

Preparation of this document was coordinated by the Life Style Related Disease Programme (LSRDP)
Department of Public Health,

Ministry of Health, 2009

Any enquiries regarding this publication should be directed to the LSRDP, DoPH, Ministry of Health at
321328/321842 Extn: 245

Cover design and layout: Sangay Dorji, ICB & Wangchuk Dukpa, LSRDP.

Printed by Norbu Rabten Press, Thimphu.

1st. Printed in 2009

Acknowledgements

STAKEHOLDER PARTICIPATION

Army Welfare Project
Bhutan Chamber of Commerce and Industry
BAFRA, Ministry of Agriculture, Thimphu
Bhutan Information Communication and Media Authority
Bhutan Narcotic Control Agency
Dratsang Lhengtshog, Thimphu
Department of Youth and Sports, Ministry of Education
Department of Public Health, MoH
Ministry of Works and Human Settlement
Ministry of Information and Communication
Ministry of Home and Cultural Affairs
Ministry of Economic Affairs
Royal Bhutan Police
Royal Institute of Health Sciences, Thimphu

FINANCIAL AND TECHNICAL SUPPORT

WHO country office, Bhutan
WHO, SEARO, New Delhi, India

TECHNICAL ADVICE AND SERIAL DRAFTING

Dr. B.R. Giri, Senior Medical Specialist, Jigme Dorji Wangchuck National Referral Hospital

INITIAL COORDINATION

Dr. Sonam Ugen (former Joint Director), Department of Public Health, Ministry of Health

COORDINATION AND PROGRAM ADMINISTRATION

Mrs. Karma Doma, Program Officer, Incharge for the NCD, DoPH
Mr. Wangchuk Dukpa, Program officer, LSRD, DoPH

DIABETES AND NCD RISK FACTOR SURVEY INITIATIVES

Mr. Dorji Phub, Senior Program Officer, focal person for NCD, Department of Public Health
Mr. Nima Yoezer (late), Epidemiologist, Ministry of Health

EDITORIAL TEAM

Dr. Gampo Dorji, Senior Program Officer, DoPH and for document writing and edition
Dr. Jeanette Henderson (UK) for editorial assistance
Ms. Michelle Hogan (Australia) for editorial assistance
Dr. Simon Barraclough (Latrobe University, Australia) for advice and editorial assistance

Table of Contents

Acknowledgements	iii
Foreword.....	ix
Abbreviations	x
Executive summary.....	1
Section 1- National Policy.....	3
1.1 Introduction.....	3
1.2 Existing Policies and Regulations on NCD and their risk factors.....	3
1.3 Alcohol.....	3
1.4 Tobacco.....	4
1.5 Physical activity.....	4
1.6 Rationale for a renewed approach to NCD policies.....	4
1.7 Vision.....	5
1.8 Mission.....	5
1.9 Objectives:.....	5
1.10 Guiding Principles.....	5
1.11 Policy statement.....	6
1.12 Defining the scope of NCD interventions.....	6
1.13 Focus on NCD risk factors:.....	6
1.14 Focus on NCDs and medical conditions:.....	6
1.15 Collaboration and Relationships among Stakeholders.....	6
1.16 Public Health Focus on NCDs and injuries.....	7
1.17 National Steering Committee.....	8
1.18 Comprehensive approach to NCDs.....	8
1.19 Poverty reduction through control and prevention of NCDs.....	8
1.20 Time frame of implementation of the strategy.....	9
Section 2: Strategies on Prevention and Control of the NCDs	10
2.1 Health promotion.....	10
2.2 Institution based intervention.....	10
2.3 Community based programmes.....	11
2.4 Improving the built environment.....	11
2.5 Work-place programs.....	12
2.6 Care, treatment and rehabilitation services.....	12
2.7 Ensuring alternatives and choices.....	12
2.8 Strengthening stakeholder capacity.....	13
2.9 Legislative, regulatory and enforcement measures.....	13
2.10 Surveillance and research.....	14
2.11 Partnership building.....	15
2.12 Assessing policies for health risk.....	16
2.12.1 Alcohol consumption.....	16
2.12.2 Tobacco use.....	17
2.12.3 Unhealthy diet.....	17

National Policy and Strategic Framework on Control and Prevention of Non-communicable Diseases

2.12.4	Physical inactivity.....	18
2.12.5	High blood pressure, dysglycemia, obesity.....	19
2.12.6	Preventing injury and safety promotion.....	19
Section 3: Financing and resource mobilization		21
3.1	Estimate of the financing need:.....	21
3.2	Financing mechanisms:.....	21
3.3	Program funding requirement:.....	21
Section 4: Prioritizing actions		22
Section 5: Coordination and partnerships.....		27
5.1	Ministry of Health.....	27
5.2	Ministry of Education.....	27
5.3	Ministry of Finance.....	27
5.4	Ministry of Agriculture.....	28
5.5	Ministry of Economic Affairs.....	28
5.6	Judiciary.....	29
5.7	Royal Bhutan Police.....	29
5.9	Bhutan Information Communication Media Authority.....	30
5.10	Alcohol Industries/Projects (distillers & brewery).....	30
5.11	Road Safety and Transport Authority.....	30
5.12	Urban Planning.....	30
5.14	Ministry of Home and Cultural Affairs.....	31
5.15	National Statistical Bureau.....	31
5.16	Thromdey.....	31
5.17	Private Sectors and Corporations.....	31
5.18	Role of international organizations and development partners.....	31
5.19	Bhutan Narcotic Control Agency (BNCA).....	31
Section 6: Monitoring- evaluation frame work		32
6.1	Monitoring:.....	32
6.2	Evaluation.....	32
6.2.1	Internal evaluation:.....	32
6.2.2	External evaluation:.....	33
Section 7: Indicators		34
7.1	Outcome indicators:.....	34
References.....		38
Annexure 1: Anticipated list of detailed implementation frame work and Legislation that will reinforce this document:		40
Annexure 2: Glossary		41

Tables and Figures

Tables

Table 1: Interventions across continuum of wellness and disease/injury.....	9
Table 2: List of provisional legislations and the key agencies	14
Table 3: Strategy- risk factor- organizational responsibility matrix for major modifiable risk factors.	21
Table 4: Strategy- risk factors and priority activity category matrix:	23
Table 5: Performance and content indicators:	35

Figure

Figure 1: Monitoring and evaluation frame work	34
--	----

Foreword

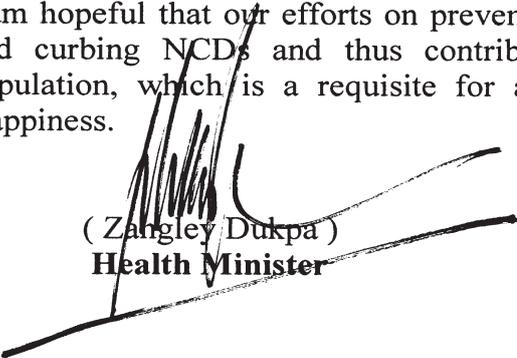
It is a matter of great concern to note the increasing evidence of the rising trend of non-communicable disease (NCDs) in Bhutan. The common NCDs such as diabetes, hypertension, and chronic respiratory diseases not only are burdensome due to their chronicity, but have significant socio-economic implications for the people living with the diseases, their family members and society. As well, medical, social and economic burden due to alcohol use are reportedly high in our society. The vicious cycle from chronic disease to poverty and poverty to chronic disease is known beyond doubt. The evidence also supports the clear link between health, economic development and poverty alleviation. Therefore, control and prevention of NCDs is vital to improve the health of the Bhutanese population and to reduce poverty. Such effective interventions would therefore contribute to our long term investment in people's health and happiness.

In doing so, Bhutan needs to adopt a holistic approach where our focus on primary prevention and the provision of care and treatment services to people living with NCDs are adequately addressed. The major approach should rely on health promotion to bridge the gap between information and the adoption of right life styles and habits at the population level on alcohol abuse, tobacco use and hazards of physical inactivity that can result in NCDs. Concurrently, the government recognizes the choices that must be in place as the population shapes our practices to healthy living. We must create communities, work places, schools and markets that make these healthy choices possible.

The need for a multi-disciplinary role for an effective response to, and the control and prevention of, NCDs and their associated risk factors, must be mounted through multitasking and sharing of responsibilities by identifying organizations and individuals that can have the greatest impact.

It is also my conviction that the control and prevention of NCDs must be included within the broader national framework of poverty reduction and included as a Millennium Development Goal by revising Goal 6 into "To combat HIV, malaria and other Non-Communicable Diseases". The Royal Government of Bhutan will provide all the support to facilitate the implementation of the prevention and control of NCDs.

I am hopeful that our efforts on prevention will be demonstrated by controlling and curbing NCDs and thus contribute to building a healthier Bhutanese population, which is a requisite for achieving the vision of Gross National Happiness.


(Zangley Dukpa)
Health Minister

September 2009

Abbreviations

BAFRA	Bhutan Agriculture and Food Regulatory Authority
BCCI	Bhutan Chamber of Commerce and Industry
BICMA	Bhutan Information Communication and Media Authority
BNCA	Bhutan Narcotic Control Agency
CBO	Community Based Organization
DoPH	Department of Public Health
ICB	Information and Communication Bureau
MEA	Ministry of Economic Affairs
MDG	Millennium Development Goal
MoH	Ministry of Health
MoA	Ministry of Agriculture
NCD	Non-communicable disease
NCWC	National Commission for Woman and Child
NFE	Non-formal education
NGO	Non-governmental organization
NPPF	National Pension Provident Fund
RENEW	Respect Educate and Nurture Empowerment of Woman
RGoB	Royal Government of Bhutan
RICB	Royal Insurance Corporation of Bhutan
RSTA	Road Safety and Transport Authority
WHO	World Health Organization

Executive summary

The Royal Government of Bhutan is concerned about the emergence of non-communicable diseases (NCDs) among the Bhutanese population. Evidence from the morbidity data of the country show an increasing trend of alcohol related liver disease, diabetes, cancers and heart diseases. The morbidity reports from 2003-2007 show that the proportion of transport and work related injuries alone comprised 34.5% to 42.8% of the combined morbidity of those diseases.

The Bhutanese population may additionally be substantially exposed to lifestyle related risk factors from alcohol consumption, physical inactivity, an unhealthy diet and smoking, all of which are causes of preventable NCDs. Currently, no population based studies are available except a STEP Survey for prevalence of risk factors and noncommunicable diseases in Thimphu (2007) conducted by the MoH in urban Thimphu in 2007. The survey revealed that 30.8 % of adult urban dwellers were current drinkers and 35.8% were reported drinking alcohol on 4 or more days of the past week; 2.6% % were hypertensive; 52.8 % had BMI of greater or equal to 25mg/m² (overweight) and 12.1 % obese (BMI >=30mg/m²). About 66.6 % of adults consumed less than the recommended amount of fruits and vegetables and large proportion had sedentary lifestyles. 8.2% had raised blood glucose level while 44.3% had raised cholesterol level.

Earlier initiatives for the prevention and control of NCDs have been fragmented and less than comprehensive, focusing on a health sector response in relation to acute care and secondary management of NCDs. Policies had been framed to control alcohol and tobacco use, but the effectiveness of these policies have not been fully understood, as a result of challenges faced in relation to policy implementation and enforcement. In the absence of a comprehensive framework to address NCDs in the Kingdom, a renewed approach is imperative. This document is aimed towards providing policy guidance and broad strategic directions for stakeholders to mount a sustained and coordinated public health response to prevent and control NCDs and improve the health and productivity of the Bhutanese population. The strategies outlined in the document have been developed and agreed by multisectoral representatives through a series of consultations. The strategies are not only desirable and attainable, they also reflect with some of the best practices internationally in public health for NCD control. The control and prevention of NCDs will be implemented through a multi-sectoral and multi-disciplinary frame-work aimed to achieve the following specific objectives:

- To raise awareness of NCDs and advocate for their prevention and control;
- To promote specific measures and interventions to reduce major risk factors for NCDs namely: harmful alcohol use, tobacco consumption, unhealthy diets and physical inactivity and their determinants among the population;
- To promote effective partnerships for the prevention and control of NCDs including injury control and safety promotion;
- To develop appropriate treatment and rehabilitation facilities with necessary skilled human resources, and
- To scale up research for prevention and control of NCDs and their risk factors.

The document is divided into seven sections as follows:

Section one: National Policy

This section provides a brief gap analysis of NCD implementation explores the need for a renewed approach and defines vision, mission, and the scope of NCD intervention. In addition, a broad policy on multi-sectoral response, integration of activities within the stakeholders, and linkage to broader development goal of poverty reduction and inclusion of NCDs in Goal six of the Bhutan MDG are covered in the section.

Section two: Strategies on control of NCDs

The section outlines broad strategic directions with key action points to be implemented by various stakeholders. The strategies to address specific risk factors: alcohol, tobacco, unhealthy diet and physical inactivity including the injury control and safety promotion are outlined in this section.

Section three: Financing and resource mobilization

Domains of financing need that are required to support the policy implementation by stakeholders are highlighted in this section. However, although the current fiscal gap to support a national response for NCD control and prevention is huge, the detailed quantification of the gap is beyond the scope of this document.

Section four: Prioritizing actions

Three priority categories of activities have been identified based on the need and the feasibility of their implementation. The time-frame for their implementation is categorized as: (i) short term (2010-2013), (ii) medium term (2014-2016), (iii) and long term (2017 and beyond).

Section five: Coordination and partnerships

The section describes the roles and responsibilities of all stakeholders, consisting of a mix of definitive and assumptive roles. Coordinating mechanisms required to facilitate actions aimed at achieving the objectives are proposed.

Section six: Monitoring and evaluation

A National Steering Committee will be established to oversee performance of the stakeholders through six monthly reports and annual reviews. The Department of Public Health, Ministry of Health (MoH) will serve as the secretariat to the National Steering Committee and coordinate, collect and process reports from the stakeholders. Evaluation will be conducted through regular internal and external evaluations.

Section seven: Indicators

Progress towards achieving each of the objectives will be measured through various performance and content indicators. Multiple indicators will be used to assess progress towards achieving two broad outcomes: (i) reducing exposure to risk factors for NCDs, and (ii) reducing premature mortality due to NCDs.

In conclusion, the strategic directions envisaged in this document are built on both past and current initiatives in health and other sectors. Implementing this strategy will require a long term commitment from all partners. The National Steering Committee will have the oversight of the implementation of the strategies but in addition, and equally importantly, of advancing political dialogue to ensure that adequate funds and resources are committed to initiate and sustain the multi-sectoral actions for control and prevention of NCDs in Bhutan. It is not expected that all actions outlined in this document will be achieved in a span of a 10th Fiveour-Year Plan (FYP) period (2009-2013), but progress will be made towards implementation of all strategies and actions during the period.

Section 1- National Policy

1.1 Introduction

The STEP survey for prevalence of risk factors and noncommunicable disease in Thimphu (2007) indicated that the Bhutanese population is likely to be exposed to significant risks of NCDs. Majority (93.1%) of the population was exposed to at least one of the risk factors (current daily smokers, less than 5 servings of fruits and /or vegetables on average per day, low level of activity, over weight (BMI >25kg/m²), raised blood pressure (SBP>140 and/or DBP >=90mmHg or currently on medication for raised blood pressure). Categorically, 56.5% were exposed to 1-2 risk factors and 38.4% had 3-5 risk factors.

The study revealed that 30.8% of adult urban population were current drinkers and 35.8% drank alcohol on 4 or more days in the last week; 6.8% smoked tobacco daily; 26.0% were hypertensive with only 9.4% on medications; 52.8 % had BMI greater or equal to 25kg/m² while 12.1% had BMI greater or equal to 30 mg/m². About 66.6% of urban adults consumed less than recommended amount of fruits and vegetables and a large proportion had sedentary lifestyles. 8.2% had raised blood sugar level while 44.3% had raised cholesterol level.

Evidence from the health facility-based morbidity data of the country also show an increasing trend of alcohol related liver disease, diabetes, cancers and heart diseases. There is a strong indication nationally and globally that burden due to NCDs would far outweigh that of infectious diseases in the 21st century.

In addition, the burden due to injury is increasing. Morbidity reports from 2003-2007 show that the proportion of transport and work related injuries comprised 34.5% to 42.8% of the combined morbidity of alcohol liver disease, hypertension, ischemic heart diseases, diabetes, and cancers.

It is therefore imperative that a sustained and coordinated public health response to the growing problem of NCDs is mounted to contribute to a healthy and productive Bhutanese population.

1.2 Existing Policies and Regulations on NCD and their risk factors

The Royal Government of Bhutan has adopted several policy measures that directly or indirectly address NCDs and these have come into being at different times. However, these policy measures are not comprehensive and hence inadequate. Some of the policies related to NCD prevention are as follows:

1.3 Alcohol

The sale of home brewed alcohol is banned since 1983.

Section 17, *Rules on the Sales Tax, Customs and Excise Act of the Kingdom of Bhutan 2000*

The sale of alcohol is permitted only to persons 18 years and older.

Rules and regulations for establishment and operation of industrial and commercial ventures in Bhutan (1985) and Notification issued vide no. KHA (12)-7/89/5070 dated August 24, 1989

The sale of alcohol not allowed before 1 p.m.

Circular issued by the then Ministry of Trade and Industry vide letter No. MTI/111-71/274 dated January 7, 1999

Bar is separated from other shops.

Circular issued by the then Ministry of Trade and Industry vide letter No. MTI/111-71/274 dated January 7, 1999

Tuesday is an alcohol free day and sale of alcohol is prohibited.

Circular issued by the then Ministry of Trade and Industry vide letter No. MTI/111-71/274 dated January 7, 1999

Alcohol is prohibited to be sold near premises of educational institutions, Dratsangs, Rabdeys, Gomdeys, Shedras and Dzongs, hospitals and schools.

Circular issued by the then Ministry of Trade and Industry vide letter No. MTI/111-71/274 dated January 7, 1999

Drunk driving not permitted.

Road Safety and Transport Authority Act

The Bhutan Penal Code refers to alcohol specifically in Sections 383, 390, and 392 in Chapter 27: Offences against the Public Welfare as follows:

383 Public Intoxication

A defendant shall be guilty of the offence of intoxication, if the defendant is in the public place and under the influence of alcohol, narcotics, or a drug not administered under medical supervision endangers oneself, another person, or property.

1.4 Tobacco

The 82nd session of the National Assembly of Bhutan ratified the WHO Framework Convention on Tobacco Control (FCTC) on August 12, 2004.

Sale of tobacco is banned throughout in country through formal announcement by the Prime Minister on December 17, 2004.

Smoking in public places is prohibited.

1.5 Physical activity

All schools must have a playground.

Physical training and games classes are an integral part of the school curriculum.

Towns and cities have to have footpaths for people to walk safely.

New townships have to have a park provisions.

Bhutan National Bank reimburses 50% of the expenditure for membership of the fitness clubs for the staff.

1.6 Rationale for a renewed approach to NCD policies

Notwithstanding the inspiring past initiatives, a renewed approach is urgently required to control and prevent NCDs in view of:

- the absence of a comprehensive policy to address NCDs, life style related diseases and injury prevention;
- a weak national coordination and implementation framework for programs and projects targeted towards prevention and control of NCDs;

- Inadequate financial resources to implement sector-wide policies related to NCDs;
- epidemiological evidence that a growing burden of NCDs creates an important public health challenge for the national health system;
- the need for greater recognition by all stakeholders that major determinants of and risk factors for NCDs lie outside the health sector and that intersectoral collaborative efforts are the only effective ways for the prevention and control of NCDs, and
- the need to prepare for further demographic transition towards older population and ensure equitable health outcomes among population groups.

1.7 Vision

Attainment of the highest standard of physical, mental and social wellbeing for all Bhutanese by adopting healthy lifestyles and reducing exposures to risk factors that contributes to NCDs.

1.8 Mission

Achievement of NCD prevention and control objectives and contribution towards attaining national health goals through the strengthening multi-sectoral interventions and collaboration at national, district and community levels.

1.9 Objectives:

- to raise awareness of NCDs and advocate for their prevention and control;
- to promote implementation of efficient measures and interventions to reduce major risk factors for NCDs namely: harmful use of alcohol, tobacco use, unhealthy diets and physical inactivity and their determinants among the population;
- to promote effective partnerships for the prevention and control of NCDs including injury control and safety promotion;
- to ensure equitable access to health facilities that provide quality, evidence-based preventive, treatment and rehabilitative services, and
- to strengthen research for prevention and control of NCDs and their risk factors.

1.10 Guiding Principles

The control and prevention of NCDs and their risk factors will be guided by the following principles:

- *a focus on major modifiable risk factors and their determinants;*
- *application of a life course approach addressing changing needs of different age groups as they move through subsequent stages of life;*
- *an integrated approach combining population-based and high-risk strategies;*
- *shared responsibility by relevant sectors and stakeholders;*
- *prioritization of cost-effective and evidence-based intervention;*
- *application of a stepwise approach in the implementation of the NCD program taking into consideration the status of development of the health system and availability of resources, and*
- *provision of the equitable access to health care to all, based on health needs and not on the ability to pay.*

1.11 Policy statement

The Royal Government recognises that NCDs are a growing problem in the country and accords high priority to their prevention and control. This may be achieved by minimizing exposure of the population to NCD risk factors through a multi-sectoral approaches and the provision of appropriate preventive, treatment and care services to reduce avoidable morbidity, disability and mortality of NCDs.

The control and prevention of NCDs is aimed at maintaining the burden of NCDs at a low level in the population, through the following broad measures:

- integration of NCD prevention activities into plans and programs of relevant sectors;
- reinforcing existing policies and regulations on NCDs;
- promoting healthy life style initiatives through strategic health promotion, and
- strengthening health services to provide timely treatment and a continuum of care.

1.12 Defining the scope of NCD interventions

The approach to prevention and control of NCDs will focus on the risk factors and their underlying determinants, while also providing an equitable, quality treatment and care services for those living with NCDs. The interventions will not be limited to traditional defined list of NCDs but also address life style related factors, biological and chemical hazards, physical and built environments (for example work place, air quality and planning decisions that affect our health) all of which influence the development of NCDs. Injury (intentional and unintentional) and related public health problems which pose an increasing challenge to the country, will also be included in this strategy.

1.13 Focus on NCD risk factors:

Most common modifiable and preventable risk factors for NCDs are tobacco use, alcohol abuse, unhealthy dietary habits, physical inactivity and exposure to chemicals and pollutants. Besides these factors, NCDs are linked to many underlying social, economic and cultural determinants. The national policy for NCD prevention and control will recognize upstream risk factors and determinants and strategically implement relevant cost-effective and evidence-based actions to prevent and mitigate individual and population-based consequences of NCDs.

1.14 Focus on NCDs and medical conditions:

The distant outcomes of prolonged exposure to the risk factors are manifested as physical and mental diseases. Cardiovascular and cerebrovascular diseases, diabetes, hypertension, cancers and chronic respiratory illnesses are common medical conditions that require long-term medical treatment and care. The MoH will ensure that standard medical support and treatment are provided to people with NCDs, and that the continuum of care and social support is provided by empowered families and communities.

1.15 Collaboration and Relationships among Stakeholders

The NCD policy will be supported by strategies, programmes and projects for NCD prevention and control which will be developed, instituted and implemented by relevant stakeholders.

NCD prevention activities will involve a multidisciplinary approach that engages, but is not limited to, key ministries and departments including Education, Agriculture, Trade and Industries, Finance, National Provident Fund, Royal Bhutan Police, Home Ministry, Judiciary, Army Welfare Project, Department of Urban Development, Home Ministry, RSTA, BICMA, BCCI, as well as private institutions and non-governmental organizations.

Interventions by these organizations will be implemented through mainstreaming NCD policies and work plans relevant to their sectors.

Broadly the sectors will strive to address prevention and control of NCDs by the following actions:

- promoting awareness among the population on NCDs and their risk factors with an emphasis on specific interventions for high risk target groups;
- developing, strengthening and reinforcing existing NCD policies viz. alcohol, tobacco, physical activity, diet and obesity;
- promoting healthier work places by developing appropriate facilities such as facilities for physical activity, fitness clubs and smoke-free work places;
- Strengthen injury prevention and safety promotion at work places and occupational settings
- promoting research for the prevention and control of NCDs;
- developing initiatives based on a life course approach for NCD prevention;
- instituting NCD steering committees comprising relevant ministries, departments and private sector entities at the local level (these steering committees shall function as per the set terms of reference);
- mobilizing resources to enable the implementation of the plans;
- setting realistic targets for stakeholders and working towards achieving them, and
- advocating for enactment of measures aimed to reduce consumption of alcohol and tobacco, and to mitigate the health impact of environmental hazards.

1.16 Public Health Focus on NCDs and injuries

The MoH will assume the leadership role in driving and coordinating the prevention and control of NCDs. The Life Style Related Disease Program, Department of Public Health will function as the nodal agency for control and prevention of NCDs to fulfill the following mandate:

- institute a surveillance system for risk factors of NCDs;
- develop relevant and measurable indicators at input, process and outcome levels for periodic monitoring and evaluation;
- strengthen health services and human resource capacity at all levels to effectively control, prevent and manage NCDs and their risk factors;
- formulate standard guidelines and other health care materials on NCDs and their risk factors;
- promote early detection and appropriate care of NCDs;
- conduct operational, analytical research on NCDs and their risk factors;
- coordinate action of different players within the health sector involved in implementing NCD related activities, and
- instituting a national program for injury prevention and safety.

1.17 National Steering Committee

At the national level, a national steering committee for NCDs will be formed having policy makers from relevant ministries, departments and private sector organizations as members. The steering committee shall:

- make decisions related to control and prevention of NCDs;
- endorse and review the framework of policy implementation;
- define roles and responsibilities of key sector agencies involved in implementation of activities;
- provide guidance and review the progress of implementation of NCD strategies and interventions;
- ensure adequate funding from RGOB as well as from external funding sources within and outside the health sector for NCD prevention and control activities, and
- boost political and institutional commitments of stakeholders.

1.18 Comprehensive approach to prevention and control of NCDs and their risk factors

The control and prevention of NCDs will encompass a comprehensive population-based and high-risk approaches focusing on health promotion, and on primary prevention and efficient management of diseases. Successful implementation of these approaches will reduce a proportion of people at high risk, prevent those at high risk to progress to NCDs and deliver evidence-based health interventions to people with diseases and injuries; and ensure access to rehabilitation services. (see table 1).

Table 1: Interventions across continuum of wellness and disease/injury

	Health status			
	Well	At risk	Injury	Disease
Type of intervention	Health promotion	Primary prevention	Prevention, acute management, rehabilitation	Early detection, treatment and care
Specific strategies	Behavior change for general and targeted groups using community and healthy setting (school, work place, institutions) approach	Population-based and high risk approach (including screening of target groups)	Treatment and acute care, rehabilitation, complication management	Case finding through periodic health examinations, continuing treatment and care, including self care, rehabilitation
Common strategies	Health Promotion	Health Promotion	Health Promotion	Health Promotion
Stakeholders	Department of Public Health, primary health care, other sectors*	Department of Public Health, primary health care, select stakeholders	Department of Public Health, primary health care, specialists and hospital care	Primary health care, Specialist and hospital care, community care

Adapted from Prevention across continuum of care of wellness and disease/injury, Western Australian Health Promotion Strategic Framework 2007-2011

* Listed in the Section 3 of the document

1.19 Poverty reduction through control and prevention of NCDs

NCDs and their risk factors have a direct and indirect macro and micro-economic implications (affecting national economies, communities, households and individuals). Chronic diseases and poverty are interconnected in a vicious cycle - poverty leads to chronic diseases and vice versa. Therefore addressing the NCDs is timely and a necessity for Bhutan where the major focus of the 10th FYP is poverty reduction.

The strategies and activities outlined in this policy are targeted at control and prevention of NCDs within the framework of the MDG by redefining Goal 6 as “Combat HIV/AIDS, malaria and NCDs”

1.20 Time frame of implementation of the strategy

The strategic directions envisaged here are built on past and existing initiatives in health and other sectors. Implementing this strategy will require a long term commitment from all partners. It is not expected that all actions outlined in this document will be achieved in a span of the 10th FYP period, but progress will be made towards all of these strategies and actions during this period.

Section 2: Strategies on Prevention and Control of the NCDs

Strategies on NCD prevention and control are developed after determining risk factors in the community, prioritizing and ascertaining possible determinants and developing measures to minimize their exposure. These include strategies for surveillance, health promotion and capacity strengthening within and outside the health arena. The following broad strategies will be employed:

- *Health promotion*
- *Institution based interventions*
- *Community based programs*
- *Improving the built environment*
- *Work based programs*
- *Care, treatment and rehabilitation services*
- *Ensuring alternatives and choices*
- *Strengthening stakeholders' capacity*
- *Legislative, regulatory and enforcement measures*
- *Surveillance and research*
- *Partnership building*
- *Assessing policies for health risk*

2.1 Health promotion

Health advocacy and promotion: Health promotion is the most important approach for prevention and control of the NCDs. Health promotion campaigns for the general population and other behavior change communication approaches, such as social marketing will be used to reach specific vulnerable groups on issues of alcohol consumption, tobacco use, physical inactivity and other risks of NCDs through:

- identifying political leaders, opinion leaders and engaging systematically to inform the population of the growing burden of NCDs, the existence of effective interventions through a multi-sectoral and comprehensive response;
- strengthening advocacy initiatives to promote risk reduction among the target populations, and
- implementing comprehensive and integrated advocacy initiatives through multiple communication methods.

2.2 Institution based intervention

The mainstreaming of education on NCDs and their risk factors will be addressed in schools, monastic institutions and the Royal Institute of Health Sciences with collaboration of the Ministry of Health. In particular the Life Style Related Disease Program through the Department of Public Health will:

- support the Curriculum Division of the Ministry of Education in a developing “life skill” school education program that includes NCDs and other important aspects of CDs in a progressive curricular approach;

- collaborate with the Information and Communication Bureau (ICB), MoH to develop advocacy programs for the community, religious body and other sectors;
- along with ICB, the Health and Religion Program, collaborate with *Dratsang* to integrate information and training sessions on healthy diet, obesity prevention, physical activity and on NCDs with the monastic institutions;
- collaborate with the RIHS to evaluate the curriculum for all categories of health workers and incorporate preventive, promotive, curative and rehabilitative aspects of NCDs programme, and
- collaborate with the ICB to develop educational materials for raising public awareness of harm due to alcohol, unhealthy food habits and other unhealthy behaviours/behaviors and the need of periodic health examinations.

2.3 Community based programmes

Engage with adequate support: Identify communities where the consumption of alcohol and tobacco are the highest and engage these communities with adequate funds to develop community focused action plans to ensure steady progress to reduce use of alcohol, tobacco, harmful foods and substances.

Cessation and harm reduction programs: Support and foster team work among the alcohol abusers to develop peer support counseling programs to reduce the harmful use of alcohol. Support tobacco cessation programmes among tobacco users.

Targeting most at risk: Community based programs shall identify and provide technical and financial support for disadvantaged groups, both rural and urban which are at higher risk of using the alcohol and tobacco.

Community based programs will be conducted routinely to build understanding among the selected communities to improve food security and reduce poverty by reducing purchase or production of alcohol.

Special attention must be given to reaching the urban population since findings suggest that NCD risk factors are more prevalent in this setting.

NGO involvement: The Royal Government and the Ministry of Health in particular, will encourage and support NGOs and self-help movements that work towards NCD prevention and care.

2.4 Improving the built environment

The environment plays an important role in the health of individuals, families and communities. Therefore, the recognition of broad environmental conditions such as physical and built environment (work place, air quality, urban planning and designs for infrastructure, etc) and the impact of global climate change shall be recognized. Intervention will be applied through further reinforcement of the existing policies of:

- adherence to tobacco smoke free zones in offices, bars, restaurants and other designated places;
- control of carbon emissions from motor vehicles;
- maintaining carbon emission standards in industries and factories, and
- dust-free classrooms through child friendly school approaches.
- To improve the built environment the major focus will be upon:

- informing leaders and decision makers in the urban design and transport sectors about the impact that design and transport can have on physical activity patterns, and on NCDs, and
- incorporating standard physical activity components of the built environment in transport planning, design and construction decisions to ensure conducive environment for physical activity.

2.5 Work-place programs

Work-place programs are important for reducing the risk exposures to prevent NCDs and improving the health of employed people. Further, work-place programs contribute to increased productivity through decreased absenteeism due to illnesses. Organizations and institutions will ensure observance of smoke-free work places, encourage the establishment of fitness centers in work-places and/or provide financial schemes for fitness activities for employees.

2.6 Care, treatment and rehabilitation services

The health services must be responsive and sound at all levels to be able to cater to the needs of people living with NCDs in an equitable manner.

Evidence based management guidelines for common NCDs and their risk factors will be developed by the Department of Medical Services. These will cover primary prevention, treatment and care and also address the management of terminal stages of chronic diseases. This guideline will have a step up management plan for different levels of health facilities.

The Ministry of Health will:

- train and provide in-service upgrades to all peripheral health workers and primary care physicians to detect NCDs early and manage NCDs in “step up approach”; workers will be empowered to give appropriate and succinct advice to sector members and clients;
- enhance screening programs for the early detection of diabetes, cardiovascular diseases, and cancers;
- continue to provide basic health services (including medicines) at all health care levels according to clients’ needs and the capacity of health system;
- continue to strengthen referral hospitals as centers of excellence so that optimal health services are provided and most NCD complications are managed within the country;
- ensure the provision of de-addiction services within and outside of the health sector to assist and help those who need such support;
- provide effective rehabilitation to people with disabilities related to NCDs, and
- develop provisions to empower families of people with NCDs and communities to contribute to long-term care for NCDs.

2.7 Ensuring alternatives and choices

Health promotion, community based programs and mainstreaming of control and prevention of NCDs and their risk factors will take place in early learning centers, schools, universities and monastic institutions. This will increase the consumer demand for provision of healthy food products and fruits, access to sports

and recreation facilities, play grounds and resident friendly infrastructures. Availability of and equitable access to healthy choices will be promoted through implementation of multisectoral policies developed by the Department of Urban Planning, Ministry of Education, Ministry of Agriculture, Ministry of Health and other relevant stakeholders.

2.8 Strengthening stakeholder capacity

Skilled and motivated workforce: Organizations will develop the skills and competencies of the workforce to respond to the collaborative efforts of control and prevention of NCDs and their associated risk factors. Workers will obtain training, and advance their knowledge and skills relevant to their area of contribution.

Inventory of inputs: Stakeholders will maintain a documentary record of training, workshops and academic enhancement programs that relate to control and prevention of NCDs.

Succession planning: Stakeholders shall make annual personnel and financial projections required for skill-building activities.

Appropriate competencies are necessary for stakeholders to enable their contribution to the reduction of NCDs such as:

- urban planners, designers and municipal engineers for planning health enhancing designs (accessible foot-paths, attractive walking and cycling routes, walk-able neighborhoods, streets, seating, signage, fencing, walls, and improved building designs);
- transport planners for providing a safe and efficient public transport system;
- traffic police for traffic control, safe streets and efficient supervision for risky driving practices including driving under the influence of alcohol;
- training community members to support planning for healthy designs;
- training health workers and doctors in promoting physical activity;
- physical education experts and trainers to develop standards for physical activity; nutritionists and dieticians to set recommended dietary intake (food based and nutrient based) standards for the population, and
- researchers to design studies on NCDs and their risk factors and conduct a rigorous evaluation of the interventions.

2.9 Legislative, regulatory and enforcement measures

To ensure effective control and prevention of NCDs and their risk factors, it is necessary to have legislation and regulations. The implementation of the strategy will be complemented by further enforcement of the existing legislations namely:

- *Road Safety and Transport Act 1999, Royal Government of Bhutan*
- *Narcotic Drugs, Psychotropic Substances and Substance Abuse Act 2005, Kingdom of Bhutan*
- *The Food Act of Bhutan, 2005*
- *Bio-security Policy 2008, Kingdom of Bhutan*
- *Bhutan Information, Communications and Media Act 2006*

- *Tobacco Control Bill, Bhutan 2009*
- *National Environment Protection Act of Bhutan, 2007*

Further legislative and regulatory initiatives are required to support public health interventions pertaining to tobacco, alcohol, built environment, diet and injury control. Table 2 presents a list of priority legislations and regulations to be developed.

Table 2: List of provisional legislations and the key agencies

Provisional legislation	Key agencies
Public Health Act of Bhutan	Ministry of Health
Bhutan Tobacco Control Legislation	Ministry of Health, Ministry of Economic Affairs, BICMA, MoIC
Bhutan Alcohol Legislation	BNCA, Ministry of Health, Ministry of Economic Affairs, BICMA
Bhutan Physical Activity Act (To regulate the built environment that supports active living)	Ministry of Works and Human Settlement, Ministry of Health, Ministry of Education,
Regulations concerning safe driving practices: drunk driving, helmet, seat belt use, and pedestrian friendly roads	Road Safety and Transport Authority, Royal Bhutan Police, Ministry of Health
Act pertaining to Diet and Nutrition that can regulate production /import of unhealthy food (high trans-fat content), food labeling legislation	Ministry of Agriculture, Ministry of Health
Legislation to limit and control food marketing and advertising to children that have high salt, high sugar and high fat	BICMA, Ministry of Agriculture, Ministry of Health

2.10 Surveillance and research

To control and prevent NCDs and reduce their risk factors, it is necessary to establish a comprehensive national surveillance system focusing on social, behavioral, environmental and biomedical risk factors. A focus will also be given to community based research that enables active involvement and use of the results by the community. Appropriate studies and research will also be conducted to evaluate whether interventions are working or not. The WHO STEP wise risk factor surveillance has been adapted to the Bhutanese context and first urban baseline information collected. The following priority surveillance activities will be carried in the first instance by the Ministry of Health:

Institute NCD risk factor surveillance in high risk populations, rural areas and in other parts of the country.

Carry out repeat surveys in the same locality every five years to assess trends of risk factors.

Introduce a hospital cancer registry firstly at the JDWNRH and then at other referral hospitals.

Introduce alcohol liver disease registry in hospitals to generate data for broad impact of alcohol abuse.

Strengthen the existing registry of diabetes. Establish registries in major hospitals of other chronic disorders including chronic renal failure and organ transplants.

Collect population baseline information on food and nutrient consumption.

To build evidence based planning and implementation of the control and prevention of NCDs, the Ministry of Health will assist/collaborate with:

The Ministry of Economic Affairs to institute a surveillance system for sentinel sites on smoking and tobacco related trade in the country. A similar survey will also be conducted for the alcohol trade.

The Ministry of Works and Human Settlement to survey enabling environments for physical activity in urban settlements and to improve things for people with physical disabilities.

The Road Safety and Transport Authority and the Royal Bhutan Police to conduct research on drunk driving, use of helmets, seat belts for the drivers and pedestrian related safety.

The Ministry of Education to institute a surveillance system to monitor environment and physical activity for school children.

2.11 Partnership building

Common forums: Stakeholders will meet annually to share information about achievements and problems. Such forums shall be convened through annual retreats or workshops.

A national convention will be held by on an annual basis with participants comprising of researchers, academicians, practitioners, advocates, lobbyists, to present, discuss and disseminate information of NCDs and broader health issues in Bhutan.

New partnerships: The need for new partnerships is bound to arise as plans are implemented. Such alliances will be fostered with private organizations, institutions, communities and individuals.

Engagement of community groups: A strategic partnership will be built among people living with NCDs. Support will be given for the formation of community volunteer and advocate groups for health promotion. Encouragement will be provided for community based organizations, and NGOs to participate in activities related to enhancing physical activity, improving built environment, and reducing alcohol and tobacco consumption.

Partnership with media: All the media organizations in the country will be included as partners, members of the steering committees and relevant forums for policy making and implementation for the health promotion.

2.12 Assessing policies for health risk

It is necessary to institute appropriate procedures to review policies related to NCD risk factors (tobacco and alcohol use) health harming impact of which outweighs the perceived benefits. Policies on alcohol and tobacco production and/or trade are often controversial with conflicting views among stakeholders. In order to formulate cost-effective policies regulatory authorities and quality control bodies will include appropriate experts from within the health sector and other stakeholders to assess such policies and make recommendations.

Specific strategies for modifiable risk factors

A group of common, measurable and modifiable risk factors for NCDs will be prioritized and addressed in depth. The Ministry of Health has established the prevalence of modifiable risk factor of NCDs in the urban community. The focus will be on the prevention and control of the following important risk factors and their determinants through sound strategies and actions:

2.12.1 Alcohol consumption

Strategies will aim to create greater public awareness on ill effects of alcohol consumption and reduce the prevalence of alcohol drinking through the creation of the environment that reduce harmful alcohol use. The strategic directions will focus on demand and supply reduction measures, and strengthening legislation to support implementation of alcohol policies. A continuum of care will be provided for the people suffering from alcohol related illnesses.

Key actions:

The Ministry of Health will approach the highest religious authority of the country and seek a decree that supports minimization of alcohol use by the community and discourage non-drinkers from alcohol consumption.

The Ministry of Health will take the lead role in developing and disseminating sustained public education through media campaigns on the harmful effects of alcohol and implement community based public health interventions to reduce alcohol consumption in communities where alcohol consumption is high.

The Ministry of Education, in collaboration with the Ministry of Health, will develop teaching materials for schools and teacher training institutes to foster a life skills approach to a 'no to alcohol' ethos among children and young people of all ages.

The Ministry of Health and the Ministry of Economic Affairs will work in partnership with ministries, departments and organizations to develop alcohol policies that regulate physical availability of alcohol (both home and factory brewed) through outlet density, trading hours, and alcohol licensing and taxation policies.

BNCA will develop the National Strategy for alcohol use prevention and strengthened alcohol legislation to support changes in alcohol-related policies with regard to alcohol pricing, discourage underage drinking, alcohol use by women of reproductive age, driving, operating machineries under the influence of alcohol, and the illegal production and import of alcohol.

The Ministry of Economic Affairs will lead the coordination of relevant enforcement agencies of policies on alcohol and tobacco trade.

The Ministry of Health will improve the capacity of health services, the health work force and related partner organizations to screen, detect and intervene in cases of harmful drinking and provide rehabilitative services for alcoholics and those with alcohol related diseases.

The Royal Bhutan Police and the Road Safety Transport and Authority will strengthen the supervision of drivers in order to detect drunk drivers.

2.12.2 Tobacco use

Holistic approach: The tobacco control program aims for three main outcomes: to prevent the initiation of tobacco use by young people, to promote and support cessation among tobacco users and to eliminate nonsmoker's exposure to second hand smoke.

Initiatives to implement tobacco control will be guided by the provisions of the (Draft) Tobacco Control Bill, Bhutan 2009 and the Tobacco Control Implementation Strategy. It will focus to build on the high level of community support to control tobacco and encourage the active engagement of communities.

Key actions:

The Ministry of Economic Affairs will take a lead role to coordinate all stakeholders to implement existing policies and regulations on the sale and supply tobacco-related products.

Stakeholders will establish specific programs that promote smoke free work places and reduce exposure to second hand smoke.

The observance of designated smoke-free zones will be enforced by the relevant stakeholders, such as hospitality services, institutions of learning and others.

The Ministry of Health will enhance advocacy at the population level through media campaigns targeting young people to discourage starting smoking or the consumption of any form of tobacco.

The Ministry of Education will implement tobacco control initiatives in schools through youth programs and life skills teaching.

The Ministry of Health will improve the access to affordable smoking cessation programs through intensive individual counseling, supportive group sessions, and telephone counseling (Quit Line).

2.12.3 Unhealthy diet

In order to improve nutrition of the population and promote healthy eating to prevent NCDs, multiple strategies that include food supply, food access and choice, will be employed. Implemented will be through a broad population-based approach and targeted interventions to reach individuals and communities with high risk dietary habits.

Key actions:

The Ministry of Health, in partnership with line ministries and departments will work towards developing policies that support a healthy diet. The Ministry of Health will also enhance advocacy at population level for healthy dietary practices.

The Ministry of Health will institute a multi-sectoral technical committee to conduct research on food and dietary intake to inform and enable development of information for consumer-based messages. This guideline will be reviewed on a five yearly basis.

The Ministry of Health will work towards increasing capacity of health services to conduct nutritional assessment, early identification of risk and provide brief intervention for pregnant mothers, children and those at risk chronic diseases, provide supportive services for people to encourage a balanced diet, and promote national breast feeding policies.

The Ministries of Agriculture, Economic Affairs and Health, BAFRA and BICMA will collaborate to establish food based guidelines, including labeling, advertising and marketing, to support the healthy composition of food by reducing salt level, trans-fatty acid, and saturated fat.

The Ministry of Education in collaboration with the Ministry of Health will develop education materials for schools (curricula) aiming at enhancing the practice of having a healthy diet in children of all ages. The Ministry of Education shall assess the current diet status and suggest a strategy to ensure a healthy diet for school children.

The *Dratshang Lhentshog* and the Ministry of Health shall coordinate to advocate, and offer training on healthier dietary practices in monastic institutions.

The Ministry of Agriculture will develop policies and schemes that encourage rural population to increase production and availability of fruit and vegetables at affordable prices.

The Ministry of Health, in partnership with judiciary and other regulatory departments, will work towards enhancing laws and regulations that support healthy and balanced diet at all levels and for population groups.

2.12.4 Physical inactivity

A comprehensive approach is required that engages key stakeholders through community based initiatives that enable building a supportive environment to help change individual and group behaviors to reduce inactive physical lifestyles. The strategy will aim to increase physical activity at the population level by enhancing understanding among the general public that more physical activities lead to better health.

Key actions:

The Ministry of Health will establish a recommended national standard for physical activity, advocate at the population level for physical activity in the workplace, and encourage walking and regular physical exercise with a focus on the urban and more sedentary population.

The Ministry of Health will provide support to health care professionals to enhance their skills and to provide advice about physical activity and incorporate such advice into chronic disease management.

The Ministry of Education, in collaboration with the Ministry of Health, will develop education materials for schools (curricula) aiming at encouraging physical activity in children of all age and provide supportive environments.

The Ministry of Works and Human Settlement and the Ministry of Health will form a partnership to influence urban design, transport related activities, and recreational facilities, proposing regulation and policies for improving the built environment in order to promote healthy life style practices.

Community based organizations, NGOs and individual groups will be invited to design projects and implement activities to increase physical activities.

2.12.5 High blood pressure, dysglycemia, obesity and hyperlipidemia

The strategy will aim to educate the general population and those already experiencing abnormal blood pressure, abnormal sugar and lipid level and unhealthy weight gains to prevent and manage these problems through active health sector and community based activities.

Key actions:

The Ministry of Health will coordinate with BICMA and all media to inform the population about NCD risk factors and primary prevention.

The Ministry of Health will strengthen measures to initiate early detection through screening programs for life style related diseases: diabetes and hypertension and also ensure appropriate management and secondary prevention of complications of NCDs.

The capacity of health services will be enhanced for early detection, education and management of NCDs and for those affected by NCDs to lead an optimal life.

Communities will be encouraged to develop local strategies to control obesity, plan healthy life style programs and create community self-help groups.

2.12.6 Preventing injury and safety promotion

A comprehensive approach to injury prevention and safety promotion will be instituted using a population approach. The aim is to reduce the incidence of injuries and associated harm by reducing risk factors for injuries, increasing awareness and risk identification, creating safer environments and creating effective links between prevention and management of injuries. The initiative will use a life course approach of intervention targeted to the needs of the young, middle and elderly age groups. Key causes of injuries due to road trauma, occupational injuries and the harm of domestic violence will be considered.

Key actions:

The Ministry of Health will establish a public health program with a separate unit at the Department of Public Health to over see public health approaches of injury control initiatives. The unit will ensure program development for injury control within the frame work of health sector responsibilities.

The Road Safety Transport Authority, Royal Bhutan Police and the Department of Public Health will engage in the development and implementation of the Road Safety Strategic Framework consistent to the Road Safety Act of Bhutan 1999.

The Ministry of Health and the Royal Bhutan Police will draw up a coordination mechanism between the emergency medical services and fire departments. Also these two organizations will strengthen the capacity of the emergency and fire services to respond to emergencies in order to reduce injury and casualties.

The RSTA will coordinate programs in schools and communities for pedestrian safety and conduct trainings for the drivers and transport workers such as taxi and bus drivers, on safer driving practices.

The focal unit at the Department of Public Health will liaise with the National Commission for Women and Children to implement activities in relation to domestic violence and injuries.

The Ministry of Education will support schools to reduce violence and bullying.

The Occupational Safety Program in the Ministry of Labour and Human Resource and the focal program at the Department of Public Health will be coordinated on common issues to improve workers safety.

Table 3: Strategy- risk factor- organizational responsibility matrix for major modifiable risk factors

	Tobacco	Alcohol	Physical activity	Diet
Health Promotion for the general population	MoH	MoH	MoH	MoH
Care, treatment and rehabilitation services	MoH	MoH	MoH	MoH
Institution based interventions	Schools (MoE)	Schools (MoE)	Schools (MoE) Dratshang	Schools (MoE) Dratshang
Community based interventions	MoH	MoH	MoH	MoH
Improving the built environment	All stakeholders Business sectors	All Stakeholders Business sectors	MWHS (Urban planning & Municipal corporations)	MoA, MoH
Workplace programs	All stakeholders	All stakeholders	All stakeholders	All stakeholders
Capacity building of stakeholders	All stakeholders	All stakeholders	MoE (Physical Education Unit)	MoA, MoH, MEA
Legislative, regulatory and enforcement measures	MEA, MoH, RBP, BICMA	MEA, MOH, RBP, BICMA	MWHS, MoE, MoH, BICMA	MoA, BAFRA, MOH, BICMA
Surveillance and Research	MoH, MEA	MoH, MEA	MoE, MoH	MoA, MoH

Section 3: Financing and resource mobilization

The health financing system must be reviewed and harmonized across diseases and levels of care, and designed to maximize equity and effectiveness. Adequate funding and resource must be allocated to begin to control and prevent of NCDs at the national level. This will include an appropriate share of finance and resources for stakeholders who implement activities, directly or indirectly, that contribute towards the control and prevention of NCDs.

3.1 Estimate of the financing need:

Implementation of the packages for control and prevention of NCDs is a multidisciplinary approach involving a range of stakeholders. Therefore, future projections of fiscal requirements should take account of all the interventions based within the mandates of stakeholders. A separate fiscal exercise is required subsequently to estimate a multi-year budget to fund implementation of the strategy. *However, intuitively it can be stated that there is a significant fiscal gap that must be closed so that a multi-sectoral intervention for control and prevention of NCDs is implemented holistically.*

3.2 Financing mechanisms:

The national leadership must commit to finance the strategy. The budget allocated for NCDs through the Health Ministry is traditionally dedicated to the support care, treatment and prevention components that are specific to health roles. Therefore, other stakeholders must also incorporate budgeted work plans within their annual plan.

Stakeholders should be encouraged to mobilize funds through projects, grants from national and international agencies with the partnership and guidance of the Ministry of Finance.

3.3 Program funding requirement:

- Conducting sustained mass health promotion campaigns.
- Conducting targeted interventions with communities at higher risk and disadvantaged groups.
- Supporting community based organizations, NGOs and relevant community groups for projects and grants that are focused on NCDs and the risk factors.
- Training human resources across stakeholders to build competencies and skills including a long term courses for urban and municipal planners, health workers, researchers, physical educationists and sports medicine experts.
- Conducting research, evaluation, and improving collaborative and wide range research capacity among stakeholders.
- Hiring expatriates where necessary to assist program implementation.

Section 4: Prioritizing actions

Implementing the strategic directions listed in this document will require specific actions. All of these actions are necessary for control and prevention of NCDs in the longer term. Implementation is, however, determined by the ability to fund activities, and hence they must be prioritized in the light of financial resources and the comparative benefit of interventions. Therefore, a three priority category of: short term, medium term and long term plans are made.

The duration of implementation for each priority category is defined as follows:

Short term plan: (2010- 2012)

Medium term plan: (2013-2016)

Long term plan: Beyond 2017

Table 4: Strategy- risk factors and priority activity category matrix:

Strategies	Risk factors	Short term	Medium term	Long term
Health promotion	Alcohol	Decree from Je khenpo Develop media campaign framework	General and targeted media campaigns	Media campaigns
	Tobacco	Develop media campaign framework	General and targeted media campaigns	Media campaigns
	Physical activity and diet	Develop media campaign framework	General and targeted media campaigns	Media campaigns
	Injury prevention and safety promotion	Develop media campaign framework for schools and young people	Media campaigns	Media campaigns

Strategies	Risk factors	Short term	Medium term	Long term
Institution based interventions	Alcohol	Develop teaching materials for the training institutes and schools	Teach prevention of alcohol abuse in schools through life skill education	Curriculum review and evaluation Redevelopment of curriculum
	Tobacco	Develop teaching materials for the training institutes and schools	Teach prevention of tobacco abuse in schools through life skill education	Curriculum review and evaluation
	Physical activity and diet	Initiate teaching in <i>Dratsang</i> and monastic institutions	Teach prevention of alcohol abuse in schools through life-skill education	Curriculum review and evaluation
	Injury prevention and safety promotion	Develop common framework with NCWC and RENEW	Implement the common framework	Evaluate the common framework
Community based programming	Alcohol	Pilot community based programs to reduce alcohol consumption	Expansion of community based programs to reduce alcohol	NGO's and CBOs implement NCD interventions
	Tobacco	Tobacco cessation programs for youths tobacco users	Tobacco cessation programs for adults and youths	Evaluation of the tobacco cessation programs
	Physical activity and diet	Pilot community groups for increasing physical activity	Foster community groups to control obesity and increase physical activity	
	Injury prevention	Sensitization of work place injury prevention in identified communities	Assessment of cause specific burden of injuries in communities	Evaluation and adjustment of interventions

Strategies	Risk factors	Short term	Medium term	Long term
Improving the built environment	Alcohol	Limit access of alcohol from schools and other learning institutions		
	Tobacco	Create smokers space in selected smoking prohibited zones	Incorporate structural facilities for smokers and non-smokers in relevant private and public spaces	
	Physical activity and diet	Pilot few walk and track routes. Incorporating healthy design standards	Expand walk and track routes Develop recreational parks, pedestrian paths	Develop cycling routes
	Injury prevention	Observe passenger practices in transport industry	Construct pedestrian friendly roads and traffic system	
Work place programs	Alcohol	Implement policies for trading hours for alcohol Pilot sentinel sites for monitoring	Limit outlet density of alcohol Expansion of sentinel sites of alcohol	Evaluate alcohol availability in sentinel sites
	Tobacco	Observe smoke-free zones as designated	Sentinel sites for monitoring smoke free zones	Sentinel sites evaluation
	Physical activity and diet	Fund promotional events Pilot programmes for fitness clubs and healthy eating places	Integrate design for fitness and physical activities in construction of work places	
	Injury prevention	Assessment of work place safety for health Implement monitoring of alcohol consumption during driving	Advocate work place safety	Program evaluation

Strategies	Risk factors	Short term	Medium term	Long term
Care treatment and reha-bilitation services	Alcohol	Peer counseling services Develop a site for alcohol detoxification and rehabilitation	Develop 2-3 detoxification centers	Sustain the detoxification centers
	Tobacco	Establish Quit Line	Initiation of smoking cessation program	Sustaining smoking cessation program
	Physical activity and diet	Institute screening programs for NCDs Introduce cancer registry at the JDWNRH	Introduce cancer registry at referral hospitals	
Ensuring alternatives and choices		Provide schemes rural population to encourage production of fruits and vegetables at an affordable costs		
Strengthen-ing capacity of the stakeholders		Sensitization of the stakeholders. Training of health workers on NCD management, nutritional risk assessment and early identification of risks for children, pregnant mothers, and those at risk of chronic diseases. Training of urban and municipal planners on standard healthy designs	Training of the experts in sports medicine, dietary and physical activity counseling and providing brief interventions	
	Injury prevention	Establish Injury Prevention and Safety Promotion at the Ministry of Health		

Strategies	Risk factors	Short term	Medium term	Long term
Legislative and regulatory measures	Alcohol	Design the framework for alcohol control Draft Public Health Bill	Alcohol legislation and its implementation Implement Public Health Act	Regulate built environment that promotes physical activity
	Tobacco	Tobacco Control Act		
	Physical activity and diet	Develop food-based guidelines for labeling and compositions of food products	Legislate Physical activity	Legislate advertisement of harmful food Regulate Diet and nutrition
	Injury prevention and safety promotion	Develop Road Safety Strategic framework	Regulations on alcohol, Regulating Road Safety Act	
Surveillance and research	Alcohol	Baseline NCD risk factor surveys Institute sentinel surveillance for alcohol trading hours	NCD risk factor survey	NCD risk factor survey
	Tobacco	Institute sentinel surveillance smoking free zones and tobacco trade	Conduct survey for prevalence of tobacco use	Monitor trend of tobacco use in the general population
	Physical activity and diet	Institute multi-sectoral committee for food and diet research	Survey on built environment and physical activity in schools and urban settings	
	Injury prevention	Institute health facility-based injury surveillance system	Survey on road safety practices (drunk driving, seat belt)	
Partnership building	For all the risk factors	Coordination mechanism of the Emergency Medical Services (EMS) and Fire Department of the RBP Partnership with media National Convention on NCDs	Enhance community participation and focus on greater involvement of people with the NCD or those exposed to risk factors	Support NGO capacity building

Section 5: Coordination and partnerships

Roles and responsibilities have been identified in consultation meetings with stakeholder representatives and feed back from stakeholders has been incorporated. The following roles and responsibilities will be taken as a guide by stakeholders. *This is a dynamic document and any newer strategy that emerges in the process of implementation of programs will be considered and responsibilities of concerned stakeholder reviewed.*

5.1 Ministry of Health

The Ministry of Health is the key stakeholder in NCD prevention and control activities. The Ministry of Health will form a National Health Steering Committee (*PHC*) with representatives from policy makers of relevant line ministries. The MoH will aim:

1. to coordinate the control and prevention of NCDs in the country under the guidance of the PHC;
2. to ensure availability of financial and human resources for the NCD prevention program within the health sector, and
3. to to coordinate mass media and health promotion campaigns to support appropriate behavioral choices in the general and targeted populations.

5.2 Ministry of Education

The Ministry of Education will focus on the school and education system by:

1. introducing training on nutrition, physical activity, responsible alcohol use, harms of tobacco use, and injury prevention and safety promotion for all new teacher;.
2. including aspects of NCDs such as healthy eating, alcohol, tobacco, drugs, physical activity, unhealthy diet, in the life skills school curriculum in a “step up approach” beginning in appropriate level and continuing up to high school;
3. incorporating NCDs and their risk factors in the curriculum of NFE, and
4. providing a healthy and balanced diet in the mess of residential schools.

5.3 Ministry of Finance

The Ministry of Finance will:

1. support all Ministries through ensuring availability of funds to develop measures that enhance NCD prevention;
2. develop measures to discourage consumption of unhealthy food by restricting fast food trade licenses;
3. increase taxes on imported alcohol beverages, and
4. incremental taxation on alcohol content based products.

5.4 Ministry of Agriculture

The Ministry of Agriculture will:

1. formulate policies that enhance population health and food security;
2. develop policies and strategies to enhance production of fruit, vegetables and low-fat foods of animal origin and to ensure food security to the population especially to the poor and the marginalized sections of society;
3. develop policies and legislations that enhance good agricultural and animal husbandry practices to ensure quality and safety of fruits, vegetables and animal products produced in Bhutan;
4. encourage farmers to grow fruit and vegetables using organic fertilizers and to consume protective foods and enhance income generation through sale of such products;
5. strengthen regulation, inspection and certification measures related to production, sale and import of foods to ensure their quality and safety to protect consumers;
6. initiate setting of appropriate standards and maximum residue limits of pesticides, veterinary drugs, chemicals and toxins in fruits, vegetables and other foods, and
7. educate hoteliers and restaurant, canteen and food handlers about good hygiene, sanitation, safe food storage, food handling, healthy food and healthy eating habits.

5.5 Ministry of Economic Affairs

The Ministry of Economic Affairs will:

- develop policies that minimize alcohol use through supply and demand reduction in the Bhutanese community and ensure that such regulations are effectively enforced;
- strengthen capacity to conduct surveys in the sentinel sites to evaluate smoke free zones and, alcohol free timings;
- strengthen regulations, monitoring & enforcement of prohibition of sale of tobacco in the Bhutanese market;
- develop policies that encourage healthful habits in terms of food availability and consumption, and promoting physical activity;
- decrease taxations of food products and health promoting items and increase tax of food items that are health harming;
- set decremental limit for import of alcohol beverages;
- maintain transparent data on alcohol trade;
- limit the import of industrial alcohol;
- effective implementation of the rules pertaining to both home brewed and factory brewed alcohol, and
- ban alcohol and junk food advertising and marketing exercises including signage, display of point of sale materials and sponsorships.

5.6 Judiciary

Following establishment of policies that support NCD prevention and control, corresponding regulations must be developed. The Judiciary will:

- assist every stakeholder in transforming policies in to regulations, and
- simplify processes of regulation implementation so that such measures are easy to follow in the field.

5.7 Royal Bhutan Police

The Royal Bhutan Police will:

- strengthen policies that prohibit drunk driving and enforce helmet and seat belt use and ensure that these policies transform into rules that are adhered to;
- ensure that all rules that come under the preview of the police are fully and consistently implemented;
- support measures to minimize illegal availability and sale of health harming substances, and
- review and adjust age limit of alcohol use and monitor through ID card system e.g. monitoring dry day and timings for serving alcohol

5.8 Dratshang & other Religious Bodies

Dratshang & other Religious Bodies will:

- improve awareness of religious leaders about NCD prevention measures and include NCDs in the curricula of the dratshangs;
- ensure training of religious leaders, students and older monks on nutrition, physical activity, responsible alcohol use and smoking,
- develop policies to de-alcoholize major religious events and implement these policies, and
- encourage religious leaders to provide spiritual discourses that enhance positive emotional developments and alleviate stress, discourage the use of alcohol, tobacco and unhealthy diet and encourage physical activities.

5.9 Bhutan Information Communication Media Authority (BICMA)

Bhutan Information Communication Media Authority (BICMA) will:

- Ensure a ban of advertisements, including surrogate advertisements on alcohol and tobacco products and all unhealthy food;
- encourage the establishment of social and ethical code of responsibility of producers in dissemination of correct information to protect community interest and health;
- support media in effective information dissemination to reach all target populations;
- develop a policy to ensure that every media house produces a minimum number of health promotion articles or programmes every year, and
- develop community service announcements and ensure that they have a minimum rotation requirement and are broadcast accordingly.

5.10 Alcohol Industries/Projects (distillers & brewery)

Alcohol Industries/Projects (distillers & brewery) will:

- gradually decrease manufacture of alcohol, initially removing the less quality alcohol and ultimately, aiming to bring down production of alcohol in any form to a minimum acceptable level;
- label “Consumption of Alcohol is injurious to Health” on all alcohol products;
- label “standard drinks” guideline to promote safe drinking levels on packaging and at point of sale, and
- maintain transparent data on import, production and sale of alcohol.

5.11 Road Safety and Transport Authority

Road Safety and Transport Authority will:

- develop and implement policies against drunk driving and develop strong regulatory measures to wards them;
- strengthen policies on speed limits, safe driving, and availability of safe roads and safe limit of automobile density;
- support MoH through the Governing body in developing a congenial environment for physical activity especially in urban areas;
- highway patrolling (collaborate with RBP), and
- implement standards to control automobile pollution to reduce chronic respiratory illness,

5.12 Urban Planning

Urban planners will:

- support developing policies and standards that all new urban plans should have adequate facilities for physical and recreational activity;
- rectify old structures and plans to accommodate measures that enhance increased physical and recreational activity;
- implement walk-ability index to identify if the proposed built environment is conducive to walking;
- implement guidelines to encourage the development of sporting and recreation areas, and
- ensure the thoroughfares are designed for pedestrians first rather than cars particularly in urban areas.

5.13 Non Government Organizations

NGOs will:

- be encouraged to act as pressure groups and agents of change to improve community sensitivity towards a disciplined and healthy lifestyle, and
- be encouraged to participate in prevention, promotion and rehabilitation.

5.14 Ministry of Home and Cultural Affairs

Ministry of Home and Cultural Affairs will:

- support MoH and other relevant sectors in developing policies for NCD prevention and control;
- support MoH in implementing all activities at the dzongkhag and gewog level;
- support MoH in developing and implementing NCD prevention and risk reduction activities in the community, and
- strengthen vital registration and share such information with MoH.

5.15 National Statistical Bureau

The NSB will:

- support MoH in conducting NCD risk factor surveillance and other NCD related research;
- incorporate some NCD risk factor information in periodic national demographic/socio-economic survey, and
- develop social deprivation index to categorize the population into different risk groups for carrying out studies, research and developing interventions.

5.16 Thromdey

Thromdey will:

- support MoH in developing and implementing community based activities for NCD prevention and NCD risk reduction, and
- improve existing infrastructure for increased level of physical activities

5.17 Private Sectors and Corporations

- Various other organizations like BCCI, NPPF, RICB (life insurance) are also important stakeholders in NCD prevention and control. These sectors have specific roles especially in formulating NCD policies and discouraging initiatives that are health harming

5.18 Role of international organizations and developing partners

- The development organizations associated with health will take key role in advising, guiding, assisting and allocating financial and technical resources to the Ministry of Health in planning, developing and initiating the NCD program.

5.19 Bhutan Narcotic Control Agency (BNCA)

The BNCA will:

- Spearhead development and implement of alcohol use prevention strategy including preparation for Bhutan alcohol legislation process.

Section 6: Monitoring- evaluation frame work

The national policy and strategic framework for prevention and control of NCDs is to be implemented by the multi-sectoral partners. Therefore, effective mechanism for monitoring and evaluation must be in place in order to ensure accountability by all stakeholders in realizing the goals and objectives of prevention and control of NCDs. Timely monitoring and evaluation will be required to adjust, adapt and inform the future strategic directions and plans that are more responsive to the changing scenario of NCDs in Bhutan.

The *National Steering Committee* will oversee the monitoring and evaluation of the prevention and control of the NCDs. The stakeholders shall be responsible for monitoring the planned activity within sectors.

Evaluation will be conducted by an appointed group of evaluators. During evaluation, the respective stakeholders shall render full cooperation so that evaluation is conducted unhindered and the results of the evaluation are authentic.

A framework of indicators is specified in Section 7, which provides an indicative list for monitoring and evaluation indicators.

6.1 Monitoring:

Monitoring is the routine collection and analysis of information, usually done to assess whether inputs are being used as anticipated, how well activities are being implemented, and whether outputs are delivered as planned. Monitoring is usually an internal function of programmes. Therefore, sectoral monitoring of implementation will be carried out in line with the regular monitoring of the integrated sectoral plans.

Six monthly reports will be submitted to the Ministry of Health. The MoH will then generate a half yearly report on prevention and control of NCDs and submit it to the national steering committee.

The report will highlight achievements and challenges in the implementation of the various activities which the national steering committee shall in turn share with stakeholders, donor agencies and other appropriate organizations.

Stakeholders will participate in the annual review of the implementation of the NCD related activities which will be followed by the development of an annual work plan for the next fiscal year.

6.2 Evaluation

Evaluation of the prevention and control of NCDs will be coordinated by the Ministry of Health under the guidance of the National Steering Committee. Evaluation involves assessing the progress in implementation of the program through a detailed analysis of inputs, outputs and outcomes. Evaluation will be conducted through internal and external evaluations to assist decision makers and stakeholders to learn lessons about the implementation and modify approach where necessary.

6.2.1 Internal evaluation:

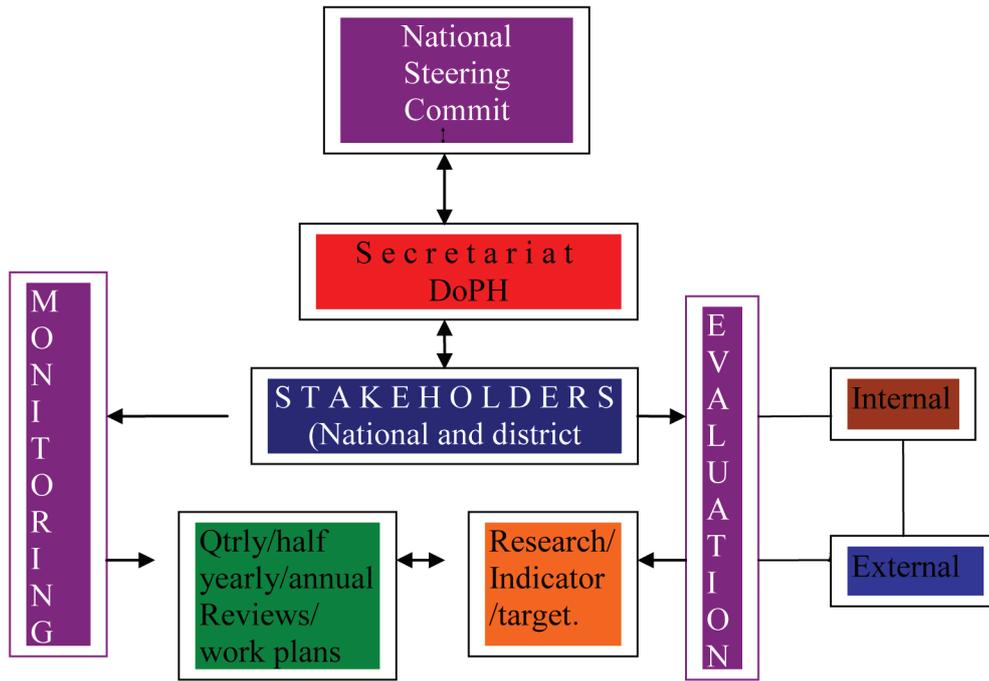
Internal evaluation for the prevention and control of NCDs will be done every two years by a team of appropriately experience people appointed by the national steering committee. Upon conducting a detailed evaluation, a report will be submitted to the national steering committee.

6.2.2 External evaluation:

External evaluation of prevention and control of NCDs will be done every five years. The evaluation will be done by a team consisting of representatives from the relevant donor agencies, independent consultants and national counterparts recruited by the national steering committee.

The report of the evaluation shall be submitted to the National Steering Committee and stakeholders following which joint consultations should be held to adjust the implementation approach of programs.

Figure 1: Monitoring and evaluation frame work



Section 7: Indicators

Indicators measure the change in conditions as a result of programs. They are an important part of the monitoring and evaluation system for tracking the measures of effectiveness and progress.

It is essential to monitor the progress of control and prevention of NCDs at three levels:

1. health status and outcomes;
2. determinants of health, and
3. health and other sector performance.

A detailed exercise is required to set unambiguous and specific indicators after establishing some of the baseline information on risk behaviors, and current services. Performance indicators in priority interventions in tobacco and alcohol use, improving physical activity, diet and reducing injury will be incorporated during the development of the detailed implementation action framework for each risk factor.

Apart from the two outcome indicators, each objective has a set of performance indicators. There are series of content or process indicators that will contribute to performance indicators for each objective.

7.1 Outcome indicators:

Outcomes of projects take time, so process indicators must be closely followed through to reach to the outcome indicators. The NCD prevention and control will aim towards two broad outcomes:

- reduction of the prevalence/ level of risk factors for NCDs and injury in urban and rural communities, and
- reduction of premature mortality due to NCDs.

The two outcomes are very broad for the NCD programs; progress towards they achievement will be measured trough a set of specific indicators mentioned below.

Table 5: Performance and content indicators:

<i>Objective 1: To raise awareness of non communicable disease and advocate their prevention and control</i>	
<p>Performance indicators:</p> <p>NCD messages developed, and disseminated with advocacy programs in the population groups</p> <p>Existence of national and district level action plans for advocacy about NCDs and their risk factors</p> <p>Number of meetings/discussions of policy makers and political leaders on prevention and control of NCDs</p>	<p>Content indicators:</p> <p>Availability of in-country NCD information materials for policy makers</p> <p>Policies on NCD risk reduction developed</p> <p>Availability of a sound action plan for the prevention of NCDs within the DoPH</p> <p>Number of Health workers trained on NCD prevention and management</p> <p>Availability of NCD educational materials for different categories of health workers</p> <p>NCDs included in curricula of school, dratsang, revised and upgraded in the curricula of the RIHS</p> <p>Different media groups have a specific number of programs on health which include NCDs.</p>
<i>Objective 2: To promote specific measures and interventions to reduce major risk factors and their determinents for NCDs namely: harmful use of alcohol, tobacco use, unhealthy diets and physical inactivity among the general population</i>	
<p>Performance indicators:</p> <p>Existence of Behavior Change Communication Plan for life style related disease risk factors</p> <p>Proportion of districts implementing measures to combat unhealthy diets</p> <p>Proportion of districts implementing measures to reduce physical inactivity</p> <p>Proportion of districts implementing measures and interventions to reduce tobacco use</p> <p>Proportion of districts implementing measures and interventions to reduce harmful effects of alcohol and the Sensible Drinking Programme</p>	<p>Content indicators:</p> <p>Number of training sessions and advocacy initiatives conducted on life style diseases of Hypertension, Diabetes Mellitus, and Obesity</p> <p>Number of training sessions and advocacy initiatives conducted on risk factors – alcohol, tobacco, unhealthy diets and physical inactivity</p>

Objective 3: To promote effective partnerships for prevention and control of non-communicable disease including injury prevention and safety promotion.

Performance indicators:	Content indicators:
<p>Existence of a national steering committee and local steering committees</p> <p>Number of stakeholders who have integrated NCD prevention and control annual plans within their sectors</p> <p>Community based NCD prevention program operational</p> <p>Proportion of bar owners observing dry day and ensuring smoking free zone</p> <p>Proportion of towns with an environment that has structures promoting physical activity</p> <p>Injury prevention framework operationalized at the national, dzongkhag and community levels</p>	<p>Tobacco and alcohol regulations are strictly enforced by relevant sectors</p> <p>NCD included in school curricula</p> <p>NCD included in NFE curricula</p> <p>Organic food available in the market</p> <p>Food inspectors in BAFRA are increased</p> <p>Number of alcohol manufacturing units decreased</p> <p>Volume of alcohol manufactured decreased</p> <p>Volume of beer imported decreased</p> <p>Volume of other alcohol imported decreased</p> <p>Changed alcohol use pattern</p>

Objective 4; To develop appropriate treatment and rehabilitation facilities with appropriate skilled human resources.

Performance indicators:	Content indicators:
<p>Establish linkages of in-country apex hospitals with center of excellence in NCDs within and outside the region and have exchange programs</p> <p>Proportion of people with NCD receiving standard medical treatment, linked to a rehabilitation service where necessary</p>	<p>Availability of facilities including laboratory set up and medicines in all health units concurrent with capacity of manpower</p> <p>Referral hospitals upgraded to centers of excellence</p> <p>Number of health facilities implementing NCD management modules</p> <p>Number of well trained health workers and basic amenities placed at the Basic Health Units for NCD prevention, promotion, rehabilitation and cure</p>

Objective 5: To scale up research for prevention and control of non-communicable disease and their risk factors.

Performance indicators:	Content indicators:
<p>Number of research publications in national and international journals on NCDs and their risk factors</p> <p>Number of fully financed research projects being under taken currently</p> <p>Baseline NCD risks factor surveillance in urban and rural Bhutanese population available.</p>	<p>NCD risk factor surveillance program within the NCD program</p> <p>Major NCD specific registries in major hospitals</p> <p>Population based cancer registry</p> <p>System of collecting reliable data base on mortality by cause</p> <p>Operational research activities in NCDs</p>

References

1. Ninth Plan Main Document (2002- 2005), Planning Commission, Royal Government of Bhutan.
2. Mortality report for 2002: Annual Health Bulletin, Department of Health Services, Ministry of health and Education, Thimphu, Bhutan, 2002.
3. The World Health Report 1997- *Tobacco or Health: A Global Status Report*. Geneva, World Health Organization, 1997.
4. Giri B.R. Management of Non communicable Diseases in Bhutan- A strategic Approach, Dissertation submitted to the Intercultural Open University, The Netherlands for the degree of Doctor of Philosophy, 2007.
5. World Health Organization. The world health report 2002. Reducing risks, promoting healthy life. Geneva:WHO, 2002.
6. World Health Organization. Non communicable diseases in South-East Asia region. A profile. New Delhi: WHO, 2002.
7. Seeta Giri, The Vital Link, Monpas and Their Forests, 2005
8. Murray CJL, Lopez AD, eds. *Global burden of disease*. Harvard, MA: Harvard School of Public Health, 1996. (Vol 1 of Global Burden of Disease and Injury series.)
9. World Health Organization. Health situation in the South-East Asia region 1998-2000. New Delhi: WHO, 2002.
10. International Diabetes Federation. *Diabetes atlas 2000*. Brussels: IDF, 2000.
11. World Health Organization Expert Consultation. Appropriate body-mass index for Asian populations and its implications for policy and intervention strategies. *Lancet* 2004; 363: 157-63.
12. Giri et.al: Non- communicable diseases in Bhutan: A myth or reality, Sowai Ngetshel, March-June 2001.
13. WHO, 2004a: Global status report on Alcohol 2004, World Health Organization, Geneva
14. WHO, 2004b: World report on knowledge for better health, World Health Organization, Geneva
15. Capacity Strengthening of Policy Makers and Programme Managers for Prevention and Control of Non-Communicable Diseases in South-East Asia Region
16. IECH Baseline/Impact study, May 2002
17. Performance of major industries by year; Mining and Information System, Department of Industries, Policy and Planning Division, June 2002
18. Prevalence of Cardiovascular Diseases Risk Factors among patients in the outpatient department of JDWNR Hospital: A descriptive cross sectional study, March 2004
19. Giri: Situation analysis of Alcohol use and some related harm in Bhutan. A report submitted to the RGOB, 2004
20. World Bank. World Development report 1993. Investing in Health. World Development Indicators. Oxford University press 1993
21. King Hilary, Ambert and Herman, Global Burden of Diabetes, 1995 to 2025, Prevalence, numerical estimates and projections.

22. Capacity Strengthening of Policy Makers and Program Managers for Prevention and Control of Non-communicable Diseases in South-East Asia Region: Determinants of Health and Role of Health Promotion: WHO- SEARO and WKC- Japan Collaborative Programme
23. Commission on Social Determinants of Health, towards a conceptual framework for analysis and action on the social determinants of health, 2005.
24. Capacity Strengthening of Policy Makers and Program Managers for Prevention and Control of Non-communicable Diseases in South-East Asia Region: Risk factors for NCDs: WHO- SEARO and WKC- Japan Collaborative Programme
25. Rose G. Strategy of Prevention: lessons from cardiovascular disease. Br Med J 1981; 282:1: 89- 96.
26. World Health Organization. Department of Non Communicable Disease Prevention and Health Promotion (NPH) www.who.int/hpr/nph/aboutus.htm#. Addressing Common Risk Factors.
27. National Policy and Strategy on Prevention & Control of Non communicable Diseases, Ministry of Health, Republic of Indonesia – 2003
28. Alcohol Use in Bhutan, Report for the Ministry of Health in Bhutan by Dr. Jeanette Henderson (October 2008).
29. Australia: The Healthiest Country By 2020- A discussion paper prepared by the National Preventative Health Task Force
30. Road Safety and Transport Act 1999- Royal Government of Bhutan
31. Health and Physical Education Curriculum Standards For Primary Schools- Ministry of Education, Bhutan
32. The Blue Print for an Active Australia, National Heart Foundation, 2008
33. Preventing Chronic Diseases- a vital investment, World Health Organization
34. Barbara O. Scheneeman, Phd. S6/December 2003/Suppl 2Vol 103 Numbers 12, Evolution of Dietary Guidelines,
35. Yoav Ben Sloamo, Diana Kuh, International Journal of Epidemiology 2002; 31; 285-293 A life course approach to chronic disease epidemiology: conceptual models, empirical challenges and interdisciplinary perspectives.
36. Harold D. Holder Phd, etal, JAMA November 8, 2000-Vol 284 No 18, 2341, Effect of community based interventions on High risk Drinking and Alcohol Related Injuries
37. Western Australia Health Promotion Strategic Framework 2007-2011
38. The Food Act of Bhutan, 2005
39. Bio-security policy 2008, Kingdom of Bhutan
40. Bhutan Information, Communications And Media Act 2006
41. Annual Health Bulletin 2008, Century of Progress in Health, A journey with the Kings
42. Defining sport and Physical Activity, A conceptual model, Australia, 2008
43. World Report on Violence, WHO 2002
44. World report on road traffic injury prevention, WHO , 2004
45. Preventing injuries and violence, A guide for Ministries of Health, WHO

Annexure 1: Anticipated list of detailed implementation frame work and Legislation that will reinforce this document:

Implementation framework:

Life Style Related Disease Program Frame work for the MoH
Bhutan Monitoring and Evaluation Frame work for NCDs
Bhutan Physical Activity Implementation Frame work
Bhutan Sensible Alcohol Drinking Frame work
Bhutan Media campaign strategy for NCDs
Bhutan Tobacco Control Implementation Frame work (existing)
Bhutan Road Safety Promotion Implementation Frame work
Bhutan media guidelines for advertisement of the food products by BICMA
Bhutan dietary guidelines
Bhutan Physical activity guidelines
Bhutan national standard for food safety, quality, ingredients, additives, adulterated food
Bhutan standard guidelines for urban planning

Provisional Legislations:

Bhutan Tobacco Act
Bhutan Alcohol Act
Bhutan Physical Activity Act
Bhutan Public Health Act
Bhutan Diet and Nutrition Act

Annexure 2: Glossary

Built environment: The phrase **built environment** refers to the man-made surroundings that provide the setting for [human activity](#), ranging from the large-scale civic surroundings to the personal places. The term is also now widely used to describe the interdisciplinary field of study which addresses the design, management and use of these man-made surroundings and their relationship to the human activities which take place within them. (Wikipedia)

Dys-glycemia: It is an imbalance in the sugar metabolism/energy production mechanisms of the body

Disease management: is defined as “a system of coordinated health care interventions and communications for populations with conditions in which patient self-care efforts are significant (Wikipedia). Disease management includes acute care, treatment and rehabilitation of the patient to the families and society.

Injury: Physical or mental harm that is inflicted intentionally or unintentionally to others or the self. Intentional injuries include self inflicted harm, harm as result of violence and unintentional injuries are road traffic accidents and work place injuries.

Hyperlipedemia: Hyperlipidemia, hyperlipoproteinemia or dyslipidemia is the presence of raised or abnormal levels of lipids and/or lipoproteins in the blood. (Wikipedia)

Life course approach: The **Life course approach** is used to explain variations in disease incidence, that lifestyle risks to developing chronic diseases cannot be attributable solely to either early life or adult experiences but instead operate cumulatively throughout life. (Kuh and Ben-Shlomo, 1997)-Wikipedia.

Life style related disease: Factors in lifestyle, diet, alcohol consumption, tobacco use and physical inactivity and environment are thought to influence the susceptibility to common chronic diseases namely diabetes, hypertension, ischemic heart disease, stroke, chronic respiratory diseases, and asthma.

Modifiable risk factor: Diet, tobacco use, alcohol consumption and physical activity are risk factors that contribute to risk of developing NCDs. These risk factors can be altered through adoption of safer practices of consuming proper diets, abstaining or reducing consumption of alcohol or tobacco and increasing physical activity to prevent life style related diseases.

Non-communicable disease: NCD is another terminology used for the groups of life style related diseases. The NCDs are also referred as **chronic diseases**.

Obesity: It is condition in which excess body fat has accumulated to such an extent that health may be negatively affected. It is commonly defined as a body mass index (BMI) of 30 kg/m² or higher.

Physical activity: The definition of physical activity provides an expansive scope which can include almost any kind activity undertaken in many domains-leisure, work, transportation, personal care and household activities. In short, physical activity is any bodily movements performed by skeletal muscles that result in an increase energy expenditure. (Defining sport and Physical Activity, A conceptual model, Australia, 2008)

Primary prevention: Primary prevention looks at prevention of developing the disease. Most of the health promotion strategies aim at primary prevention.

Screening: Screening is intended to identify disease at an early stage. It is a strategy used at the population level to identify disease among individuals who do not have clinical symptoms and signs. As a result of the screening program, it is hoped that a disease is diagnosed early and mortality and morbidity as result of the disease is minimized.

