop work in the area of disability.

3.3 Aims and Objectives

The aim of the national strategy for prevention and control of disability is to enable persons with disability to live to the extent possible an independent and healthy life with dignity.

The specific objectives of this strategy, which is restricted to health sector are:

1. Strengthening health system including capacity building: Healthcare providers have the knowledge and tools to screen, diagnose, and treat the person with a disability with dignity;

2. Health Promotion: Persons with disability can promote their own good health by developing and maintaining a healthy lifestyle; and

3. Increased Access: Accessible healthcare and support services promote independence for persons with disability.

4. Surveillance and Research to support evidence based policy making.

3.4 Strategies

Health System Strengthening
Capacity Building

- Promote the availability in the health services of health professionals with specialized training, including physical therapists, orthopedists, speech therapists and nurses and clinical psychologists.
- Ensure that the technical assistance provided to persons with disabilities is in accordance with the standards set internationally.
- Increase the capacity and diversify the response of physical and mental rehabilitation centers to respond to the needs of people with disabilities.

Prevention, early Detection and treatment

- Create specific measures like screening programs with a view to ensure the early identification of disability, diagnosis, treatment and medical rehabilitation, especially among children and elderly.
- Ensure the issuance of medical declarations certifying the temporary or permanent nature of incapacitation of person with disabilities.
- Provide services for reduction of risk factors contributing to disabilities during pregnancy and childhood and injury prevention.

Health Promotion
- Disclose information about the ways of prevention, health care and special needs of people with disabilities, in establishments of health and education, Community centers and other public spaces relevant, through the use of various communication channels.
- Increase awareness of all stakeholders including community on the importance of the issue of disability and to coordinate efforts of all sectors of society to participate in disability prevention activities;
- Conduct media campaign to promote and protect the rights and dignity of persons with disabilities and ensure their full inclusion in society,
- Promote and strengthen community-based rehabilitation programmes linked to primary health care and integrated in the health system;

Increased Access
- Ensure that people with disabilities can take advantage of services provided by health professionals, technical aids, medication and specialized treatment, in an equitable manner, regardless of the place of residence (rural or urban).
- Facilitate the movement of people with motor disability to reach health services, in special vehicles if so needed.
- Ensure provision of adequate and effective medical care to people with special needs and to facilitate their access to such care including to prostheses, wheelchairs, driving aids and other devices;

Surveillance and Research
- Establish a system for assessment of epidemiological and economic burden of disability and identification of its key risk factors and monitor its trend.

- Conduct scientific and technical studies in the areas of prevention, treatment and rehabilitation of people with disabilities.

3.5 Monitoring Indicators

Impact: Reduction in burden in terms of Disability free life years gained

Outcome :

1. Proportion of individuals with disability who have been provided with assisted devices.

2. Age-sex specific prevalence of difference disabilities and their degree in specific age group.

4. Care for the Elderly

4.1 Introduction

Populations of most countries in the world are ageing. Due to continuous urbanization and the societal upheavals, there is an increasing disintegration of the system of extended families resulting in reduction in support provided by them in terms of care and shelter. These changes lead to changing demands on the health systems. Health care systems are expected to include care for older adults along with care for other groups. The growing need for the treatment and care of an ageing population requires adequate projection and allocation of funds.

Policies that promote lifelong health, including health promotion and disease prevention, assistive technology, rehabilitative care, mental health services, and promotion of healthy lifestyles and a supportive environment, can reduce disability levels associated with old age and lead to budgetary savings. Creation of a supportive environment for the elderly requires action in a variety of sectors in addition to health and social services, including education, employment and labour, finance, social security, housing, transport, justice, and rural and urban development. These sectors can formulate "age-friendly" policies and enabling programmes for older persons, including those with disabilities. This strategy focuses on the aspect of provision of health care to the elderly and does not cover other social systems and policies need to ensure a Healthy and active ageing.

4.2 Situational Analysis

Timor-Leste has about 8% of its population in the elderly age group. The data from the hospitals shown in table 7 shows that burden imposed by elderly on the health facilities, It can ben seen that communicable diseases continue to be the most important cause of morbidity and mortality among the elderly. Extended family groupings are the strongest traditional social networks for Timorese people, with the core family unit consisting of a married couple and their unmarried children. Traditionally, families have remained the foundation for support and care of older people. Since achieving independence, there has been considerable movement of the population within the country with the elderly population moving between the districts to remain with their families.

Table 7. Data on burden of patients above 45 years of age in hospitals of Timor-Leste, 2010

Disease	Hospital admissions		Hospital deaths	
	Numbers	%	Numbers	%
Bronchopneumonia/Pneumonia	207	13.9	36	11.8
All forms of TB	491	32.9	75	24.5
Malaria & Dengue	112	7.5	4	1.3
Cardiovascular Disease	222	14.9	21	6.9
Liver Disease	72	4.8	19	6.2
Cerebrovascular Disease	106	7.1	20	6.5
Renal infections/disorders	27	1.8	11	3.6
Diarrhea Diseases	60	4.0	1	0.3
Bronchitis/COPD	22	1.5	17	5.6
Injuries	126	8.4	9	2.9
Others	49	3.3	93	30.4
TOTAL	1494	100.0	306	100

Source: Annual Health Statistics Report 2010.

The nodal agency for healthy ageing programme is the Chronic Disease and Disability Unit in the Non-Communicable Disease Department of the Community Health Directorate. Under the healthy ageing programme the Chronic Disease and Disability Unit has developed LISAI (Livrinho Saude Amigavel ba Idosus) or AFHCP (Age Friendly Health Care Program) for aged 60 and over, which is incorporated into Servisu Integradu da Saúde Communitária- SISCa Integrated Community Health Services) program of health service for all ages. SISCa is formed by communities as a place for all community members to gather in order to have access to basic integrated health activities with a principle of "From, With and To the Community". Communities themselves, through suco and aldeia chiefs, with their own initiative mobilize their community members: pregnant women, children under five including youth and the elderly to get access to health services at the village level. SISCa will provides assistance in the areas of health promotion, prevention of diseases, treatment for sickness and rehabilitation.

4.3 Aims & Objectives
The aim of the strategy is to not only prolong life but also to improve the quality of life by making it disease and disability free. The two basic principles of the strategy will be community

participation and primary health care approach.

4.4 Strategies

The strategies are

1. Strengthening Primary Health care for addressing the needs of health care of the elderly.
2. Promoting the involvement of communities and families in care of elderly.

Developing an age-friendly primary health care services:

- Sensitize and educate primary health care workers about the specific needs of older clients so that they have right attitude while taking care of them.

- Introduce a module on basic Geriatric Care for the Nursing Diploma

- Develop simple management guidelines/algorithms for common problems of elderly at primary health care

- Train primary health workers in operation of specific geriatric care Instruments/tools

- All new and existing health facilities are built in accordance with national standards for accessibility

- Implement a Home Visit Program for those elderly and people with disabilities that are unable to visit health facilities.

- Provide continuum of care by ensuring a fully functional referral system including facility for transportation.

- Train doctors in primary and secondary level hospitals in management of geriatric patients

- Make provision of geriatric services at national hospital.

Strengthening Community participation in care of elderly

- Together with the Ministry of Social Solidarity, develop and implement Community Based Services for the elderly and people with disabilities
- Sensitize and educate all community-based workers and leaders about the specific needs of older clients
- Create opportunities and mechanisms for old aged patients to participate and contribute to

community activities

- Involve community members in design, implementation and monitoring of services for the elderly.

4.5 Monitoring indicators

Impact: Improvement in quality of life of elderly- Disability Free life years gained in the 60+ age group.

Outcome:

1. Percentage of people age 60+ with adequate assistance in Activities of Daily living (ADL)

2. Proportion of primary health facilities that are aged-friendly as per an Audit.

3. Rates of screening for various conditions among people 60+

4. Percentage of people age 60+ have been in contact with health system in a defined period.

Annexure

Note On Indicators For Prevention And Control Of NCDs

Cancer incidence

Indicator: Cancer incidence, by type of cancer per 100,000 populations.

Public health relevance: Cancer is the second leading cause of NCD deaths globally, responsible for 7.6 million deaths in 2008

Indicator selection: Cancer incidence tracks the number of new cancers of a specific site/type occurring in the population per year, usually expressed as the number of new cancers per 100,000 populations. Data on cancer incidence will come from population based cancer registry. No targets have been set for this globally as well as nationally.

Premature mortality from NCDs

Indicator: Unconditional probability of dying between ages 30-70 from cardiovascular disease, cancer, diabetes, or chronic respiratory disease.

Public health relevance: Of the 57 million global deaths in 2008, 36 million (63%) of these were due to NCDs. Prevention of premature mortality is one of the main objectives of the NCD prevention and control.

Indicator selection: This indicator is calculated from age-specific death rates for the combined four cause categories (typically in terms of 5-year age groups 30-34,…, 65-69). A life table method allows calculation of the risk of death between exact ages 30 and 70 from any of these causes, in the absence of other causes of death.

The lower age limit for the indicator of 30 years represents the point in the life cycle where the mortality risk for the four selected chronic diseases starts to rise in most populations from very low levels at younger ages. The upper limit of 70 years was chosen for two reasons:

(a) to identify an age range in which these chronic diseases deaths can be considered premature deaths;

(b) estimation of cause-specific death rates becomes increasingly uncertain at older ages because of increasing proportions of deaths coded to ill-defined causes, increasing levels of co-morbidity, and increasing rates of age mis-statement in mortality and population data sources.

Data for this indicator will come from a national level cause of death ascertainment system in all deaths or a representative sample of all deaths in the country. While the global target is to reduce premature mortality by 25% by 2025, the target for TL has been kept lower at 20% relative reduction.

Alcohol use

Indicators:

1. Age-standardized prevalence of heavy and episodic alcohol drinking among persons aged 18+ years.

2. Total (recorded and unrecorded) alcohol per capita (15+ years old) consumption within a calendar year in litres of pure alcohol.

Public health relevance: It is estimated that 2.3 million deaths annually, or 3.8 per cent of all global deaths, are attributed to alcohol consumption, from which more than half are due to NCDs including cancers and cardiovascular diseases. Reducing alcohol-attributable disease burden is a global public health priority as affirmed by the WHO Global Strategy to Reduce the Harmful Use of Alcohol. The strategy defines the harmful use of alcohol as drinking that causes detrimental health and social consequences for the drinker (harmful drinking), the people around the drinker and society at large, as well as patterns of drinking that are associated with increased risk of adverse health outcomes (hazardous drinking). Levels and patterns of alcohol consumption are interlinked: increase in overall alcohol consumption in a given population is associated with increase in prevalence of alcohol use disorders and detrimental patterns of drinking, and, on the other hand, reduction in prevalence of heavy drinking in a given population result in a reduction of overall level of alcohol consumption.

Indicator selection: Two parameters of alcohol consumption have particular relevance for NCD prevention and control: overall level of alcohol consumption and drinking pattern. For the overall level of alcohol consumption in populations the adult per capita consumption is well-recognized and established indicator for which the data are being collected, analysed and reported by WHO in time-series. Data on total (recorded and unrecorded) per capita (15+) alcohol consumption in litres of pure alcohol for a calendar year is available based on governmental national sales and export/import data, data available from alcohol industry sources and Food and Agricultural Organization (FAO), as well as the estimates of unrecorded alcohol consumption.

The data on prevalence of heavy and episodic drinking will come from the NCD risk factor surveys. This indicator has particular relevance to developing countries where drinking alcohol is not a regular habit but occurs on weekends and social events and the drinking during these occasions can be quite heavy. Both the global and national targets are for 10% relative reduction in heavy and episodic drinking.

Low fruit and vegetable intake

*Indicator:*Age-standardized prevalence of adult (aged 18+ years) population consuming less than five total servings (400 grams) of fruit and vegetables per day.

Public health relevance: Adequate consumption of fruit and vegetables reduces the risk for cardiovascular diseases, stomach cancer and colorectal cancer. There is convincing evidence that the consumption of high levels of high-energy foods, such as processed foods that are high in fats and sugars, promotes obesity compared to low-energy foods such as fruits and vegetables.

Indicator selection: The consumption of at least 400g of fruit and vegetables per day is recommended as a population intake goal, to prevent diet-related chronic diseases. Data on low fruit and vegetable consumption are collected in health risk behaviour surveys and nutrition surveys. No targets have been set globally or nationally.

Obesity and overweight

Indicators;

1. Age-standardized prevalence of overweight and obesity in adults aged 18+ years (defined as body mass index greater than 25 kg/m² for overweight or 30 kg/m² for obesity).

2. Prevalence of overweight and obesity in adolescents (defined as overweight-one standard deviation BMI for age and sex and obese-two standard deviations BMI for age and sex overweight according to the WHO Growth Reference).

Public health relevance: The relationship between poor health outcomes/all-cause mortality and obesity is well-established.

Indicator selection: Body mass index (BMI) is a simple index of weight-for-height that is commonly used to classify overweight and obesity in adults. It is defined as a person's weight in kilograms divided by the square of height in meters (kg/m^2). BMI provides the most useful population-level measure of overweight and obesity as it is the same for both sexes and for all ages of adults.These indicators use the WHO definition for overweight and obesity, where a BMI greater than or equal to 25 refers to "overweight" and a BMI greater than or equal to 30 refers to "obesity".

Data on prevalence of overweight and obesity in adults are available from DHS surveys for women and from NCDRF surveys or nutrition surveys. Data on prevalence of overweight and obesity in adolescents can be available through the Global School-based Student Health Survey. Both global and national targets aim to keep the prevalence of overweight and obesity at current levels and halt the increase.

Physical inactivity

Indicators:

1. Age-standardized prevalence of insufficient physical activity in adults aged 18+ years (defined as less than 150 minutes of moderate-intensity activity per week, or equivalent).
2. Prevalence of insufficient physical activity adolescents (defined as less than 60 minutes per day of physical activity).

Public health relevance: Insufficient physical activity is the 4th leading risk factor for mortality.

Indicator selection: The cut-point of less than 150 minutes of moderate activity per week (or equivalent) for adults was chosen since a vast and strong body of scientific evidence shows that people meeting this threshold have higher levels of health-related fitness, a lower risk profile for developing a number of disabling medical conditions, and lower rates of various chronic NCDs than people who are inactive.

This indicator is calculated from age-specific prevalence values of insufficient physical activity. Age standardization is done in order to control differences in population age structure over time and across countries. The lower age limit of 18 years was selected taking into consideration the nature and availability of the scientific evidence relevant to health outcomes. For adolescents, the minimum requirement for being physically active is defined as getting at least 60 minutes of physical activity per day.

Data on physical activity will come through the NCD risk factor surveys among adults and through GSHS among adolescents. Global targets are for 10% reduction, whereas nationally a more ambitious target of 15% has been kept for adolescent age group while retaining 10% reduction in the adult age group.

Raised blood glucose/diabetes

Indicator: Age-standardizedprevalence of raised blood glucose/diabetes among adults aged 18+ years (defined as fasting plasma glucose≥126, mg/dl) or on medication for raised blood glucose).

Public health relevance: Diabetes, impaired glucose tolerance and impaired fasting glycaemia are risk categories for future development of diabetes and cardiovascular disease.

Indicator selection: Fasting plasma glucose values have been selected as the indicator due to ability to capture this in nationally representative surveys using relatively inexpensive rapid diagnostic tests.

Data on fasting blood glucose will come from the NCD RF surveys. There are two main blood chemistry screening methods- dry and wet chemistry. Dry chemistry uses capillary blood taken from a finger and used in a rapid diagnostic test. Wet chemistry uses a venous blood sample with a laboratory based test. Most population based surveys used dry chemistry rapid diagnostic tests to gather fasting blood glucose

values. Both global and national targets aim to keep the prevalence of raised blood sugar at current levels and halt the increase.

Raised blood pressure

Indicator: Age-standardizedprevalence of raised blood pressure (defined as systolic blood pressure ≥140 and/or diastolic blood pressure ≥90) among adults aged 18+ years.

Public health relevance: Raised blood pressure is a major risk factor for coronary heart disease and ischemic as well as hemorrhagic stroke and is the single most important risk factor for mortality among adults.

Indicator selection : Stage 1/Grade 1 hypertension is defined in a clinical setting when the mean blood pressure is equal to or above 140/90 and less than 160/100 on two or more measurements on each of two or more visits on separate days. Treating systolic blood pressure and diastolic blood pressure to targets that are less than 140/90 is associated with a decrease in cardiovascular complications.

Data on Blood pressure will come from NCD risk factor surveys. Both global and national targets are for 25% reduction in its prevalence.

Salt/sodium intake

Indicator: Age-standardized mean population intake of salt (sodium chloride) per day in grams in adults aged 18+ years.

Public health relevance: The amount of dietary salt (sodium chloride) consumed is an important determinant of blood pressure levels and of hypertension and overall cardiovascular risk.

Indicator selection: A salt intake of less than 5 grams (approximately 2g sodium) per person per day is recommended by WHO for the prevention of cardiovascular diseases, the leading cause of death globally.

The gold-standard for estimating salt intake is through 24-hour urine collection, however other methods such as spot urines and food frequency surveys may be more feasible to administer at the population level. While the global targets are for a 30% reduction is salt intake, this target has not been kept for Timor-Leste as currently there are no means of collecting information on this indicator.

Tobacco use

Indicators:

1. Age-standardized prevalence of current tobacco use (smoking and smokeless) among persons aged 18+ years.
2. Prevalence of current tobacco use (smoking and smokeless) among adolescents.

Public health relevance: Risks to health from tobacco use result from direct consumption of both smokeless and smoking tobacco, and from exposure to second-hand smoke. There is no proven safe level of tobacco use. All current (daily and occasional) users of tobacco are at risk of a variety of poor health outcomes across the life-course and for NCDs in adulthood.

Indicator selection: The indicator includes both smokeless and smoking tobacco, as these are relevant to the national context, even though globally only smoked tobacco is considered.

Baseline data availability, measurement issues and requirements: Tobacco data will come from NCDRF survey among adults and through GYTS or GSHS among adolescents. The data in 15-49 year age group also comes from DHS surveys. The global targets as well as national targets for adolescents have been kept at 30% reduction whereas for the adults have been kept at a more modest 20% due its addictive properties and insufficient tobacco cessation services availability in the country.

Raised total cholesterol

Indicator: Age-standardized prevalence of raised total cholesterol among adults aged 18+ years (defined as total cholesterol ≥5.0 mmol/L or 190mg/dl).

Public health relevance: Raised cholesterol levels increase the risks of heart disease and stroke. Globally, a third of ischaemic heart disease is attributable to high cholesterol.

Indicator selection: Raised total cholesterol defined as ≥5.0 mmol/L or 190mg/dl is used by WHO in guidelines for assessment and management of cardiovascular risk.

Cholesterol values must be measured, not self-reported. There are two main blood chemistry screening methods- dry and wet chemistry. Dry chemistry uses capillary blood taken from a finger and used in a rapid diagnostic test. Wet chemistry uses a venous blood sample with a laboratory based test. Most population based surveys used dry chemistry rapid diagnostic tests to gather cholesterol values. The data on this will come from the National NCDRF surveys. There are no global or national targets for this indicator.

NATIONAL SYSTEMS RESPONSE INDICATORS:

Breast cancer screening

Indicator: Proportion of eligible (> 40 years) who have had their mouth examined by a health worker for oral cancer. at least once.

Public health relevance: Cancer is a major public health concern. Oral cancers are among the most common form of cancer in the country for which early detection program can be run

Indicator selection: Early diagnosis may lead to higher rates of successful health facility treatment and extended life. Under the oral health program, screening for oral cancer is an identified activity.

Screening coverage data will be available through NCDRF surveys. There are no national targets for this indicator.

Cervical cancer screening

Indicator: Proportion of women between ages 30-49 screened for cervical cancer at least once.

Public health relevance: Cervical cancer is the most common female cancer Over 95 per cent of the cervical cancer burden is potentially avoidable by good-quality screening programmes. The International Agency for Research on Cancer (IARC) concludes that there is sufficient evidence that cervical cancer screening can reduce cervical cancer mortality by 80 per cent or more among screened women. Among the various screening tests which are feasible in low resource settings visual inspection with acetic acid (VIA) has been demonstrated to be effective in decreasing cervical cancer mortality.

Indicator selection: Cervical cancer screening aims to detect precancerous changes, which, if not treated, may lead to cancer. Women aged 30 and above comprise the target audience because cervical cancer is rare in women under 30. Screening younger women will detect many lesions that are not likely to develop into cancer, will lead to considerable overtreatment, and is not cost-effective.

Screening coverage data will be available through NCD RF surveys. There are no national targets for this indicator.

Drug therapy to prevent heart attacks and strokes

Indicator: Proportion of eligible persons (defined as aged 40 years and older with a 10-year cardiovascular risk greater than or equal to 30 per cent including those with existing cardiovascular disease) receiving drug therapy and counselling (including gylcemic control) to prevent heart attacks and strokes.

Public health relevance: Population-based interventions alone will not be sufficient to prevent heart attacks and strokes for people with a 10 year cardiovascular risk of 30 per cent or higher. People at such risk level usually have modest elevations of multiple risk factors, such as smoking, raised blood pressure, raised cholesterol and/or diabetes. To prevent heart attacks and strokes in this population, cardiovascular risk needs to be lowered through counselling and appropriate drug therapy. Historic experience in high-income countries with declining cardiovascular mortality rates indicate that about 50 per cent of the decrease can be attributed to reduction of cardiovascular risk through treatment, including secondary prevention. The absolute risk approach, which is monitored by this indicator, provides the most cost effective way of achieving this objective. If implemented through a primary health care approach, the total

cardiovascular disease risks approach it is estimated to lower the cardiovascular disease burden at least by one third.

Indicator selection: WHO recommends drug therapy for prevention and control of heart attacks and strokes because it is feasible, high impact and affordable, even in low- and middle-income countries. This approach is considered more cost-effective and less expensive than conventional single risk factor interventions that address hypertension or hyper-cholesterolemia and is one of the 'best buy' interventions. Data on coverage of drug therapy to individuals identified as at-risk will be available from NCD RF surveys. Both the national and global targets are for 50% coverage by 2025.

Essential NCD Medicines and basic technologies to treat major NCDs

Indicator: Aavailability and affordability of quality, safe and efficacious essential NCD medicines including generics, and basic technologies (defined as Medicines - at least aspirin, a statin, an angiotensin converting enzyme inhibitor, thiazide diuretic, a long acting calcium channel blocker, metformin, insulin, a bronchodilator and a steroid inhalant. Technologies - at least a blood pressure measurement device, a weighing scale, blood sugar and blood cholesterol measurement devices with strips and urine strips for albumin assay) in both public and private facilities.

Public Health relevance: Without effective medicines and essential diagnosing and monitoring equipment being available at health facilities to treat NCDs, patients will suffer short and long term adverse effects from their disease.

Indicator selection: WHO recommends drug treatment for high risk people including those with diabetes in order to prevent and control heart attacks, strokes and diabetes complications. This set of technologies and medicines will enable these 'best buy' interventions to be implemented in primary care.

Information of availability and affordability of essential NCD medicines and basic technologies will be obtained through assessment and inventory of health facilities to determine if the listed medicines and technologies are available. Both the global and national targets are for 80% coverage.

Hepatitis B Vaccination

Indicator: Vaccination coverage against Hepatitis B virus (HBV) monitored by number of third doses of Hep-B vaccine (HepB3) administered to infants

Public health relevance: HBV is a major cause of liver cancer accounting for 54 per cent of liver cancer cases worldwide (59% of liver cancers in developing countries). People with chronic HBV infection have a 15 - 25 per cent risk of dying prematurely from HBV-related cirrhosis and liver cancer. A safe effective vaccine to prevent chronic infection with HBV is available and is recommended by WHO to be included in

national infant immunization programmes. The key strategy for achieving the goal is universal infant immunization with 3 doses of hepatitis B vaccine, with the first dose delivered within 24 hours of birth.

Indicator selection: Preventing liver cancer via hepatitis B vaccination is classified as a 'best buy' by WHO.

Data on HBV will be obtained through DHS and other national Immunization coverage surveys. A target of 95% has been kept as it is estimated that the current coverage rates are around 70% and an universal coverage is possible.

Policies to eliminate industrially produced trans-fatty acids (TFA)

Indicator: National policies that virtually eliminate partially hydrogenated vegetable oils (PHVO) in the food supply and replace with polyunsaturated fatty acids (PUFA).

Public health relevance: Trans-fatty acids (TFA) negatively affect blood lipids and fatty acid metabolism, endothelial function and inflammation, thus increasing the risk of type 2 diabetes and cardiovascular diseases. TFA increase the risk for coronary heart disease through their negative affect on serum lipids, raising low-density lipoprotein (LDL) and decreasing high-density lipoprotein (HDL) in the blood, even more than saturated fat. In particular, the consumption of TFA from partially hydrogenated oils adversely affects multiple cardiovascular risk factors and contributes significantly to an increased risk of coronary heart disease events. WHO recommends that the consumption of TFA should be eliminated and TFA should be less than 1 per cent of total energy consumption.

Indicator selection: Replacement of industrially produced TFA with polyunsaturated fatty acids (PUFA) is a 'best buy' for the prevention of NCDs. There is no national target set for this.

Marketing of foods high in saturated fats, trans-fatty acids, free sugars, or salt to children

Indicator: Policies to reduce the impact on children of marketing of foods high in saturated fats, trans-fatty acids, free sugars, or salt.

Public health relevance: Evidence from systematic reviews on the extent, nature and effects of food marketing to children conclude that advertising is extensive and other forms of food marketing to children are widespread across the world. Most of this marketing is for foods with a high content of fat, sugar or salt. Evidence also shows that television advertising influences children's food preferences, purchase requests and consumption patterns. Television advertising is gradually being complemented by a mix of marketing communications that focus on branding and building relationships with consumers. Food marketing to children is now a global phenomenon and tends to be pluralistic and integrated, using multiple messages in multiple channels.

Indicator selection: In May 2010, at the Sixty-third World Health Assembly, the WHO Member States endorsed a Set of Recommendations on the Marketing of Foods and Non-alcoholic Beverages to Children (Resolution WHA63.14). The main purpose of the Recommendations is to guide efforts by Member States in designing new and/or strengthening existing policies on food marketing communications to children in order to reduce the impact on children of marketing of foods high in saturated fats, trans-fatty acids, free sugars, or salt. A number of countries have already started to implement Resolution WHA 63.14 - these include Ireland, Malaysia, Spain, Sweden, and the United Kingdom. There is no national target set.

Trained Workforce

Indicator: Percentage of primary health care workers trained in integrated NCD prevention and control

Public Health Significance: Primary health approach has been identified as the main strategy for management of NCDs. In order to deliver care, it is essential that the workforce in primary health care is trained in integrated NCD prevention and control. This workforce includes everybody in the formal health system of the country.

Indicator selection: This is an indicator identified in the Regional NCD Action Plan but no targets have been set. Recongizing the need for this as a very important component of the national strategy, a national target of 80% has been set. The data for this will come from the Ministries record of staff and the trainings.

Household air-pollution

Indicator: Proportion of households with Solid fuel used as primary source of cooking

Public Heath significance: "Household Air Pollution (HAP)" also known as "Indoor Air Pollution (IAP)" is known to have multiple adverse outcomes on health and environment. It is the third leading risk factor for DALYs in South-East Asia Region and a major contributor to chronic respiratory diseases. It includes both Use of Solid and Biomass fuels for cooking and/or heating (Coal/Wood/Crop residues/Dung/charcoal) as well as Second Hand Tobacco smoke or Passive smoking. These cause Pneumonia in Children, CRD/Heart attacks/Lung Cancer in adults, increase risk of Tuberculosis, Stillbirth, low birth weight, impaired cognitive development as well as have implications for environmental degradation and climate change from emissions during combustion.

Indicator Selection: It is not much of a concern in the western countries where clean energy is available; this is the reason why it is not a global target but a regional target of 50% reduction in proportion of households with SFU as primary source of cooking has been kept. However, no targets have been kept in Timor-Leste as intervention in this area is outside health sector and has major economic implications.

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