



Bhutan's Progress: Midway to the Millennium Development Goals

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FOREWORD

Bhutan along with 189 other member states adopted the United Nations Millennium Declaration in 2000, committing to a new global partnership to reduce extreme poverty and setting out a series of time-bound targets with a deadline of 2015 that are known as the Millennium Development Goals (MDGs). The draft Tenth Five Year Plan of Bhutan reflects a strong MDG orientation with poverty reduction as the key objective and the MDGs have been advocated effectively to mobilize social support for the goals and promote wide national ownership. This publication, *Bhutan's Progress: Midway to the Millennium Development Goals*, highlights Bhutan's achievements of the MDGs and the targets up to 2008, challenges in achieving some of the targets and for the first time, analyses the relationship between Bhutan's development philosophy of Gross National Happiness (GNH) and the MDGs.

The Report reveals that Bhutan has made tremendous progress in achieving MDGs by 2008 and is steadily progressing to meet all the targets by 2015. A number of targets such as reducing malnutrition among children and halving those without access to safe drinking water and improved sanitation facilities have already been realised. Further, as a result of successful interventions of the Royal Government, reaching the target of reducing the proportion of people living below the poverty line by half is not far away. The report also reveals that diseases such as malaria and tuberculosis have been successfully controlled.

The Report not only provides the opportunity of stock taking the progress on MDGs, but also provides a critical review and understanding of challenges pertaining to achieving the goals and maintaining them for future generations.

In undertaking the in-depth review on complementarities between GNH and MDGs, it successfully manages to demonstrate the close relationship between MDGs and the various GNH indicators. This comparison also highlights the exemplary efforts of the Royal Government to work on targets beyond the MDGs.

We are confident that with the continued support and efforts of both the policy makers, and individual officers in the Royal Government and development partners, Bhutan will maintain the steady progress towards achieving the MDGs and the overall happiness of the Bhutanese people.

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AIDS	Acquired Immune Deficiency Syndrome
ARI	Acute Respiratory Infection
B2C2	Bhutan Biodiversity Conservation Complex
BDI	Bhutan Development Index
BLSS	Bhutan Living Standards Survey
BT FEC	Bhutan Trust Fund for Environmental Conservation
CCM	Coordination Committee for Council of Ministers
CFC	Chloro Fluoro Carbon
CO ₂	Carbon Dioxide
CPR	Contraceptive Prevalence Rate
EIA	Environment Impact Assessment
EmOC	Emergency Obstetric Care
EPI	Expanded Programme of Immunization
FYP	Five Year Plan
GDP	Gross Domestic Product
GHG	Green House Gases
GNH	Gross National Happiness
GPER	Gross Primary Enrollment Rate
HD	Human Development
HDI	Human Development Index
HH	Household
HIV	Human Immunodeficiency Virus
IMR	Infant Mortality Rate
HPI	Human Poverty Index
ITBN	Insecticide Treated Bed Nets
Kcal	Kilo Calories
MCH	Maternal and Child Health
MDG	Millennium Development Goals
MDT	Millennium Development Targets
MoE	Ministry of Education
MoH	Ministry of Health
MMR	Maternal Mortality Rate
NMCP	National Malaria Control Programme
NPER	Net Primary Enrollment Rate
ODS	Ozone Depleting Substances
PAR	Poverty Analysis Report
PHCB	Population and Housing Census of Bhutan
PHED	Public Health Engineering Division
PLWHA	People Living with HIV/AIDS
PPP	Purchasing Power Parity
RBM	Roll Back Malaria
RGoB	Royal Government of Bhutan
TB	Tuberculosis
U-5MR	Under-Five Mortality Rate
UN	United Nations
VAM	Vulnerability Analysis and Mapping



EXECUTIVE SUMMARY

BHUTAN along with other member states signed the UN Millennium Declaration in 2000 that outlined a shared vision for the new century based on the fundamental values of freedom, equality, solidarity, tolerance, respect for nature and shared responsibility. The declaration focuses on overcoming critical development challenges facing humanity at the start of the millennium and formulates the required responses through the instrument of the MDGs. The MDGs outline a global consensus on what constitutes the minimum core of a sound development course of action but were never intended as a final and exhaustive one-size-fits-all development approach. As such, the MDGs lay the normative ground for global development partnerships and play an important role in structuring development around key issues, enabling a more streamlined and results-oriented approach to human development.

The relative ease with which the MDGs have found their place within the national development framework in Bhutan can be attributed to their harmony and close compatibility with Gross National Happiness (GNH), the country's development paradigm and vision. Chapter 1 on GNH and the MDGs: Complementarities explores the conceptual links and synergies between GNH and the MDGs. The section highlights that the core pillars of GNH, namely sustainable and equitable socio-economic development, conservation of the environment, preservation and promotion of cultural heritage and good governance are critical considerations for the actualization of the MDGs and that the latter also contributes in a wholly positive way to the long term realization of GNH. The various spheres of GNH and their specific indicators and indices under consideration are also seen to have many common priorities and strong synergies with the MDG targets and indicators. There is moreover, the strong affirmation illustrated by various instances that even in areas such as cultural considerations that do not readily reveal apparent linkages, in actuality, have powerful synergies that offer considerable scope and opportunities for accelerating progress towards the MDGs.

Chapter 2 provides an account of the Royal Government's committed efforts to integrate the MDGs into the national planning framework and presents an update of the status of MDG progress in Bhutan covering the period up to 2007. The chapter articulates that the MDGs were advocated effectively to mobilize social support for the goals and promote national ownership and that this was followed up with concrete steps to integrate the goals into the planning process with the Tenth Five Year Plan reflecting a strong MDG orientation with poverty reduction as the key objective. The chapter further highlights that Bhutan also undertook a detailed MDG needs assessment and costing exercise to further facilitate mainstreaming the MDGs into the Tenth Five Year Plan through aligning national budgetary outlays with resource requirements for meeting the MDGs.

On the update of the MDG progress in Bhutan, Chapter 2 highlights that Bhutan has made significant and sustained progress in achieving the MDGs and is potentially



on track on all of the MDGs. The chapter mentions the notable successes the country has had in enhancing access to improved drinking water and sanitation, in protecting and managing the country's natural capital, and in ensuring improved basic health care and equitable primary education. It also reports that several targets such as reducing malnutrition among children and halving those without access to safe drinking water and improved sanitation have already been realized; and that the country is close to realizing the target of reducing the number of poor by half and has had exceptional success in arresting the disease burdens of malaria and tuberculosis.

Chapter 2 also identifies certain Millennium Development Targets (MDTs) that require attention such as the recent increase in food poverty, gender disparities in tertiary education, low representation of women in national parliament and their weak participation in national decision making processes, inadequate levels of skilled birth attendance that affect maternal mortality, low contraceptive prevalence rates, rising number of HIV/AIDS cases and rising youth unemployment. In addition, the chapter identifies several challenges and constraints such as spatial disparities on MDG progress across and within regions, pressing resource needs to finance MDG interventions and the significant impact of climate change.

The first MDG on the eradication of extreme poverty and hunger is treated in Chapter 3. The chapter highlights that Bhutan's progress in reducing poverty by more than a third from 36.3% in 2000 to 23.2% in 2007 keeps it well on track to achieve the MDG. This has been matched by reductions in human poverty as measured by the HPI-1 index which declined by 19 percent over the same period largely on account on improvements in enhancing access to improved drinking water sources and reducing child malnutrition. While the chapter reflects highly satisfactory progress towards reducing income and human poverty, there are concerns over the considerable spatial disparities in income and human poverty levels across and within regions. On the second MDT, the report reflects that Bhutan is on track toward reducing hunger on the basis of halving the level of malnutrition among under-five children and that food poverty assessed on the basis of proportion of population living under a minimum level of calorie intake affects only 5.9% of the population even though this has increased from 3.8% since 2003.

Chapter 4 focuses on the Social MDGs covering goals and targets pertaining to health and education. For the second MDG of achieving universal primary education, Bhutan has rapidly scaled up its gross and net enrollment for primary education and improved its primary school completion rates that will see it comfortably achieve the goal before 2015. The report also reflects virtual gender equality in primary enrollment levels. On the particular challenges that Bhutan faces in furthering gains in primary education, the report reflects issues pertaining to expanding access, improving the quality of education and resource needs.



The sub-section on Health MDGs pertains to reducing child mortality, improving maternal health and arresting the public health burden of major diseases. Bhutan remains on track to achieve the targets relating to reducing by one third the infant and under-five mortality rates and maintaining immunization coverage at above 90%. The report reflects that recorded reductions in child and maternal mortality have been exceptional but that levels are still relatively high and need to be further scaled back. In particular, the low levels of skilled birth attendance at 56% is regarded to be a critical challenge that will need to be addressed along with effective promotion of institutional delivery to further reduce maternal mortality rates in the country. While the chapter highlights the highly notable achievements Bhutan has had in mitigating the disease burden of malaria and tuberculosis, there are serious concerns about the rising spread of HIV/AIDS cases even as the incidence remains below 0.01%.

Chapter 5 pertains to the MDG for Environmental Sustainability. The report reflects that Bhutan continues to maintain a high level of forest cover, an important indicator for biodiversity conservation. The country continues to maintain 29% of the total land area as protected areas. Given Bhutan's dense cover of forests which act as effective carbon sinks Bhutan has a small carbon footprint and a relatively clean energy matrix. The chapter reflects that Bhutan is also an early achiever with regard to its targets for the provisioning of water and sanitation coverage in the country with levels envisaged to approach near universal coverage levels by 2015. However, the section also highlights that the repair, maintenance and rehabilitation of a very large number of water and sanitation schemes could potentially diminish the coverage gains achieved. Future expansion of rural water and sanitation schemes must take into consideration the allocation of resources and planned activities for their upkeep without which their long term sustainability and functionality is at stake.

The chapter points out to significant environmental sustainability challenges even as many of the MDGs stand accomplished, a situation the report reflects will become increasingly more difficult with rapid economic development and given that Bhutan is hugely dependent on natural resources for sustaining its economy and the livelihoods of a majority of its people. Some of the key challenges outlined include issues pertaining to land degradation, potential biodiversity habitat loss, high fuel wood consumption, environmental impact of road construction, mitigating wildlife and human conflict, maintenance and rehabilitation of existing rural water and sanitation schemes, waste management and vulnerability to climate change impacts. The chapter also indicates that at the heart of these challenges lie the urgency of securing long term sustainable financing arrangements and capacity building without which past gains on the environmental front could be severely compromised.







THE country's socio-economic development has long been guided by the overarching development concept of Gross National Happiness (GNH) that was first articulated by the fourth king His Majesty Jigme Singye Wangchuck. GNH seeks to maximize the happiness of all Bhutanese to enable them to achieve their full and innate potential as human beings and forges an alternative path that goes beyond the conventional income-based measures of development. The GNH approach seeks to integrate the basic human aspiration of happiness and the largely intangible and non-material aspects of spiritual and cultural needs of people into the development equation. Reflecting the importance of GNH as a public good, the promotion of enabling conditions for GNH has been enshrined as an important principle of state policy under Article 9 of the Constitution.

GNH as a public good in Bhutan has been broadly pursued through the four priority strategic areas of sustainable and equitable socio-economic development, environmental conservation, preservation and promotion of culture and good governance. More recently, on the basis of the recommendations emanating from the Good Governance Plus exercise undertaken by the Royal Government in 2005, efforts have been undertaken to establish relevant indicators for GNH and construct an index capturing its essence. This GNH index is intended to serve as an analytical evaluation tool to help track progress towards the country's long term national

goals [See Box 1.1].

While Bhutan pursues its own unique path to sustainable development, the country also fully subscribes to various international development goals such as the Millennium Development Goals (MDGs). The MDGs place poverty reduction and human well being at the centre of global development objectives. They do not merely articulate general commitments but provide specific benchmarks in terms of targets to be achieved by 2015 towards realizing the vision of the Millennium Declaration made at the UN Millennium Summit in 2000. The Millennium Declaration is guided by the universal values of freedom, equality, tolerance, respect for nature and shared responsibilities, ideals that also inspire and are deeply integral to the GNH value system even as the latter elevates happiness as the paramount and desirable outcome of these universal values. As such, the development vision and concept of GNH and the Millennium Development Goals fundamentally share common motivation and ideals.

In as much as the MDGs serve as a practical global road map for the Millennium Declaration, in Bhutan the MDGs are also viewed as a highly relevant development strategic framework contributing to the achievement of GNH and the nation's long term development goals. There is a clear recognition by the political leadership in Bhutan that the presence of poverty, ignorance, ill health and abject conditions of human well

1

GNH AND THE MDGs:

COMPLEMENTARITIES



BOX 1.1**Assessing Well Being and Happiness in Bhutan: The GNH Index****Descend with the view and ascend with action.****Guru Rimpoche**

The issue of measuring well being and happiness has been debated widely in the country with strong views on either side of the benefits and relevance of such an effort. There were those who argued that the GNH concept was an extremely complex and multi-dimensional one with highly subjective and qualitative aspects that would not lend itself readily to measurement. Others espoused the view that GNH was better left as an overarching development concept broadly guiding development efforts and that attempts to measure it could possibly diminish or devalue the lofty ideal. On the other hand, there were many who felt that development efforts in the country would be better served by having a tangible measure with which to assess national progress towards this ideal. The latter argument also acknowledged that while any such GNH measure could never capture the full diversity, significance and complexity of GNH, developing an appropriate quantitative measure would help simplify a highly complex reality and operationalize it more effectively.

A critical recommendation of the Good Governance Plus exercise in 2005 was the imperative to develop a Bhutan specific development measure, the Bhutan Development Index (BDI). Subsequently, the Centre for Bhutan Studies was entrusted with the task of developing and proposing an appropriate development measure to capture the essence of GNH and facilitate the tracking of its progress. This GNH index, also alternatively termed the Bhutan Development Index (BDI), is expected to allow for a systematic assessment of the positive or adverse impact of development policies and projects on GNH. It will provide the Royal Government an analytical tool to review and fine-tune policies and design or screen development projects appropriately to engender a GNH friendly development context. Additionally, as envisaged under the GG Plus Report 2005, the measure would also help the Bhutanese public evaluate governance performance.

The nine domains that the GNH index covers relate to the areas of psychological well being, cultural diversity and resilience, education, health, time use, good governance, community vitality, ecological diversity and resilience and economic living standards. These areas and their various indicators/indices were determined based on a pilot survey and a National GNH Survey conducted in 2006 and 2008. The composite GNH index is to be aggregated from various indices and indicators from among the nine domains with appropriate weightages provided. These indices and indicators – comprising at present of 48 indicators in total - include a wide range of factors with a significant bearing on individual and collective happiness. These include the mental health index, family relationship index, financial security indicator, healthy days per month indicator, body mass index, education level indicator, local air and water pollution indicators, house ownership indicator, human rights indicator, government performance index, etc, to name a few. Most of these indicators other than those concerned with some of the more intangible aspects of human well being, have strong association with the MDGs, particularly for the poverty, social (such as education, child and maternal mortality and gender) and environmental sustainability goals.

Given the nature of human happiness and well being, the evolution of GNH policies and strategies and the index must necessarily follow a dynamic, inclusive and open ended process that takes into consideration the relative importance of different variables and factors of happiness and well being that may or may not be relevant to Bhutanese society at a particular point of time. Frequent consultations with the wider Bhutanese public at large and periodic surveys will be highly necessary to this end.



being are deeply inimical to human happiness and improvements in the former areas must necessarily constitute the first steps towards ensuring GNH. As Bhutan today still remains a least developed country with poverty afflicting about one fourth of its population, there is an even greater urgency to secure and possibly surpass

Table 1.2
GNH and MDGs – Synergistic Linkages

Key GNH Pillars and Domains of GNH	Corresponding MDGs
The Four Pillars of GNH	
1. Sustainable & Equitable Socio-Economic Development	Encompasses virtually all of the MDGs but particularly relevant to Goal 1 pertaining to eradication of extreme poverty and hunger
2. Conservation of Environment	Goal 7 pertaining to environmental sustainability
3. Preservation and promotion of Culture	No direct corresponding MDGs but strong linkages with environmental sustainability, health and education MDGs
4. Good Governance	Good governance widely recognized to be critical for achievement of MDGs
The GNH Domains	
Education	Goals 2 and 3 pertaining to achieving universal primary education and promoting gender equality
Health	Goals 4, 5 and 6 pertaining to reducing child mortality, improving maternal health and combating HIV/AIDS, malaria and other diseases
Economic Standard of Living	Goal 1 pertaining to eradicating extreme poverty and hunger and Goal 7 for targets relating to household access to secure tenure
Ecological Diversity and Resilience	Goal 7 pertaining to environmental sustainability and Goal 1 pertaining to reducing extreme poverty and hunger
Time Use	Goal 3 pertaining to gender equality and Goal 8 for targets pertaining to youth unemployment
Psychological Well Being	Various psychological well being factors identified such as income security, health & education, basic needs (water and sanitation) are linked to several MDG targets
Good Governance	Deemed critical for achieving the MDGs
Cultural Diversity and Resilience	No corresponding MDGs or targets but strong linkages with environmental sustainability, health and education MDGs
Community Vitality	No corresponding MDGs



the MDGs and significantly advance human development outcomes for meaningful progress towards realizing the ideals of GNH.

Beyond their conceptual compatibility and harmony, a closer scrutiny of the MDGs and the various GNH indices and indicators being considered also reveal strong synergies. Table 1.2 provides an overview of these linkages and the following

sections highlight the areas of mutual synergies.

In relation to the broad GNH framework, the first and second pillars of GNH namely sustainable and equitable socio-economic development and conservation of environment are those areas within which all of the MDGs directly relate to. There appears to be less of a direct connection between the other two pillars of GNH and the MDGs and these aspects are explored in greater detail in the following sections.

While good governance is universally recognized to be key to achieving the MDG targets, the MDGs do not have any specific governance goal, target or indicator. Many countries have expressed the need to incorporate a Governance MDG. Good governance within the MDG context is seen to be a strategic input rather than a goal in itself. This contrasts with the GNH framework which sees good governance both as a means and a desirable outcome that enhances the prospect for GNH.

1.2 Good Governance and the MDGs

While there is no explicit corresponding MDG or MDT for good governance¹, it is nevertheless deemed to be highly critical for the realization of the MDGs. The Millennium Declaration clearly states that success in meeting the objectives

¹ Even though the millennium Declaration clearly recognized the importance of good governance in achieving MDGs, it is not included as there were no proper indicators at country level to measure the progress in an objective manner.

of eliminating poverty and creating an environment conducive to sustainable development depends, inter alia, on good governance within each country. Good governance here is defined within the context of the underlying principles of participation, rule of law, transparency, responsiveness to public will and needs, consensus orientation, equity and inclusiveness, effectiveness and efficiency, and accountability.

The UN Millennium Project also stresses that the achievement of the MDGs will require not just investments for public infrastructure and human capital, but significant investments and efforts in improving governance and enhancing its quality. There is a widely shared perspective that the failure to improve governance in countries could well jeopardize the achievement of the MDGs even with considerable investments and efforts being channeled into various MDG interventions.

Within the Bhutanese development context too, good governance is regarded to be highly pertinent. Reflecting its importance within the national development framework, it is one of the four pillars of GNH. Promoted through transparency, efficiency and accountability in the political processes and administration of the country, good governance is viewed by the Royal Government as providing an enabling environment that is immensely critical for sustainable and equitable socio-economic development and the progressive realization of GNH. As a core



aspect of GNH, it is both a development objective in itself and also serves as a strategic means to achieving various other development goals that contribute to GNH.

This steadfast commitment to good governance in Bhutan has been mirrored by historic changes in the political governance structures. Bhutan in 2008 emerged as the world's youngest democracy making a highly successful and peaceful transition from a monarchical system of government. The monarchy in Bhutan has provided dynamic and enlightened leadership for the last one hundred years, including actively leading and instituting the democratization processes culminating in Bhutan's transition to a parliamentary democracy. Rooting democracy in Bhutan effectively will constitute a significant opportunity to further strengthen good governance in the country and also sustain the people's faith and belief in and ownership of the new political system and its processes.

Recognizing the importance of good governance, the Royal Government in its MDG Needs Assessment and Costing exercise undertaken in 2007 has nevertheless estimated the needs and costs for improving good governance in Bhutan through ensuring adequate resourcing and staffing of the three branches of government, including various constitutional bodies such as the Anti-Corruption Commission, Election Commission of Bhutan and the Office of the Attorney General. These important initiatives are deemed highly

Box 1.3

The further erosion of our traditional perception and understanding of our place in natural systems carries potentially disturbing consequences for the environment. It may be a shorter step than we care to imagine, from seeing ourselves as part of a living world to seeing it as a source of wealth and as a resource base to be exploited for immediate gain – a step that would undermine the whole ethos and ethics of conservation. We must be ever conscious of this danger. It can only be addressed by deliberate efforts to keep alive traditional attitudes and values. This establishes a clear link between environmental conservation and the conservation of our cultural heritage.

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Prosperity and Happiness

significant towards ensuring the success of democracy in Bhutan.

More specifically, in the context of the GNH index being developed, good governance constitutes an important domain. The various good governance indices and indicators that have been proposed are the Government Performance Index (GPI), the Human Rights Index (HRI) and the Trust in Institutions Indicator. The GPI will be further comprised of several indicators that evaluates government performance with regard to creating jobs; reducing inequality; providing and improving social services like health, education, safe sanitation and clean drinking water; and ensuring basic infrastructure such as farm and feeder roads and electricity. Many of these sub indicators clearly are directly related to the MDG targets reflecting that good governance will be adjudged to a certain extent on



performance for meeting or exceeding MDG targets at the national level.

1.3 Culture and MDGs

A very critical dimension of GNH relates to culture which does not have a corresponding MDG or target. However, there are relevant synergies between the two, particularly in a traditional society like Bhutan where cultural norms deeply pervade every aspect of daily life. The relevance of culture to MDG outcomes in Bhutan and even to the world at large cannot be understated. Harnessing cultural resources for the achievement of the MDGs thus presents a special opportunity to accelerate progress towards the goals and place it on a truly sustainable footing. Some specific examples illustrating the point are highlighted in the following.

For instance, there are strong cultural factors that can be linked to the weak progress on certain MDG targets in Bhutan. The Royal Government has attached a high priority to institutional delivery to reduce maternal mortality. Despite numerous interventions to promote institutional delivery including making delivery rooms in health institutions more women-friendly and appealing, skilled birth attendance is very low (below 60%) with most women in rural Bhutan still preferring to deliver at home. This preference has been clearly linked to cultural norms and a traditional reliance on untrained birth attendants. Additionally, the challenge of health delivery in Bhutan is not only about

ensuring access to health services but equally about their effective utilization. The latter is often compromised by cultural attitudes and behavioral patterns that favor traditional rituals and herbal remedies. There are also many cultural attitudes that encourage the concealment of certain diseases (eg. leprosy, mental disability), the disclosure of which is seen to be highly stigmatic, possibly even leading to social exclusion. Overcoming cultural and awareness barriers thus pose significant challenges that the country must effectively deal with in improving all aspects of health care and strengthening efforts towards reducing human mortality and morbidity, the sustainable solutions for which may well lie within the Bhutanese cultural context.

Access to tertiary education for females, an MDG target, remains an area of concern. While there are virtually no gender gaps for enrollment at the primary and secondary levels, at tertiary levels, males make up around twice the number of females enrolled. This weak transition of girls from secondary to tertiary education resulting in a significant gender gap at the tertiary level is often attributed to socio-cultural stereotyping of gender roles in Bhutanese society.

Given the strong influence that culture has on health service utilization and outcomes, there are significant opportunities that cultural resources and attributes provide that can be harnessed for more effective health utilization and advocacy. A notable

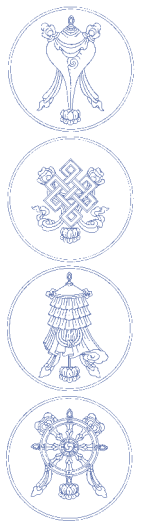


example of this is the *Je Khenpo* and monk body's unequivocal endorsement of the book "*A Buddhist Perspective on Family Planning*" that was published in 1996 with the intention to help promote reproductive health management and planning. His Majesty the Fourth King's profound appeal to the Bhutanese public to actualize the Buddhist values of compassion for all sentient beings through practicing heartfelt empathy for those afflicted and living with HIV/AIDS is another deeply touching example. The continued promotion of traditional medicine or *Sowa Rigpa* alongside modern allopathic treatment is also expected to have highly positive outcomes for achieving the health MDGs.

Moreover, Bhutan's cultural resources represent a major opportunity for employment creation and poverty reduction such as through cultural and heritage tourism and handicraft production. The promotion of a wide range of cultural industries has

accordingly been given a high priority by the Royal Government which is not only expected to generate substantial social and economic returns but also contribute to keep the country's rich cultural heritage alive and vibrant.

Bhutanese culture has played a vital role and continues to be highly relevant in helping protect and conserve the country's environment, a cross-cutting and crucial MDG. The natural environment has always enjoyed a highly sacred standing in the local belief systems and is imbued with a living mysticism that accords deep sanctity for all forms of life. This cultural ethos and ethic has been and remains a potent force for maintaining environmental sustainability. As the Bhutan Vision 2020 document cautions [See Box 1.3], the further erosion of traditional value and belief systems could negatively impact on the environment through a weakening of social commitment to environmental sustainability.





BHUTAN along with 189 other member states adopted the Millennium Declaration in 2000 and in doing so committed itself whole heartedly to the achievement of the MDGs. The MDG advocacy and national institutionalization processes started in 2001 and gathered momentum after 2002, the year that Bhutan established a National MDG Task Force (NTF) comprising of various stakeholders from the civil society, the media and the private sector. The NTF was overseen by a high level advisory committee and was chaired in the initial years by the Secretary of the Ministry of Finance, Dasho Yangki T. Wangchuck and subsequently by the Planning Commission Secretary, Mr. Lam Dorji. Under the guidance of the NTF and a technical working group, the first Bhutan MDG Progress Report was prepared in 2002 that provided an initial stock taking of national progress towards the MDGs. The national MDG report varied slightly on reporting certain MDG global targets and associated indicators to be relevant within the national context and the report's primary purpose was to raise awareness, strengthen advocacy, forge partnerships and renew political commitment towards achieving the MDGs. The report reviewed and endorsed by the Coordination Committee of the Council of Ministers (CCM) was officially released by the Prime Minister, Lyonpo Kinzang Dorji. The MDG Progress Report 2002 was also one of the key background documents distributed by the Royal Government at its Eighth Round Table Meeting in Geneva in February, 2003. A second MDG Progress Report

was published and released with wide national publicity in 2005.

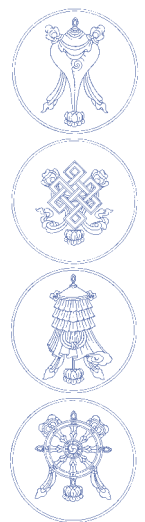
2.2 Public information and Advocacy for Social Mobilization on the MDGs

Apart from reporting on and implementing the MDGs, the Royal Government with active support from the UN system, initiated a strong MDG advocacy campaign to enhance awareness and sensitize the Bhutanese public and mobilize social support for the goals. Among the initial activities undertaken included preparing and distributing summaries and fact sheets in the national language, Dzongkha, to all members of parliament to enhance their understanding of and support for the MDGs. This was followed up by informative write-ups on the MDG goals in the national newspaper in three



2

INTEGRATING THE MDGs INTO THE NATIONAL PLANNING FRAMEWORK AND STATUS OF MDG PROGRESS



languages over a period of nine weeks and an MDG online campaign. In 2003, an MDG song "*Lotong Gongpheh*" sung as a duet by two of the country's most popular singers became a national hit on Bhutanese television and radio, an event that had a significant impact in popularizing the MDGs. A video on the MDGs incorporating the essence of the goals and their significances was also produced and used widely by the broadcast media in Bhutan. Additionally, various sports and cultural events such as basketball tournaments, fun runs and school quiz competitions with appropriate MDG themes were organized for Bhutanese youth, an important target group for MDG advocacy. These advocacy campaigns have been helpful in promoting and popularizing the MDGs in Bhutanese society.



2.3 Integrating the MDGs into the National Planning Framework

While the initial years following the Millennium Summit were largely focused on advocacy and monitoring/reporting on the MDGs, national efforts over the last few years have been directed at aligning and integrating the MDGs into the national development planning framework. This integration has been greatly facilitated by the consonance of national development priorities under the GNH framework and the MDGs as highlighted earlier under the section on the common motivation and powerful synergies between GNH and the MDGs.

Bhutan's long term development vision and objectives have been implemented through the five year plans with the country starting the Tenth Five Year Plan cycle in 2008. The draft Tenth Five Year Plan (2008-2013) has a strong MDG and pro-poor orientation with poverty reduction as the core theme and development objective. While in the past the Royal Government had prioritized and addressed a range of poverty concerns broadly through an expansion of social services, rural development and rural income generation activities, the draft Tenth Five Year Plan addresses this directly. The Plan establishes clear poverty reduction targets and mainstreams poverty alleviation as a cross-cutting theme with all sectors integrating this objective into their sector specific plan perspectives and programmes. This clearly reflects the strong commitment of the Royal Government to align the MDGs with national priorities and the development planning framework.

The draft Tenth Plan moreover will be implementing specific and well targeted poverty reduction interventions for the first time. The Plan also incorporates a new results based planning framework to ensure that development planning and budgeting mechanisms are more dynamic, efficient, responsive and result-oriented. As with an MDG based planning approach, final outcomes are required to be clearly defined in terms of quantifiable goals and targets within a five-year context. As such, the Plan's objectives are not merely aspirational

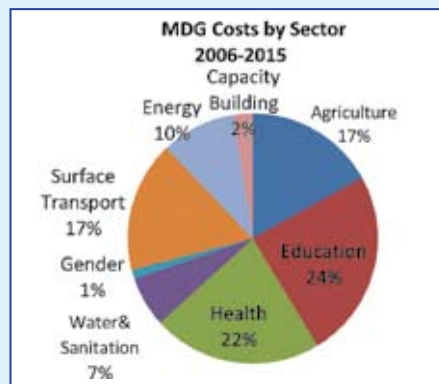
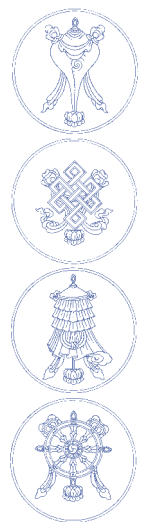
BOX 2.1

**THE MDG NEEDS ASSESSMENT AND COSTING REPORT
(2006-2015)**

Bhutan has aligned its national development policy framework with the MDGs and included them explicitly in the Tenth Five Year Plan with its core theme and objective of Poverty Reduction. While there is full national commitment toward meeting the MDGs through necessary policy orientation, this also requires adequate resourcing and budget outlays. Needless to say, financial forecasts are essential to plan resource allocation, identify available resources and project resource gaps. The Millennium Declaration itself strongly recognized financing for development as a key component for achieving the development targets. As a pragmatic first step towards mobilizing both internal and external resources to meet the MDGs, the Royal Government initiated a comprehensive needs assessment and costing initiative through the assistance of the UNDP led UN Regional MDG Initiative roll-out programme. This was a major and highly inclusive exercise that engaged an extremely wide range of stakeholders through numerous workshops, consultations and meetings over two years between 2006 and 2007. The outcome of this hugely important exercise is contained in the MDG Needs Assessment and Costing Report (2006-2015), the major findings of which are highlighted here.

The report identified relevant sectoral interventions and estimated the total human, institutional, financial resources required to achieve the MDGs in Bhutan by 2015 under the four broad thematic clusters of Poverty Reduction [rural development and farm roads, macroeconomics and infrastructure (transport, energy and ICT)]; Health; Education and Crosscutting themes [gender, environment and capacity development for good governance]. The needs assessment exercise adopted the UN Millennium Project’s interventions-based model of identifying a comprehensive range of relevant interventions as the basis for estimating the resource needs for achieving the MDGs. The approach not only incorporates models for health, education, water and sanitation and environment but also encompasses infrastructure and energy sectors, which support all other interventions. In Bhutan’s context, in view of the country’s transition to a parliamentary democracy, the capacity building needs and costs of key constitutional agencies were also estimated. The resource requirements are estimated through a linear scaling up of the interventions in each sector by year from the base start year upto 2015 and importantly factor in the recurrent costs of such interventions.

It is estimated that Bhutan will need to invest about USD 2.5 billion in 2005 prices between 2006 and 2015 if it is to implement all the core and non-core MDG interventions identified. About 60% of these total projected expenditures are recurrent costs. From the first year total cost of US \$ 168 Million in 2006 this eventually doubles upto US\$ 335 Million in 2015. On average, these MDG costs work out to US \$394 per capita annually for ten years from 2006 to 2015. Interventions related to the social MDGs – including water and sanitation - accounts for over half (52.8%) of the total estimated MDG costs. Core interventions comprise about 71%. Breakups by sectoral intervention in terms of percentage of the total estimated costs are provided in the chart. More than a third (37.7%) of the total estimated costs will be required for the final three years leading upto 2015. This presents a particular challenge in the context of uncertainties about development assistance Bhutan’s beyond the end of the Tenth Plan period in 2013.



but have clear operational targets that match and are closely aligned with all the MDGs. Some of the Tenth Plan targets actually exceed national MDG commitments and hence, realizing the Tenth Plan development targets set for 2013 would not only effectively translate into an early achievement of the MDGs but holds the prospect of surpassing them in certain areas.

As with many other developing countries and LDCs, resource constraints figure prominently and acutely in Bhutan's realistic prospects of securing and surpassing its MDG commitments. To further facilitate mainstreaming the MDGs into the Tenth Five Year Plan through aligning national budgetary outlays with resource requirements for meeting the MDGs, a detailed costing exercise to estimate the latter was undertaken. Bhutan was among the first

few Asian countries to undertake such an exercise [See Box 2.1], the results of which were published in the *Bhutan Millennium Development Goals Needs Assessment and Costing (2006-2015) Report* in 2007. The report estimated that Bhutan would require a total of US \$ 2.5 billion to fund all MDG interventions between 2006 upto 2015, a figure inclusive of both capital and recurrent expenditures. An important aspect of this exercise based on the UN Millennium Project model was the inclusion of recurrent expenditures into the total costing. This remains a critical issue for Bhutan as budget capacities have been severely stretched to meet the recurrent costs of large capital investments and this strenuous and rising burden on the national budget has contributed to growing budget deficits. A clear lesson learnt for Bhutan has been that development activities and investment programmes should ideally factor in the recurrent cost to improve their long term sustainability and soundness. Additionally, the Royal Government is continuing to develop a MDG consistent macro-economic framework through the simple macroeconomic modeling framework or SMF model and is considering the necessary fiscal strategies and options of financing the MDGs.

From these developments, it is quite apparent that Bhutan has taken enormous strides to effectively integrate the MDGs into the national development process and planning framework and continues to strengthen efforts to this



Box 2.2

MDG TARGETS ACHIEVED

- CHILD MALNUTRITION HALVED (Underweight U-5 children reduced from 38% in 1990 to 19% in 2000. Further reduced to 9.8% in 2007 – an estimate based on children attending clinics)
- PROPORTION OF POPULATION WITHOUT ACCESS TO IMPROVED DRINKING WATER HALVED (Reduced from 55% in 1990 to 22% in 2000 and 19% in 2007)
- PROPORTION OF POPULATION WITHOUT ACCESS TO IMPROVED SANITATION (Reduced from 33% in 1990 to 12% in 2000 and 10% in 2007)

MDGs NEEDING ATTENTION

- FOOD POVERTY INCREASING THOUGH LOW AT PRESENT (3.8% in 2003 TO 5.9% in 2007)
- GENDER PARITY AT TERTIARY EDUCATION LEVELS (Ratio of Females to Males only 54:100 in 2007)
- REPRESENTATION OF WOMEN IN NATIONAL PARLIAMENT (Indicator not reflected but less than 10% representation)
- BIRTHS ATTENDED BY SKILLED HEALTH PERSONNEL (only 55.9%)
- YOUTH UNEMPLOYMENT RATE (quadrupled from 2.2% in 1998 to 9.9% in 2007)
- HIV/AIDS CASES RISING (144 HIV/AIDS positive cases as of April 2008)

MAJOR CHALLENGES

- RURAL URBAN AND REGIONAL DISPARITIES
- RURAL URBAN MIGRATION
- YOUTH UNEMPLOYMENT
- RESOURCE CONSTRAINTS
- CLIMATE CHANGE IMPACT

end. This can be attributed to the strong national ownership of the entire process driven by the development philosophy of GNH providing an enabling environment to mainstream the MDGs.

2.4 Overview of Progress towards Achieving the MDGs In Bhutan

Bhutan has achieved significant and sustained progress in achieving the MDGs and is potentially on track on all of the MDGs. It has enjoyed notable success in enhancing access to improved drinking water and sanitation, in protecting and managing the country's natural capital, and in ensuring improved basic health care and equitable primary education. Several targets such as reducing malnutrition among children and halving the numbers of those without access to safe drinking water and safe sanitation have already been realized. Recent developments show even further improvement with the prospect of securing and sustaining



universal coverage levels for access to safe drinking water and sanitation possibly even before 2015. Bhutan is also very close to realizing the target of reducing the number of poor by half and is expected to be an early achiever with good prospects to exceed the target set. The disease burdens of malaria and tuberculosis have also been effectively halted and reversed.

There are also certain MDTs that will require urgent attention such as preventing the further rise in food poverty, enhancing gender equity in tertiary education, increasing the representation of women in parliament and in the national decision making process, improving skilled birth attendance toward reducing maternal mortality, enhancing contraceptive prevalence rates to help reverse the rising number of HIV/AIDS cases and addressing rising youth unemployment. Bhutan's progress towards the MDGs is summarized in Table 2.3.

There also remain considerable challenges and constraints that could possibly impede sustained progress towards the complete and qualitative attainment of the MDGs by 2015. The

removal of existing socio-economic disparities between urban and rural areas and across regions will also require sustained efforts to ensure a more evenly balanced progress towards the MDGs across the country. Initial efforts at tracking MDGs at local levels reveal stark contrasts across districts and regions on a number of MDG target areas such as poverty incidence, child malnutrition, food security vulnerabilities, net primary education enrollment and access to safe drinking water.

Resource constraints deeply underlie all these challenges, particularly as the unit cost of development are significantly high owing to the difficult terrain and scattered nature of Bhutanese settlements. The rising costs of social service delivery further add to these resourcing challenges. There is also the looming specter of devastating glacial lake outburst floods in Bhutan from the rapid melting of mountain glaciers due to climate change. Arising from this, there is also the very real likelihood that Bhutan's water resources could eventually dry up - thereby profoundly affecting the agriculture and hydropower sectors that are the lifeblood of the Bhutanese economy.





Box 2.3	Goals, Targets and Indicators	1990	2000	2007	2015	Status of Progress
Goal 1: ERADICATE EXTREME POVERTY AND HUNGER						
Target 1: Halve, between 1990 and 2015, the proportion of people living below the poverty line						
Proportion of population below the national poverty line (%)		-	36.3%	23.2%	20%	On Track
Target 2: Halve by 2015, the proportion of people who suffer from hunger						
Proportion of population below minimum level of dietary energy consumption		-	3.8%(03)	5.9%	1.9%	Needs attention
Percentage of underweight under-5 children		38%('89)	19%	-	19%	Achieved
Percentage of underheight under-5 children		56%('89)	40%	-	28%	Insufficient data
Goal 2: ACHIEVE UNIVERSAL PRIMARY EDUCATION						
Target 3: Ensure that by 2015, children everywhere, boys and girls alike will be able to complete a full course of primary schooling						
Gross Primary Enrolment Ratio (%)		55%	72%	106%	100%	Achieved
Net Primary Enrolment Ratio (%)		-	62%	83.7%	100%	On Track
Proportion of Pupils starting grade 1 who reach grade 5 (%)		73%	91%	92.4%	100%	On Track
Proportion of pupils starting grade 1 who reach grade 7 (%)		35%	81%	85.4%	100%	On Track
Goal 3: PROMOTE GENDER EQUALITY AND EMPOWER WOMEN						
Target 4: Eliminate gender disparity in primary and secondary education preferably by 2005, and to all levels of education by 2015						
Ratio of girls to boys in primary education (%)		69%('91)	82%	99.5%	100%	On Track
Ratio of girls to boys in secondary education (%)		43%('91)	78%	97.2%	100%	On Track
Ratio of females to males in tertiary institutes(%)		12%('91)	41%	54%	100%	Needs attention
Goal 4: REDUCE CHILD MORTALITY						
Target 5: Reduce by two-thirds between 1990 and 2015, the under-five mortality rate						
Under-5 mortality rate (per 1000 live births)		123	84	62	41	On Track
Infant mortality rate (per 1000 live births)		90	60.5	40 (05)	30	On Track
Proportion of children covered under immunization programme		84%	85	90%	>95%	On Track
Goal 5: IMPROVE MATERNAL HEALTH						
Target 6: Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio						
Maternal mortality ratio (per 100,000 live births)		560	255	-	140	On Track
Births attended by skilled health personnel		15%	24%	55.9%	100%	On Track

Goals, Targets and Indicators	1990	2000	2007	2015	Status of Progress
Goal 6: COMBAT HIV/AIDS, MALARIA AND OTHER DISEASES					
Target 7: Halt and begin to reverse the spread of HIV/AIDS					
HIV cases detected	0	38	144 (08)	–	Needs attention
Contraception prevalence rate	19%('94)	31%	35.4%	60%	Needs attention
Target 8: Halt and begin to reverse the spread of Malaria and Other Major Disease					
Number of Malaria Cases per 100,000 population at risk	3,687	875	115*		On track
Number of Tuberculosis Cases per 100,000	720	168	127*		On track
Goal 7: ENSURE ENVIRONMENTAL SUSTAINABILITY					
Target 9: Integrate the principles of sustainable development into country policies & programmes and reverse the loss of environmental resources					
Proportion of land area covered by forest	72.5%	72.5%	72.5%	-	On Track
Ratio of protected area to surface area for maintaining biological diversity	23%	26%	29%		On Track
CO2 (per capita) emissions					Insufficient data
Proportion of population using solid fuels (i.e. wood, charcoal, dung)		75%	70% (2005)		On Track
Target 10: Halve between 1990 and 2015, the proportion of people without sustainable access to safe drinking water and sanitation					
Proportion of population without access to an improved drinking water source	55%	22%	19%	27.5%	Achieved
Proportion of population without access to improved sanitation	33%	12%	10%	17.5%	Achieved
Goal 8: DEVELOP A GLOBAL PARTNERSHIP FOR DEVELOPMENT					
Target 14: In cooperation with developing countries, develop and implement strategies for decent and productive work for youth					
Youth unemployment rate	-	2.6%(98)	9.9%		Needs attention
Target 18: In cooperation with the private sector make available the benefits of new technologies, especially information and communication technology					
Fixed Telephone Lines in Service	4,052	16,580	35,420		On Track
Telephone density (per 100 persons)	0.68	2.4	15.6 (05)		On Track
Computers in use (per 100 persons)	-	0.58(01)	2.3 (05)		On Track
Internet users (per 100 persons)	-	0.43(01)	1.2(05)		Insufficient data
Sources: PHCB 2005, MDG Status Report 2005, AHB 2008, BLSS 2007, General Statistics 2007, MoE, PAR 2007					
*Provisional Estimates					



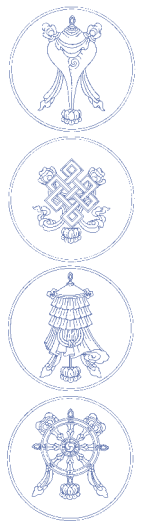
POVERTY is not just about the lack of basic necessities and material needs but is a debilitating condition that deeply affects the non-material well being of humans. It denies people the rightful opportunity to lead tolerable and happy lives, robs them of their dignity, confidence and self-esteem, aspects of deprivation that can be extremely dehumanizing. The prevalence of poverty is as such profoundly inimical and contradictory to Bhutan's vision of the emergence of a GNH society. Cognizant of this deep moral imperative, the Royal Government has sought and continues to strengthen all of its development efforts towards improving the living conditions and well being of its people and eradicating poverty in all its dimensions in Bhutan. The draft Tenth Five Year Plan (2008-2013) of the Royal Government identifies poverty reduction as the core development theme and objective with poverty being mainstreamed through all development initiatives in addition to highly focused and targeted poverty interventions. The Tenth five year plan also has established a clear target of reducing national poverty to below 15%.

More specifically, Bhutan has experienced significant declines in its poverty rates and is well on track towards achieving the first MDG of halving extreme poverty and hunger by 2015. However, one fifth of the country's population still experience severe poverty, 98% of whom live in rural Bhutan where underdevelopment is widespread and other enormous constraints to development prevail. Moreover, the

above development gains achieved so far could even be compromised if certain poverty challenges are not effectively addressed. These challenges include the need to reduce spatial disparities, raise agricultural production and productivity to help small holder farmers break out of the subsistence trap, enhance access to roads and markets, effectively balance livelihood opportunities and conservation priorities, promote off farm employment to help alleviate underemployment in the rural sector and contain rapidly rising youth unemployment.



3 ERADICATING POVERTY



3.2 Status of Bhutan's Progress on MDG-1: Targets 1 and 2

Table 3.1

TARGET 1: Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day

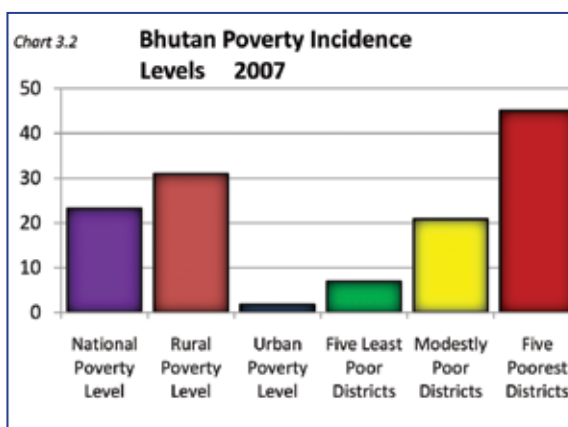
Indicators	1990	2000	2007	2015	Status of Progress toward Target
<i>Proportion of population living below national poverty line</i>	-	36.3%	23.2%	20%	On Track
<i>Human Poverty Index (HPI-1)</i>	-	33.35	27.1%	-	Insufficient data

Target 1 and Related Indicator Progress

Proportion of Population living below Poverty Line

Bhutan has achieved remarkable poverty reduction with the proportion of population living under the national poverty line being reduced by more than one third between 2000 and 2007. The decline in poverty levels has been made possible through rapid economic growth and sustained social investments including education and health. In 2000, 36.3% of the population lived under the poverty line which has been brought down to 23.2% in 2007¹. At this current rate of progress, Bhutan will probably over achieve the first goal of halving poverty reduction and also secure this much before 2015. The country's Tenth

Plan target for poverty alleviation is to reduce the proportion of population living below the poverty line to 15% or less by 2013. The national target thus comfortably exceeds the MDG target of reducing the proportion of population



Source: Poverty Analysis Report 2007

living below the national poverty line of 20%. Moreover this is expected to be achieved two years ahead of 2015.

As in the past, the scale of poverty is significantly higher in rural Bhutan as compared to urban areas. Urban poverty was estimated at 1.7% in stark comparison to rural poverty that has

¹ Poverty indicators of two surveys are not directly comparable as consumption (both food and non-food) aggregates from the 2007 survey are much higher than those of the 2000 survey.



been assessed at 30.9%. However, both urban poverty and rural poverty show steady declines. Since 2003, urban and rural poverty in the country have reduced to current levels from 4.2% and 38.3% respectively. Income poverty by district shows marked contrast with few districts like Zhemgang, Samtse, Monggar, Lhuentse and Samdrupjongkhar suffering high income poverty levels ranging from 52.9% to 38%. These five districts also account for half of all the poor in Bhutan with the poverty incidence in these districts collectively almost double the national average.

Depth and Severity of Income Poverty

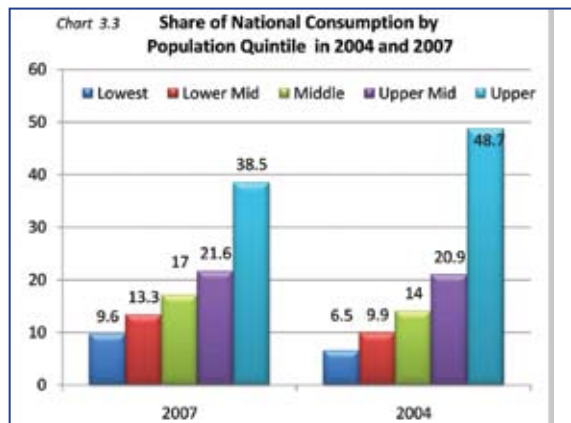
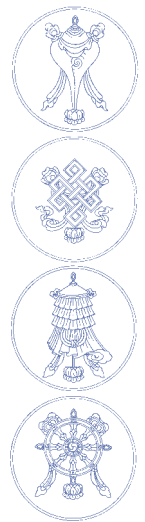
In addition to the above headcount ratio, poverty gap and poverty severity ratios provide a useful perspective on the depth and severity of poverty in the country. Poverty gap ratios not only count the poor but take into consideration of how poor they are. Available data for the years for 2004 and 2007 reflect moderate reductions in the poverty gap ratio which have declined from 8.6% to 6.1% at the national level or effectively reduced by 29%. The rural poverty gap ratio has also declined from 10.5% to 8.1% reflecting a marginally lower rate of decline than the national average. Poverty severity ratio provides added weightage to the very poor than the less poor and is calculated as the weighted sum of poverty gaps. By this measure, the severity of poverty has declined in Bhutan from 3.1%

to 2.3% at the national level and from 3.8% to 3% in rural areas.

Inequality

The Gini coefficient as reported in the Poverty Analysis Report (PAR) 2004 was estimated at 0.416 at the national level with 0.374 for urban areas and 0.381 in rural areas. While the PAR 2007 Report cautions against comparisons with past estimates, the Gini coefficient measure in 2007 was estimated at 0.352 at the national level and 0.317 for urban areas and 0.315 for rural areas. This suggests there has been an improvement in reducing inequality which is also reflected in estimates of national consumption by income group.

In 2007, the richest 20 percent of the population accounted for 38.5% of the total national consumption as compared to 48.7% in 2004. The poorest 20 percent of the population in 2007 accounted for 9.6% of national consumption as compared to only 6.5% in 2004. Consumption patterns for other income groups such as the lower middle, middle and upper middle have also increased



Sources: BLSS 2004 & 2007

between 2004 and 2007 with relatively higher increases for the lower income groups.

Human Poverty Index (HPI-1)

Poverty in Bhutan is considered in a broader context than just from an income dimension and progress in relation to the HPI-1 index provides another complimentary measure to assess poverty outcomes in the country. While human poverty data for the base year of 1990 is not available, tracking progress from 2000 onwards show appreciable advancements in reducing the extent of human deprivation. The rate of progress in alleviating human poverty in Bhutan though has been marginally less than for scaling down income poverty. The HPI-1 index has dropped by 19% from 33.35 to 27.1 over a period of seven years. Improvements in lowering human deprivation as measured by the HPI-1 index have largely come about on account of Bhutan's particular success in reducing malnutrition among under-five children and reducing the proportion of population without access to a safe drinking water source. Both these indicators are now below 10%. Adult illiteracy that measures educational attainment deprivation is still stagnant



and remains an area of significant concern even as enrollment rates at all educational levels are rising rapidly.

Global and Regional Progress towards Eradicating Poverty

The Asia Pacific region has experienced a rapid decline in poverty levels due to rapid growth and between 1990 and 2004 achieved about 91% of the target set with absolute numbers of poor declining by 370 million (A Future Within Reach, UN ESCAP 2008). While the region is on track to achieve the income poverty target, progress has been unevenly distributed with many countries experiencing sharp increases in inequality. The decline in poverty levels in South Asia too has been impressive coming down from 41.1% to 29.5% from 1990 to 2004 with about 88% of the target already achieved. The sub-region is also on target with regard to reducing income poverty. Globally, except for Sub-Saharan Africa, most regions appear to be on track in reducing income poverty.



Target 2 and Related Indicator Progress

Table 3.4

TARGET 2: Halve, between 1990 and 2015, the proportion of people who suffer from hunger

Indicators	1990	2000	2007	2015	Status of Progress toward Target
Percentage of population below minimum level of dietary energy consumption(2,124 KCal)	-	3.8 (2003)	5.9	1.9	Inadequate data but needs attention
Percentage of underweight under five children	38% (1989)	19%	-	19	Achieved

Source: MDG Status Report 2005, AHB 2007* Data pertaining to children attending clinics

Percentage of Population below Minimum level of Dietary Energy Consumption

The Poverty Analysis Report 2007 reports that 5.9% of people suffer from food poverty or consume less than 2,124 Kilocalories per day. This corroborates the perception that there is no evidence of widespread hunger in Bhutan although certain areas are known to experience transient food insecurity and seasonal hunger. Compared to 2003 though, the number of those suffering from food poverty has increased significantly which is a cause for concern and in absolute terms this accounts for 37,300 people in 2007.

The food insecurity disparity between rural and urban is striking, with 8% and 0.16% respectively. This indicates that food insecurity is predominantly a rural issue in Bhutan. Among the dzongkhags, Samtse, Samdrupjongkhar, Monggar,

Zhemgang, Trashigang and Chhukha, are districts that experience significant food poverty rates well above the national average, with 26.3%, 11.4%, 10.4%, 9.4%, 8.9% and 8.1% of food poor people respectively. In real terms the same districts account for the highest number of people. The household (HH) size could be a factor influencing the likelihood of subsistence poverty, as the PAR 2007 indicates that the rates of HH with 6-8 members and HH with 9 members and above are 6.6% and 16.9% respectively. Comparatively, these are well above the total HH subsistence poverty rate of 3.8%.

Household food security in Bhutan is linked to low food production and weak agricultural productivity, limited access to land and other productive assets, extensive crop destruction by wild life and pests, the lack of alternative rural employment opportunities, poor food utilization and weak access to road



and transport infrastructure. Moreover, income poverty and the issue of affordability are also underlying causes of food poverty as evident from the various national poverty reports that generally show districts with low income poverty with corresponding degrees of high food poverty incidence. The aspect of affordability becomes particularly relevant in the context of an emerging trend of food procurement in Bhutan shifting away from farm production to purchases from the market. Additionally, Bhutan's high dependence on imports of food cereals in the context of the recent rise in global food prices could also impact on both the rural and urban poor.



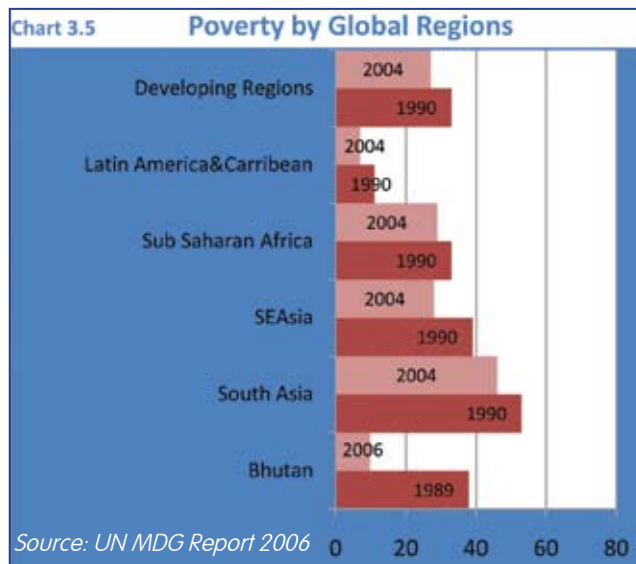
declined from 38% in 1989 to 19% in 2000. In 2007, data for children attending clinics reported a 9.8% prevalence of underweight children below the age of five (Annual Health Bulletin(AHB), MoH, 2007). There are also no gender differences in malnutrition rate between boys and girls. The MDG target in this regard for Bhutan was achieved in the year 2000 and recent data suggest this has been further scaled back though the data largely pertains to children attending health clinics. However, this relatively low level national child malnutrition conceals high regional variations with certain districts with considerably high levels of reported child malnutrition as in Trashiyangtse, Gasa and Zhemgang.

Percentage of Underweight Under-Five Children

Global and Regional Progress towards Eradicating Extreme Hunger

There have been notable improvements in the nutritional status of children in Bhutan. The percentage of under-five children who are underweight has

The Asia Pacific region is not on track to meet the goal of eradicating extreme hunger even as there has been significant progress in reducing



both the total numbers and prevalence of undernourished people. 28% of under-five children in the region are underweight and account for around two thirds of the world's underweight children. South Asia too is off track on reaching the target of reducing under-five malnourished children with only 26% of the target achieved. Close to half of all under-five children in South Asia are underweight representing the highest levels of malnourished under-five children in the world. Due to the weak performance in the region, the global target of reducing extreme hunger is also unlikely to be met.

3.3 Challenges of Addressing Poverty in Bhutan

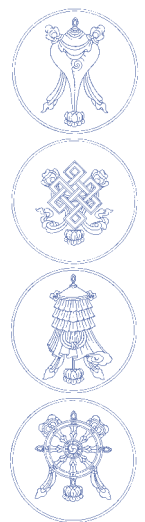
Although Bhutan remains well on track to achieve the poverty reduction targets well ahead of time and significant progress has been made towards alleviating both the income and human dimensions of poverty, there are many key challenges that remain.

The foremost challenge lies in reducing the significant spatial disparities relating to income and food levels and basic living conditions. As the national poverty studies reveal, there are considerable variations in income poverty and food poverty levels between and among regions and districts and urban and rural areas. There are also other significant spatial disparities in economic and employment opportunities, infrastructure and social services that exacerbate and contribute to these poverty conditions.

Ensuring equitable and balanced development to prevent growing spatial inequalities represents an enormous challenge for the country, a task made more difficult by the nature of scattered and highly dispersed population settlements in an unforgiving and harsh terrain. The associated high unit development costs of raising income and human poverty levels in the face of significant resource constraints and mounting national debt scales up the magnitude of the challenge.

98% of the poor live in rural areas reflecting the rural dimension of poverty in Bhutan. An underlying reason for the high rural poverty incidence is the subsistence nature of farming, the poor levels of agriculture productivity and the absence of adequate rural infrastructure. Most Bhutanese farmers are small holders deeply trapped in subsistence farming with little surpluses barely enough to cover their non-food needs. The situation is exacerbated by their inherent vulnerability to weather vagaries, natural disasters and chronic crop depredation by pests and wildlife. The challenge for Bhutan to eradicate poverty and prevent regression once that is achieved will depend a great deal on how effectively it is able to deal with the cycle of poverty engendered by subsistence farming and low agricultural yields.

With the increased pace of development and modernization, there is also the emerging challenge that Bhutan's full and strict commitment to environmental



sustainability could potentially conflict with the equally important imperative of ensuring people's livelihoods. Frequently reported instances of human-wildlife conflict are symptomatic of this growing tension. Addressing human livelihood concerns for poverty eradication and maintaining a careful balance with environmental conservation priorities will prove a significant challenge.

There is a close linkage between poverty and employment or underemployment. The rapidly rising rates of youth unemployment and underemployment are a major challenge that could decelerate progress in reducing poverty levels in the country. This is compounded by the mismatch between youth skills and demands of the labour market and their reluctance to take up manual jobs.

Box 3.6

A Lesson Learnt – Complimenting broad based poverty alleviation programmes with targeted poverty interventions

The poverty alleviation strategy of the Royal Government in the past has been to address the human deprivation challenge broadly through the expansion of social services, rural development and income generation activities. While this has helped greatly reduce poverty, the country's development experience over the Ninth Plan have strongly suggested the need to compliment this universal approach with more focused and tailored poverty interventions to address the particular vulnerabilities and needs of disadvantaged communities and groups. As the Bhutan Vision 2020 document articulates, "the legitimate aspirations of vulnerable and disadvantaged groups have not yet been fully met."

Various national poverty and development studies point out that there are small pockets of socially and economically disadvantaged communities and groups across the country, including even within prosperous regions, dzongkhags or geogs. This is not helped by the lack of local level socio-economic data and the fact that national or regional data often tend to mask states of serious indigence and human deprivation that may exist in particular areas.

The Royal Government over the Tenth Plan will adopt a dual poverty reduction strategy that employs both the universal and targeted approach. On one hand, poverty alleviation will continue to be addressed by mainstreaming it through various sectoral plan programmes as in the past that have helped improve living conditions in rural Bhutan but may have lacked targeting efficiency in a certain context. This will be effectively complimented by integrating relevant and focused interventions for target locations or groups that suffer from high income poverty and food poverty or other vulnerabilities and disadvantages. The focused targeting would thus involve delivering development benefits directly to the poor, enhancing their human capabilities and addressing root causes of their impoverishment.

This will also be done through dynamic partnerships with civil society and community groups who may often be better able to address these needs. This is anticipated to help scale down poverty levels more effectively, reduce their intensity and severity and ultimately eradicate poverty completely.







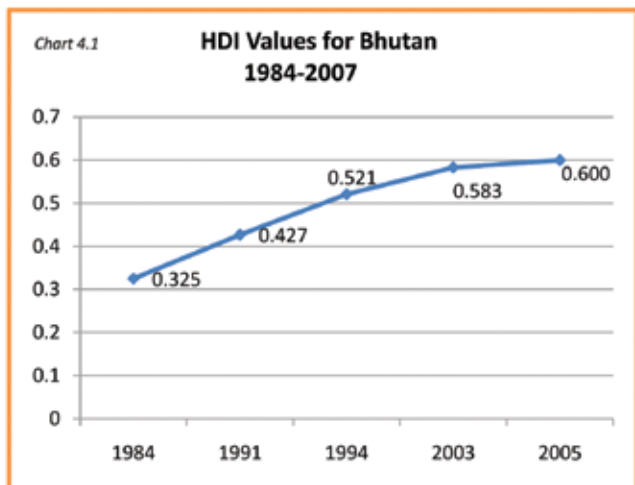
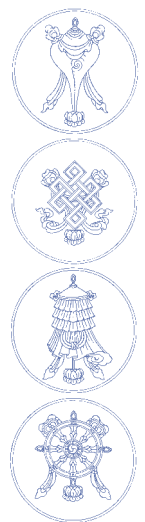
4

SECURING THE SOCIAL MDGs

BHUTAN has a truly notable record in removing human deprivation as measured through impressive advances made in furthering human development conditions in the country. Life expectancy has increased by about 30 years since 1961. Infant mortality has been scaled down from more than 206 per 1,000 live births to 40 in 2006. Maternal mortality rates similarly have seen significantly reductions from 770 per 100,000 live births in 1987 to 250 per 100,000 live births in 2000. Numerous health issues associated with poverty and simple hygiene have been eradicated and major diseases that were previously rampant such as tuberculosis and malaria are now under effective control. Progress in education has been equally notable. In the early sixties, Bhutan had less than a few schools with about 500 students in all, most of whom were boys. Today there are 157,112 students in 523 schools (excluding monastic schools and non-formal education centres). Bhutan is also very close to achieving universal primary education with virtual gender parity at

primary and secondary school levels. Adult literacy levels have also risen from about 10% in 1970 to 53% in 2005. Advances in health and education have been accompanied by rapid progress in other areas of human development. Most Bhutanese now have access to an improved drinking water source (84%) and improved sanitation (89%) figures that in the past were among the lowest in the world. Rise in income levels measured by GDP per capita have also increased tremendously climbing from about US\$ 51 in 1961 to about US\$ 1,419 in 2006.

As such Bhutan's human development attainments measured through the Human Development Index (HDI) has increased tremendously and the country has risen from being a low human development state to a medium human development one.



Sources: *Bhutan National Human Development Report 2005*, *UNDP Human Development Indices 2008*

4.2 EDUCATION

4.2.1 Status of Bhutan's Progress on MDG-2: Target 3

Table 4.2
GOAL 2: Achieve Universal Primary Education
TARGET 3: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling

Indicators	1990	2000	2007	2015	Status of Progress toward Target
Gross Primary Enrollment Ratio (GPER)	55%	72%	105.7%	100%	Achieved
Net Primary Enrollment Ratio (NPER)	-	73% (2005)	83.7%	100%	On Track
Proportion of pupils starting grade 1 who reach grade 5	73% (1991)	91%	92.4%	100%	On Track
Proportion of pupils starting grade 1 who reach grade 7	35%	81%	85.4%	100%	On Track

Source: General Statistics 2007, MoE

Target 3 and Related Indicator Progress

Primary Education Enrollment

The Gross Primary Enrollment Ratio (GPER) for Bhutan has virtually doubled from 55% in 1990 to 105.7% in 2007. Enrollment between 1995 and 2007 has grown at an average of 4.3% and appears to be gradually decreasing in view of the declines in birth rates in the country. Bhutan's Net Gross Primary Enrollment Ratio (NPER) in 2007 was 83.7% indicating that about 16% of children in the primary school going age or 16,500 are currently out of the formal school system with about an equal number of boys and girls (Ministry of Education, 2007). These children will

be six or seven years old, most of whom will probably join school the following year and others will be studying abroad or in monastic institutions. While there is insufficient data dating back to 1990 for net enrollment, the Royal Government is confident the target will be achieved well before 2015.

Details of gross and net enrollment by district are provided in Table 4.3. A notable finding that emerges from the Bhutan Poverty Analysis Report 2007 is that across almost all districts, net enrollment figures for the poor are much lower than for the non-poor. At the national level this comprises a huge difference of more than seventeen percentage points between the poor and non-poor.



There is virtual gender parity in the primary enrollment ratios with 97.6 girls for every 100 boys for the GPER and 99.5 girls for every 100 boys on the NPER. This national average holds true except in the least populated district Gasa, where gender parity is skewed with only 79.6 girls for every 100 boys for the GPER and 71.1 girls for every 100 boys for the NPER. The reasons for this low gender parity index are as yet unclear.

Table 4.3

 PRIMARY SCHOOL ENROLLMENT RATIOS AND GENDER PARITY
 BY DZONGKHAG 2007

Dzongkhag	Gross Primary Enrollment Ratio (%)	Gender Parity Boy-Girl Ratio for GPER (%)	Net Primary Enrollment Ratio (%)	Gender Parity Boy-Girl Ratio for NPER (%)
Bumthang	115.0%	100.8%	96.7%	102.8%
Chukha	98.5%	95.7%	79.3%	101.5%
Dagana	119.0%	96.4%	87.0%	102.1%
Gasa	82.3%	79.6%	60.8%	71.1%
Haa	107.5%	96.2%	87.9%	99.7%
Lhuentse	104.0%	96.6%	82.5%	98.0%
Monggar	102.6%	95.6%	83.4%	99.0%
Paro	107.2%	98.8%	87.0%	98.8%
Pemagatsel	118.3%	97.7%	94.5%	100.6%
Punakha	110.1%	116.1%	89.6%	111.9%
Samdrup Jongkhar	108.6%	93.7%	81.3%	91.8%
Samtse	96.0%	95.1%	71.7%	100.4%
Sarbang	96.9%	97.3%	73.1%	101.3%
Thimphu	108.6%	99.8%	92.0%	101.7%
Trashigang	104.2%	92.9%	83.8%	92.5%
Trashiyantse	115.7%	97.1%	90.1%	97.0%
Trongsa	119.2%	105.9%	94.6%	103.8%
Tsirang	105.2%	99.0%	72.2%	99.0%
Wandue	105.8%	102.9%	87.2%	100.1%
Zhemgang	118.9%	95.7%	90.7%	99.7%
National	105.7%	99.5%	83.7%	97.6%

Source: General Statistics 2007, MoE



Primary School Completion

The success rate of primary school completion has been rising steadily but appears to be plateauing off and will require sustained effort to continue scaling up educational efficiency measures. In 2007, 92.4% of students starting grade 1 reached grade 5 while 85.4% reached grade 7 with survival rates for girls slightly better than for boys for the year. However, survival rates beyond grades 7 and 8 show significant declines with these grades marking a particular phase when many students tend to drop out of school.

Achieving Universal Primary Education in Bhutan

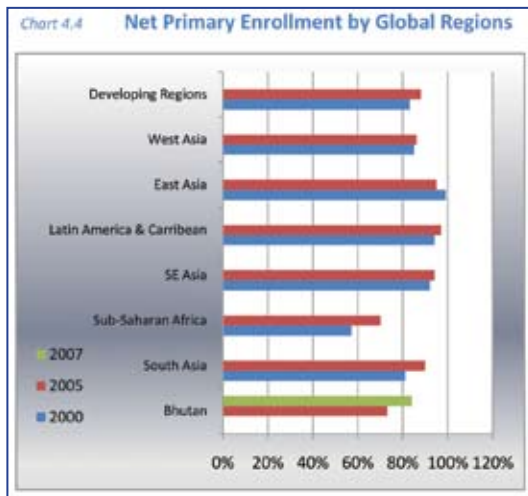
On the basis of the rate of progress on the above two indicators relating to enrollment and primary school completion, Bhutan is well on track towards achieving the Second MDG of achieving universal primary education by 2015. There is the strong possibility that Bhutan could achieve this goal by 2013 that marks the end of the Tenth Plan period or potentially even earlier than that. With specific regard to the primary enrollment targets set, this was previously tracked against gross enrollment ratios as net enrollment ratio data were unavailable. However, since the year 2005, net enrollment figures have been available and progress on this indicator is being tracked and reported on.

Global and Regional Progress on MDG 2 to Achieve Universal Primary Education

Relatively though, Bhutan's net enrollment figures are below that of South Asia and the Asia Pacific region and only better than that of the Sub-Saharan Africa sub region [See Chart 4.4]. This reflects the scope for considerable improvement *vis-à-vis* the world and region at large. A pertinent global primary education trend that is reflected in Bhutan is that children from poorer and rural households are least likely to attend school. However, unlike few regions where girls are still excluded from primary education more often than boys, there is virtual gender parity in primary and secondary education in Bhutan.

The Asia Pacific Region is well on track to achieve the net primary enrollment target with primary education one of the region's great successes. Almost all countries have net enrollment rates above 90% with many who have already achieved the target (*A Future Within Reach, UN 2008*). The success has been attributed to the high policy priority given to education in the region and the significant private and public resources invested in it. The developing regions as a whole also had an 88% net enrollment in 2005 with the group average only being reduced by the Sub-Saharan Africa sub region which lags behind with the weakest figures of 70% net enrollment in 2005. Within South Asia, Sri Lanka (97.1%), Bangladesh (93.8%), Maldives (89.7%) and India (89.7%) were the best performers followed by Nepal (84%), Bhutan (83.7%), Pakistan (52%)





Sources: UN MDG Report 2007, MoE

and Afghanistan (54%).

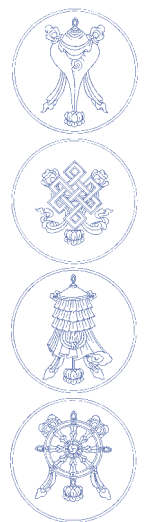
In terms of school completion, Bhutan fares relatively better than for net enrollment. Within the Asia Pacific Region several countries have considerable MDG gaps in the context of targets for students surviving to grade five. Bhutan's gap with less than 10% of the target to be achieved places it among the better performing nations both in South Asia and the larger Asia Pacific region.

4.2.2 Challenges Pertaining to Achieving Universal Primary Education in Bhutan

While Bhutan, given the accelerated rate of progress in enhancing net enrollment, is likely to achieve the target, their present levels are still low by regional and global standards. That 16,500 children still remain out of school - even if they are likely to join the education system later - is a matter of deep concern to the Royal Government. Addressing the correct age of enrollment in primary education

thus remains a significant challenge, particularly in rural areas and in several districts like Gasa, Samtse, Sarbang and Tsirang where net enrollment figures are extremely low and only about at par with Sub-Saharan Africa. The Bhutan PAR 2007 notably reveals a seventeen percentage point difference in net primary enrollment rates between the poor and non-poor populations.

Enhancing accessibility to primary education to the furthest reaches and remote areas of the country where much of Bhutan's poor and vulnerable reside is a stupendous challenge. This is made all the more difficult by the need to maintain certain standards of education quality. The quality of education in the isolated and hard to reach areas is invariably affected by the dire shortage of good teachers, lack of basic infrastructure and the paucity of learning resources and facilities. A recent national study on rural-urban migration identified education as the major factor attracting



rural residents to urban areas.

The quality of primary education though is not a concern only for rural and hard to reach communities but has emerged as a critical national priority. The overcrowding of classrooms, teacher competence, curriculum relevance, the lack of libraries, laboratories and computer facilities, inadequate sports and recreational activities are some of the concerns of all Bhutanese pertaining to the effectiveness, relevance and quality of education in Bhutan.

An additional pressing challenge is the retention of children in school. Even as education is provided free, the incidental costs of sending children to schools both in urban and rural communities appears to be a relevant factor determining whether children continue attending schools. Moreover, for many very poor parents, school is a disincentive as the older children are often able to help out with the farm work, household chores and often contribute to household income. There is also the challenge of adopting a more inclusive approach to improve educational access to and meet the special needs of those with physical disabilities and learning impediments.

Addressing these various challenges of enhanced primary education coverage and quality and removing spatial disparities in the levels of enrollment, educational attainment and quality of education between urban and rural areas and the poor and non-poor will clearly require more sustained inputs and committed resources. The Bhutan MDG Needs Assessment and Costing Report 2007 estimated that education interventions will require the largest share (24.4%) of the total MDG resources needed. Between 1996 and 2015, the total education interventions are expected to cost about US \$ 610 million in 2005 prices.



4.3 HEALTH

4.3.1 Status of Bhutan's Progress on MDG-4: Target 5

Table 4.5
 GOAL 4: REDUCE CHILD MORTALITY
 TARGET 5: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate

Indicators	1990	2000	2007	2015	Status of Progress toward Target
Under-five Mortality Rate (per 1,000 live births)	123	84	61.5	41	On Track
Infant Mortality Rate (per 1,000 live births)	90	60.5	40.1	30	On Track
Proportion of one year old children covered under immunization programme	84%	85%	>90% (with card)	>95%	On Track

Sources: Bhutan MDG Status 2005 Report , AHB, 2008 MoH

Target 5 and Related Indicator Progress

Child Mortality

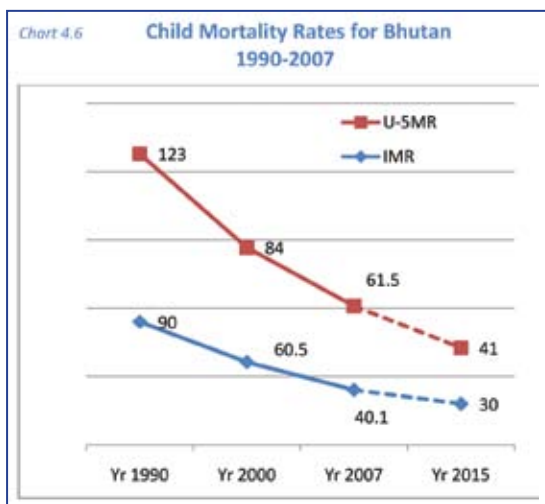
Since 1990, Bhutan has witnessed steep drops in under-five mortality rates. Between 1990 and 2007, mortality of under-five children has been reduced by about half [See Chart 4.5]. The U-5MR was estimated at 61.5 per 1,000 live births in 2007. At these sustained and rapid rates of reduction with three quarters of the target achieved, Bhutan remains well on track to achieve the MDG target to reduce under-five mortality rates by two thirds. The Tenth Plan national targets are even more ambitious with U-5 MRs set to be reduced to less than 30 per 1,000 live births.

The major causes of under-five mortality and morbidity in Bhutan are attributed to acute respiration infections (ARI), diarrhea and worm infestation. Additionally, malnutrition remains an underlying cause of child morbidity and mortality even as vast improvements have been secured. About 49% of all U5 deaths are associated with under-nutrition. A high number of children (81%) under 3 years also have anaemia of varying degrees¹. Children start to become malnourished even in the womb. In 1998 about 24% of children born in health centers had low birth weight (less than 2.5 kg) though the proportion has fallen to 14%² in 2006. 10.2% of birth in 2005 occurred in teenage (15-19 years)

1 National Anemia Survey 2003

2 Situation Analysis of Women and Children in Bhutan, 2006, UNICEF





Sources: *Bhutan MDG Status 2005 Report*

in 1990 to 40.1 per 1,000 live births in 2007. These represent highly impressive reductions that must be sustained further to attain both the MDG target of 30 by 2015 and the national Tenth Plan target of 20 by 2013. Infant deaths in Bhutan are generally attributed to neonatal mortality, infectious diseases such as diarrhoea, respiratory infections and low birth weight. The high incidence of low birth weights in the country is also seen to be an important underlying factor affecting the survival of infants. The low levels of adult female literacy, poor hygiene and nutrition, limited access to emergency obstetric care, neonatal care and skilled birth attendance are some of the other contributing factors to child mortality. However with ongoing efforts to strengthen institutional deliveries, improve skilled birth attendance, maternal & neonatal care and enhance breast feeding advocacy programmes, Bhutan remains well on course to attain the MDG target of reducing infant mortality by two thirds and could even be an early achiever in this regard.

Immunization

A major factor responsible for the sharp declines in child mortality in the country has been attributed to the successful expanded programme of immunization (EPI). Following the launch of the EPI in 1979, the country achieved universal child immunization in 1991. The national immunization levels are based on coverage for BCG, diphtheria, tetanus, pertussis, poliomyelitis, measles, rubella and hepatitis B. The average coverage levels for these antigens for children with

mothers³. Teenage pregnancy leads to low birth weight babies who are highly vulnerable to neonatal deaths. Most children born with normal weight also become malnourished in their first and second years. Underweight among children is attributed to poor complementary feeding practices and low rate of exclusive breastfeeding, which remains 42% for babies under 4 months⁴. ARIs, including pneumonia, are most evident during the winter months and are primarily due to the harsh climatic conditions, crowded and poorly ventilated rooms and poor hygiene. Although the incidence of diarrhea has been reduced, it still remains high and particularly pronounced during the summer months.

Infant mortality rates have also been declining at equally rapid rates since 1990. IMRs have been scaled down by about 55% from 90 per 1,000 live births

³ Socio-economic and demographic indicators, National Statistics Bureau, Aug 2008

⁴ National Health Survey, MoH, 2000





Sources: UN MDG Report 2007, AHB 2008 MoH

proper immunization cards showed that 89.7% of all children were fully vaccinated while 10.3% were partially vaccinated. Vaccination coverage for Tetanus Toxoid (TT2) though remains very low at 46.15%. The few exceptional instances of children missing vaccination were attributed mainly to a lack of awareness of the importance of immunization, vaccines not being available and reasons of ill health of the child and mother.



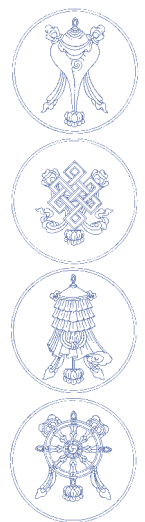
National Progress towards MDG-4 to Reduce Child Mortality

On the basis of the country's performance

on the above three indicators (Table 4.4), Bhutan will attain the MDG goal of reducing child mortality and probably even before 2015. This will, however, require sustained levels of support and intensification of efforts to improve access to child health care services for hard to reach communities. Many relevant interventions may also be required in the light of new and emerging diseases that threaten infant and child health. Furthermore, the attainment of the goal will depend critically on how effectively the significant challenges and constraints highlighted in the latter section are addressed. Among these, developing and upgrading human resources and ensuring the long-term financial sustainability of providing free and quality health care services - particularly meeting the rising recurring costs of vaccines and medicines - will prove a major resource challenge.

Global and Regional Progress on Reducing Child Mortality

The world at large does not appear to be on track to meet the MDG for reducing child mortality, principally due to weak or lack of progress in Sub-Saharan Africa and in South Asia where the situation has been mirrored by the neglect of basic health services. AIDS has also been a contributing factor explaining the lack of progress or even regression in some of the countries. In countries where significant progress has been made, there appears to be wide differentials, with notably higher child mortality decreases in wealthier households where mothers generally



have some education.

Bhutan's rapid and sustained decline in child mortality stands out as among the highest rates of decrease around the world, a particularly notable achievement. The current rate of U-5 mortality rate is also just a third of the rate in South Asia. In the region, Bhutan's rates of U-5 MR are higher than in the Maldives and Sri Lanka but considerably lower than others. However, within the Asia Pacific Region, Bhutan still has relatively high child mortality rates, both for under-five children and infants and falls within the category of the twenty highest infant and under-five mortality rate countries.



4.3.2 Challenges Pertaining to Reducing Child Mortality in Bhutan

The primary challenge remains the need to expand access to and improve maternal, neonatal, child health services and intensify support programmes and initiatives, particularly for remote rural communities. Bhutan will also need to address specifically child health challenges of malnutrition and poor hygiene for rural mothers and children

and the considerable spatial disparities between rural-urban areas for virtually all social indicators including educational and literacy levels that have a significant bearing on preventive child healthcare. Many rural communities in the country do not have sufficient knowledge of good practices essential for child survival including the optimum utilization of available health services. Impact studies in the country generally reveal a low level of awareness and knowledge about the spread of infectious child diseases and their relevant preventive measures, particularly among rural residents and the uneducated.

Additionally, as new and emerging diseases are frequent, new interventions in terms of both prevention and care for infants and children will be required. The timely mobilization of adequate financial and technical support to implement these efforts remains a key challenge. There are also the associated significant costs to develop and upgrade appropriate expertise and skills, introduce effective vaccines and drugs and acquire appropriate equipment and facilities. Securing the financial resources to pay



for these activities remain a fundamental and core challenge.

4.3.3 Status of Bhutan's Progress on MDG-5: Target 6

Table 4.8

GOAL 5: IMPROVE MATERNAL HEALTH
 TARGET 6: Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio

Indicators	1990	2000	2007	2015	Status of Progress toward Target
<i>Maternal Mortality Rate (per 100,000 live births)</i>	560	255	-	140	On Track
<i>Proportion of births attended by skilled health personnel</i>	15%	24%	55.9%*	100%	Significant Gap Needs attention

Sources: *Bhutan MDG Status 2005 Report*, AHB, 2008, *BLSS 2007* * Institutional deliveries

Target 6 and Related Indicator Progress

Maternal Mortality and Skilled Birth Attendance

Bhutan has reduced maternal mortality rates (MMR) by about half between 1990 and 2000 from 560 in 1990 to 255 in 2000. While this represents a dramatic drop, the MMR is still regarded to be high. No recent data on the maternal mortality rates have been available. Despite the lack of data between 2000 and 2007, there are indications that with vastly improved access to critical reproductive health services including antenatal care, and the establishment of numerous emergency obstetric care centers, Bhutan is well on track to achieve the MDG target of reducing maternal mortality to below 140 per 100,000 live births by 2015. The Royal Government has set even more ambitious national targets with maternal mortality expected

to be brought down to 100 per 100,000 live births by 2013.

Medical investigations into maternal deaths in Bhutan over the years generally point to postpartum haemorrhage, Sepsis and obstructed labour as the direct causes of fatality, most of which are preventable. Notably, as many maternal deaths have often happened at home, the Royal Government has placed an extremely high priority on promoting institutional deliveries and skilled birth attendance. Another indirect cause of maternal deaths has been linked to anaemia, which is common in the country and still affects many pregnant women.



Table 4.9: Primary causes of maternal deaths in Bhutan

Causes	Percentage
Post partum Haemorrhage	55
Sepsis	14
Obstructed labour	7
Others;	24
- chorio-carcinoma	
- amniotic fluid embolism	
- chronic lung disease	
- acute renal failure	
- thrombo-embolism and severe anaemia with congestive heart failure	

Source: Maternal Death Review 2005, Ministry of Health



Skilled birth attendance in Bhutan was abysmally low at 15% in 1990, among the world's lowest skilled birth attendance rates. However, skilled birth attendance has now increased almost four fold to 56% in 2007. The latter refers specifically to institutional deliveries and it is known that trained mid-wife deliveries are considerably higher. While there is an extremely strong and supportive policy environment to scale up skilled birth attendance and raise it to 100% to attain the MDG target, doing so presents an enormous challenge due to the extensive gap involved. There are also very high regional, urban and rural variations in skilled birth attendance with very low figures for districts like Trongsa (13.3%), Dagana (20%), Haa (24%) and Trashiyangtse (24.7%) as compared to high skilled birth attendance levels in Punakha (86.5%), Thimphu (84.3%) and Paro (73.9%).

Global and Regional Progress towards MDG-5 to Improve Maternal Health

The world is unlikely to reach the target of reducing maternal mortality by two-

thirds and maternal mortality rates are said to be unacceptably high across the developing world. The regions of South Asia and Sub-Saharan Africa in particular are known to have extremely high incidences of maternal mortality and account for around 95% of the world's maternal fatalities during pregnancy or child birth. This is also linked to the very low levels of skilled birth attendance in these regions [See Chart 4.8].

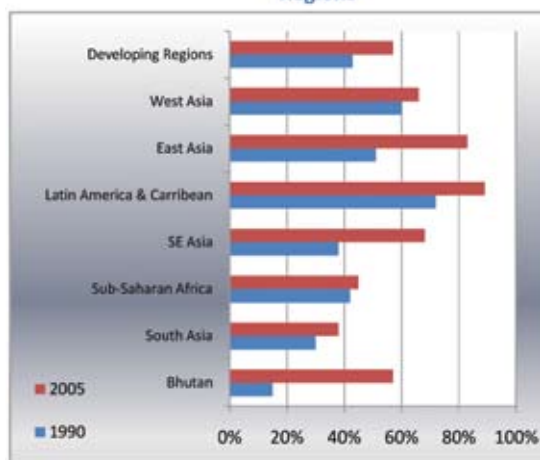
The Asia and Pacific Region too is likely to miss the target of reducing maternal mortality. Between 1990 and 2000, countries in the Asia and Pacific region had only achieved 24% of the target reducing the MMR from 395 to 300 per 100,000 live births.

4.3.4 Challenges Pertaining to Reducing Maternal Mortality in Bhutan

At the heart of the challenge to improve maternal health and reduce maternal mortality in Bhutan is the need to actively raise the low levels of skilled birth attendance, particularly in the rural areas

of the country and in districts with extremely low figures for the indicator. As a strategic priority, Bhutan will also need to address the challenges of enhancing institutional delivery and promoting access and utilization of maternal with integrated neonatal health care, particularly the frequency of ante natal checkups. These are further constrained by the shortage of trained health personnel, lack of adequate obstetric equipment and facilities, access issues due to distance, highly dispersed settlements and terrain difficulties and deeply entrenched cultural and awareness barriers.

Chart 4.9 Skilled Birth Attendance by Global Regions



Sources: UN MDG Report 2007, AHB 2008 MoH

4.3.5 Status of Bhutan's Progress on MDG-6: Target 7

Table 4.10

GOAL 6: Combat HIV/AIDS, Malaria and Other Diseases
 TARGET 7: Have halted by 2015 and begun to reverse the spread of HIV/AIDS

Indicators	1990	2000	2008	2015	Status of Progress toward Target
<i>HIV cases detected</i>	-	38	144 (April 08)	-	Needs attention
<i>Contraceptive Prevalence Rates</i>	18.8% (1994)	30.7%	35.4%	60% (national target)	On Track

Sources: Bhutan MDG Status 2005 Report, BLSS 2007, AHB, 2008



Target 7 and Related Indicator Progress

HIV/AIDS

There is a rising trend of HIV infection even as the total numbers of HIV cases detected remain small and the prevalence is estimated to be below 0.01% of the population. In 2007, 37 new cases were detected bringing the total number of cases detected in the country so far to 144 as of April, 2008. Twenty five of these 144 cases have died. Estimates from UNAIDS are that about 500 people could potentially have been living with HIV/AIDS in Bhutan undetected at the end of 2005. Case detection over the last few years reflect an alarming rise with the main mode of transmission being through heterosexual sex (94%). Mother to child transmissions has also witnessed a significant rise in recent years. The people detected with HIV/AIDS are representative of a wide cross section of Bhutanese society and come from fifteen of the country's twenty districts. About 88% of all HIV/AIDS cases detected so far fall into the age group between the ages of 20 to 49. However, most of the reported cases were likely to have been infected five to eight years ago and do not present a picture of the current state of the epidemic.

The rising trend in HIV infections are a serious cause of concern, particularly in the context of several risk factors. These risk factors include Bhutan's proximity to countries with high prevalence of HIV/AIDS, high prevalence of sexually transmitted diseases, the spread of



commercial sex work, less stringent sexual norms, rising levels of substance abuse, limited contraceptive use and the youthful demographic profile of the population. There is also very little known about the most-at-risk population groups including their behavior, which tends to become invisible or hidden due to the closeness of social networks in a small society like Bhutan along with the considerable social stigma attached to such infections.

As infection trends are rising rather than reversing and there is still a relative low level of condom use, Bhutan's progress towards the MDG of combating and reversing the spread of HIV/AIDS will require serious attention.

Global and Regional Progress on Halting and Reversing the Spread of HIV/AIDS

The numbers of those living with HIV/AIDS has increased in the world from 32.9 million in 2001 to 39.5 million in 2006 with most of them living in the Sub-Saharan Africa region. The number



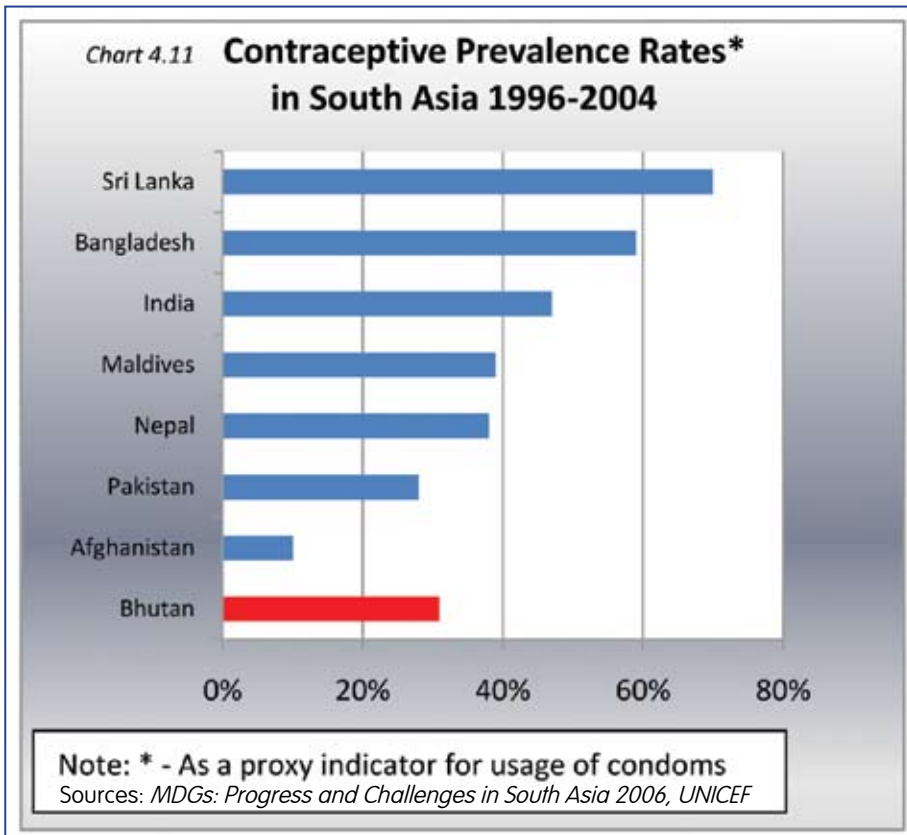
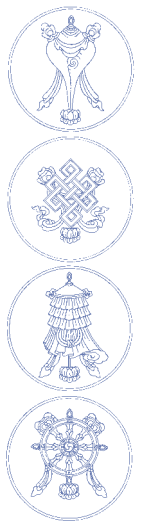


of people dying from AIDS has also increased largely due to rising fatalities

in the Sub-Saharan Africa region. The global trend is that HIV prevalence has leveled off in the developing world. HIV prevalence is moderate in the Asia and Pacific region but even as many countries remain on track for the MDG, the region is on the whole regarded to be some way off from meeting the MDG goal of halting and reversing the spread of HIV/AIDS. In South Asia, while the prevalence has declined, the limited use of condom use is believed to pose significant HIV/AIDS risks for the population.

4.3.6 Challenges Pertaining to Combating and Reversing the Spread of HIV/AIDS in Bhutan

Bhutan faces several issues and



challenges in combating the spread of HIV/AIDS. There is a serious and severe shortage of people trained in the areas of HIV/AIDS prevention, rehabilitation and care. The stigma and discrimination attached to people living with HIV/AIDS is also known to be quite widespread in Bhutanese society and will require effective public advocacy. The rising levels of HIV/TB co-infection is another critical challenge that the country must deal with. Other constraints in dealing effectively with the HIV/AIDS situation

relate to the increased possibilities of mother to child transmission once the epidemic matures, addressing gaps in the surveillance data and weaknesses in the risk and vulnerability analysis and most importantly, financing the costs of providing comprehensive treatment and care in a resource strapped environment. With regard to the latter, HIV/AIDS interventions are estimated to cost US\$ 32.3 million between 2006 and 2015 or 5.9% of the total Health MDG intervention costs.

4.3.7 Status of Bhutan's Progress on MDG-6: Target 8

Table 4.12

GOAL 6: Combat HIV/AIDS, Malaria and Other Diseases
TARGET 8: Have halted by 2015 and begun to reverse the spread of Malaria and other major diseases

Indicators	1990	2000	2004	2007	2015	Status of Progress toward Target
<i>Number of Malaria cases and</i>						
	22,126	5,935	2,760	793	-	On Track
<i>Malaria cases per 100,000</i>	3,687	875*	366	115*	-	
<i>Number of Tuberculosis cases</i>						
	4,232	1,140	1002	874	-	On Track
<i>Tuberculosis cases per 100,000</i>	720	168	133	127*	-	

Sources: *Bhutan MDG Status 2005 Report*, AHB 2008, *provisional estimates

Target 8 and Related Indicator Progress

Malaria

Malaria was once a major public health burden but does not pose as serious a threat today as it once did. Malaria cases and incidence have declined dramatically over the last two decades as depicted in Table 4.9. The rapid and progressive declines in malaria cases have also been accompanied by significant reductions in



the mortality from malarial infection with only two deaths in 2007 as compared to 5 in 2004, 15 in 2000 and 63 in 1993.

These marked reductions in malarial morbidity and mortality have been attributed to several factors including prevention through the use of insecticide treated bed nets, bio-environmental management, strong public advocacy and awareness dissemination, early diagnosis and effective treatment. The coverage of malarial preventive interventions, i.e the use of insecticide treated nets, is over 90% with an average of 2.2 nets per household in malarial endemic areas.

On the basis of this positive trend, Bhutan remains on track to achieve the MDT of halting and reversing the spread of malaria. However, given the complexity of the epidemiology of the disease, possible recurrence of malarial outbreaks and the potential emergence of new drug resistant variants, there is the need to maintain a close vigil and sustain ongoing efforts to control and contain malaria.

Tuberculosis

Tuberculosis incidence and cases have declined extremely rapidly. From as high as 720 cases per 100,000, in 1990, TB incidence has been reduced to 127 cases per 100,000 in 2007. In 2007, there were 874 cases in total as compared to 4,232 cases in 1990. This success, particularly over the last decade is largely attributed to the introduction of the Directly Observed Treatment Short Courses or DOTS in 1997 implemented under the National Tuberculosis Control

Programme. DOTS has had a noticeable impact on improving cure rates for TB in the country. Bhutan as such is well on track to achieve the MDT of halting and reversing the spread of Tuberculosis in the country. However, with the rising HIV/AIDS prevalence, TB incidences and related fatality may increase.

Box 4.13

NATIONAL MALARIA CONTROL PROGRAMME – REDUCING THE DISEASE BURDEN OF MALARIA

Bhutan's anti malarial programme has been highly successful in scaling back the enormous threat that malarial infection posed. Starting in the early sixties, the National Malaria Eradication Programme based in Sarbang initiated efforts in the southern regions to eliminate the disease in these malaria endemic areas, including conducting research on drug sensitivity and entomological aspects.

The programme went through various stages of evolution from a vertical strategy to a partial integration and a full-fledged integration into the general health care delivery system today. There was also a fundamental shift in the emphasis to malaria control rather than eradication in 1992. Control strategies too changed with the use of DDT being discontinued in favor of synthetic pyrethroids, namely Deltamethin. The introduction of and widened coverage of insecticide treated bed proved an extremely effective measure for preventing malaria along with bio-environmental management. Today, ITBN coverage extends to 90% of the population at risk with about 2.2 nets per household in malaria endemic areas.

While it was not part of the Roll Back Malaria initiative, Bhutan nevertheless has broadly pursued the intervention guidelines advocated in the RBM strategy. Rapid response teams have also been formed to deal with any potential outbreaks of malaria in the country.





MDG-7 to ensure environmental sustainability is an extremely critical goal as the progressive and sustainable development of any human society fundamentally depends on viable and healthy eco-systems. Environmental sustainability is also an essential condition for the fullest possible satisfaction of human needs and well-being. Conversely, it is well known that environmental degradation can deeply undermine development and threaten the various multi-dimensional aspects of human well-being. In this regard, the goal of ensuring environmental sustainability is also highly pertinent to the fulfillment of other MDGs and in particular, poverty eradication and improving health goals.

Bhutan has long recognized these truths of the life-altering and profound impact that the quality and health of the natural environment can have on the livelihoods, health, holistic well-being and happiness of its people. Maintaining a healthy balance between environment conservation and development has therefore consistently been at the heart of Bhutan's development vision and ethos, wherein these are viewed as complimenting rather than competing objectives. This spirited and deep-rooted commitment is not merely about good intentions or rhetoric. Bhutan has worked effectively and conscientiously to integrate the principles of sustainable development into the national planning process and is actualizing these ideals of living well within the carrying capacity of the environment.

This commitment towards ensuring environmental sustainability has also been accorded due importance as an important pillar of the country's development philosophy of Gross National Happiness and now incorporated in the country's Constitution too. Bhutan's people also have a constitutional obligation to preserve the environment. Article 5 of Bhutan's Constitution emphasizes the responsibility of all Bhutanese to protect the environment, conserve its rich biodiversity and prevent ecological degradation. It also stipulates that a minimum of sixty percent of the total land area must always be maintained under forest cover for all time to come. This forward looking and far sighted constitutional pledge is intended to ensure the long term sustainable use of natural resources in a manner that not only benefits present and future Bhutanese generations but also contributes in a small measure to global environment health.

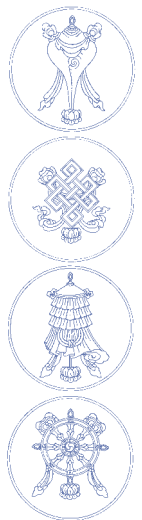
As an outcome of the highest level of political and policy support for ensuring environmental sustainability and the active engagement of its development

Box 5.1

A Constitutional Obligation

Bhutan's Constitution, adopted in 2008, strongly emphasizes the responsibility of all its citizens to preserve the environment to ensure long term sustainable use of natural resources and stipulates a minimum forest cover of 60% to be maintained for posterity.

5 **ACTUALIZING** **THE** **ENVIRONMENTAL** **SUSTAINABILITY**



partners, Bhutan has enjoyed complete success in meeting its commitment to MDG-7. As the following sections reflect, Bhutan is fully on track to meet the various targets set under the Goal and can be regarded to be an early achiever. The country continues to maintain a healthy forest cover of 72.5% of the total land area with 29% maintained as protected areas. Bhutan's dense forests act as effective carbon sinks and taking

carbon sequestration into consideration actually has negative CO₂ emissions per capita. The country as such has a small carbon footprint and a relatively clean energy matrix. The country is also an early achiever with regard to its targets for the provisioning of water and sanitation coverage in the country with levels envisaged to approach near universal coverage levels by 2015.

5.2 Status of Bhutan's Progress on MDG-7: Targets 9 and 10

Table 5.2

TARGET 9: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources

Indicators	1990	2000	2007	2015	Status of Progress toward Target
<i>Proportion of land area covered by forest</i>	72.5%	72.5%	72.5%	-	On Track
<i>Ratio of protected area to surface area for maintaining biological diversity</i>	23%	26%	29%	-	On Track
<i>Per capita energy use(kg oil equivalent per 1000 US \$ PPP)</i>	-	-	-	-	Insufficient data
<i>CO2 (per capita) Emissions</i>	- 5.89 tons (1994)	-	-	-	Insufficient data
<i>Proportion of population using solid fuels</i>	-	75%	-	-	Insufficient data



Target 9 and Related Indicator Progress

Forest Cover

Forests are an integral part of eco-systems underpinning life, economic activity and socio-cultural interactions and serve a variety of functions that are vital for mankind. Besides providing timber and non-timber products, forests also help prevent flooding and landslides and are important for carbon sequestration, watershed protection, soil conservation and maintaining biological diversity. Forests in Bhutan also provide substantial material support at the subsistence level to rural communities and play a key role in helping avert extreme conditions of poverty. Moreover, Bhutan's forests are crucial for the protection of water catchment areas that are particularly pertinent for agriculture development and hydropower generation, sectors that are of paramount significance to the national economy.

72.5% of the total land area of Bhutan is forested, much of which are primary forests. Bhutan's forests covering 29,045 square kilometers comprise mainly broad leaved (38%) and coniferous types (27%) with a small amount of degraded forest (8%). Forest cover has been maintained at these levels since 1990, reflecting virtually no loss in forest cover even as economic development in the country has been increasing rapidly. Bhutan is therefore well on track with in regard to this target indicator. Additionally as evident from Chart 53, Bhutan's forest coverage levels compare

extremely well in comparison to the world and various regions at large in terms of existing forest coverage ratios and ability to prevent further losses of forests.

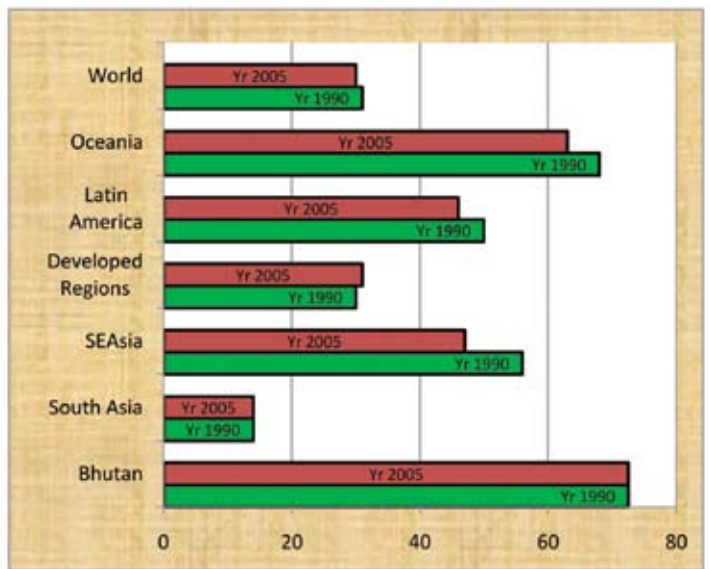
Maintaining the high level of forest cover has largely been possible due to the self-imposed and strict limitations on the commercial exploitation of wood resources including the ban on the export of timber and semi-finished wood products, the effective implementation of critical environmental regulations, controlling unsustainable forms of agricultural practices and active afforestation and reforestation activities.

Protected Areas for Maintaining Biodiversity

Bhutan ranks in the top ten percent of countries with the highest species density in the world. The country has



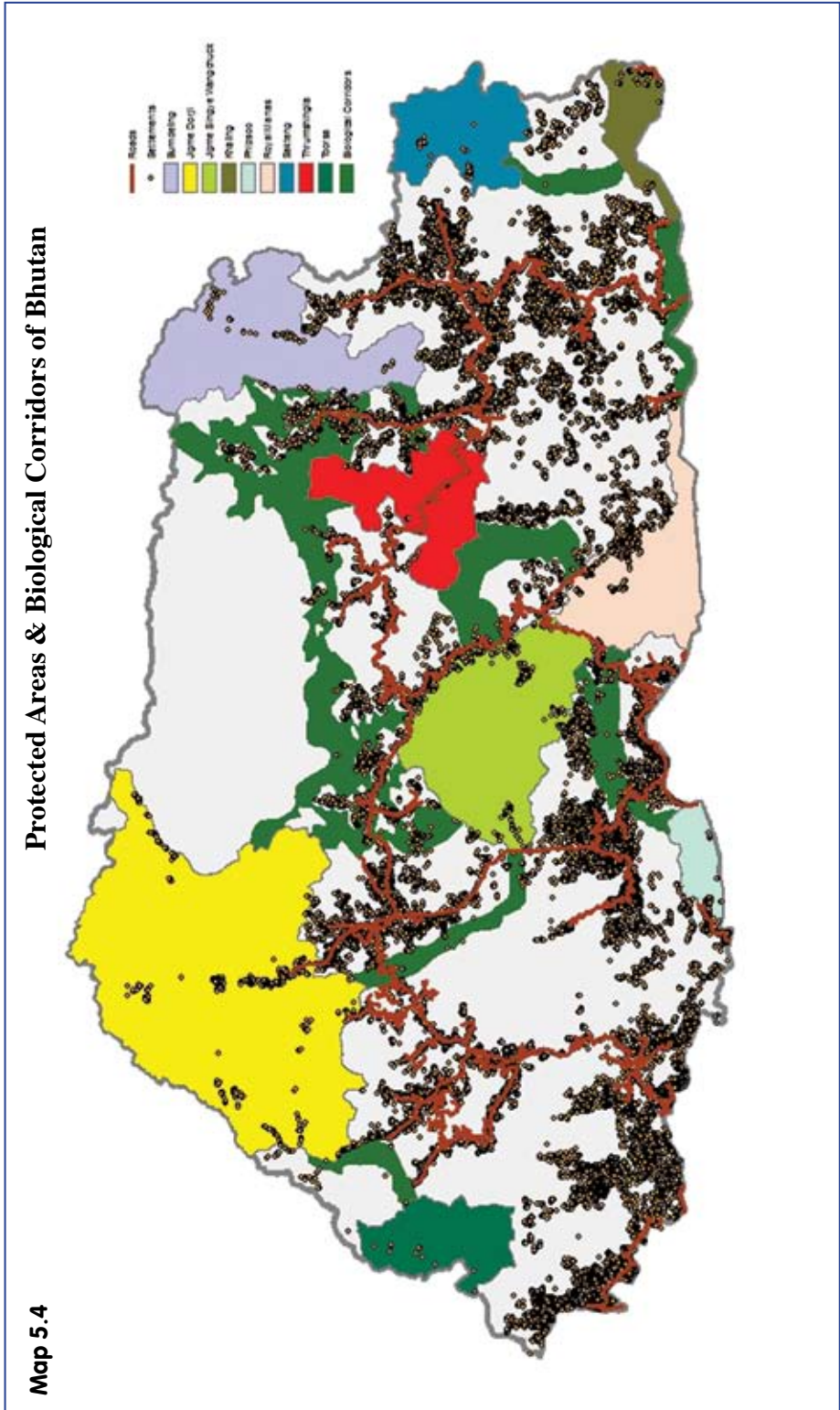
Chart 5.3 Proportion of Forest Cover in % by Regions for 1990 and 2005



Sources: UN, MDG Report 2007, RGoB, Bhutan MDG Status Report 2005



Protected Areas & Biological Corridors of Bhutan



Map 5.4

Box 5.5**The Bhutan Trust Fund for Environmental Conservation – A Global Partnership for Conserving Biodiversity**

Prior to the 1990s, Bhutan had few means to finance its environmental conservation commitments. Rather than a project based approach with a limited time frame, there was an acute need felt for an endowment fund to be established in perpetuity for environmental conservation. This initiative to mobilize and maintain a sustainable funding source to mitigate the “social debt” of financing conservation was the pragmatic and far-sighted vision of conservationists, international development partners and the political leadership in Bhutan. This gave birth to the Bhutan Trust Fund for Environmental Conservation (BTFEC) in September 1991. Subsequently in 1996, the fund was legally incorporated under a Royal Charter.

The BTFEC is an independent grant making entity that uses its annual investment income to finance conservation activities in Bhutan. Starting with an initial capital endowment of US \$ 20.3 million contributed by the Royal Government of Bhutan and many of its international development partners, the funds were invested in global capital markets. Between 1996 and 2002, the fund earned a total return of US \$15 million and today, the Trust Fund has a capital base of US \$ 40 million. The considerable investment returns of about US \$1.5 million a year on average are largely used to help fund many conservation activities in Bhutan.

The BTFEC has helped pay for many conservation activities in the park and protected areas including the institutional strengthening and capacity building in park management activities that otherwise would have been critically underfunded. These include providing training for wild life and park staff in ecology, natural resource management, forestry and the environment and developing and implementing management plans for protected areas. The BTFEC has also provided critical support to help develop an ecological information base including assessments of biological resources. At the community level, it has helped ameliorate poverty in park communities by compensating households for damage to livestock by wildlife and developing alternative income activities under its integrated conservation and development activities. The BTFEC has also helped provide institutional support to organizations engaged in environmental conservation and was instrumental in setting up of the first two national NGOs in the country. The trust fund along with other international and national NGOs is engaged in promoting the long term sustainability of Bhutan’s conservation in park areas through international fund raising among private philanthropists and global NGOs and developing other revenue sources. The trust fund has also played a vital role in advocating environmental conservation through environmental education in schools and creating awareness among the Bhutanese public at large and helped raise Bhutan’s environmental profile around the world.

Following its notable success, the Bhutan Trust Fund for Environmental Conservation - widely acknowledged as the first of its kind - has served as a model for numerous other such trust funds around the world and within Bhutan. The BTFEC also remains a highly successful example of mobilizing strategic global partnerships for conserving biodiversity.



7,000 species of vascular plants, 46 species of rhododendrons, 300 medicinal plant species, 379 species of orchids, 201 mammal species and 770 bird species. Many of them are endangered or extremely rare species such as the Bengal tiger, snow leopard, takin, Himalayan musk deer, golden langur, black necked crane, red panda, takin and white bellied heron. The country additionally forms a major part of the Eastern Himalayan eco-system, a region that has been identified as an international global hotspot for biodiversity conservation. Many ecologists are convinced that Bhutan represents the best and possibly last opportunity for biodiversity conservation in the Eastern Himalayas.



Designated protected areas generally contain the highest biodiversity and maintaining protected areas is deemed highly critical for implementing biodiversity conservation. To protect the nation's rich biodiversity, Bhutan maintains 29% of its total land area as protected areas comprising four national parks, four wildlife sanctuaries and a strict nature reserve. Additionally, to facilitate the migratory movement of animals and birds within a wide natural range and between the protected areas, twelve biological corridors were established. These biological corridors constitute a further 9% of the country's land area.

This conservation landscape of protected areas and biological corridors spanning the length and breadth of the country is

today known as the Bhutan Biological Conservation Complex (B2C2). With the recent declaration of an additional 3,737 square kilometers in the northern region of the country as a new park to commemorate the centenary of the Monarchy in Bhutan, the B2C2 complex will encompass virtually half the total area of the country. The B2C2 approach also refers to the landscape approach to conservation that is at the heart of the Royal Government's conservation strategy for a more holistic, effective and integrated management of the protected areas and biological corridors. This strategic perspective on conservation emphasizes that conservation is not just about endangered species but equally about endangered spaces.

Energy Use and CO₂ Emissions

No data has been collected to estimate energy consumption in Bhutan on the basis of the target indicator of Energy Use (Kg. Oil equivalent) per \$1 GDP (PPP). The Energy Data Directory for Bhutan 2005 though reflects that per capita energy consumption for Bhutan was 0.63 tonne of oil equivalent. The per capita electricity consumption was 1,174 kWh per year which is the highest in South Asia. Of the total electricity consumption in the country, 48.7% was consumed by the residential sector and 25% by the industrial sector. However, the residential sector is significantly more reliant on fuel wood than on electricity with most of the energy requirement being met by wood. The directory also indicates that fuel wood comprises 57.7% of the total primary energy supply in Bhutan.

Data for carbon emissions in Bhutan are available only for the year 1994, in which Carbon Dioxide emissions amounted to 0.404 tonnes per capita. However, as it is among those countries with significant carbon sequestration capabilities due to its extensive forest cover, the overall net emissions were in the negative and estimated at - 5.98 tonnes per capita. Bhutan's annual consumption of ozone depleting substances (ODS) is also low at 0.172 tonnes in 2003. As such, the country has a very small carbon footprint with an overall negative GHG impact. Nevertheless the Royal Government is sustaining efforts to actively control the major sources of CO₂ emissions and

eliminate the consumption of ODS by 2010 as required under the Montreal Protocol.

Fuel wood is used extensively and consumption is high at slightly over 1 tonne per capita as it is comparatively more accessible and affordable than other energy sources. About 66.1% of all households in the country use solid fuels for cooking and heating. However, extensive rural electrification appears to be decreasing the reliance on fuel wood with data clearly indicating that households having access to electricity utilized a third less fuel wood than those without.

Target 10 and Related Indicator Progress

Table 5.6

TARGET 10: Halve, by 2015 the proportion of people without sustainable access to safe drinking water and basic sanitation

Indicators	1990	2000	2007	2015	Status of Progress toward Target
<i>Proportion of population without access to an improved water source (urban and rural)</i>	55%	22%	9.1%	27.5%	Achieved
<i>Proportion of population without access to improved sanitation</i>	33%	12%	3.6%	16.5%	Achieved

Sources: MDG Status Report 2005, Bhutan Living Standards Survey 2007



Access to Safe Drinking Water

In 2007, data from the Bhutan Living Standards Survey 2007 indicated that 90.9% of the population had access to an improved water source leaving less than 10% of the people without access. Bhutan has had particular success in securing access to improved drinking water source even in rural areas where coverage levels are now at 88%. No gender disparity exists in terms of access and where marginal disparities prevail, on the whole females have better access. All districts in the country have upwards of 80% coverage levels with the exception of Gasa, the least populated district, where access to safe drinking water is only 57.1%.

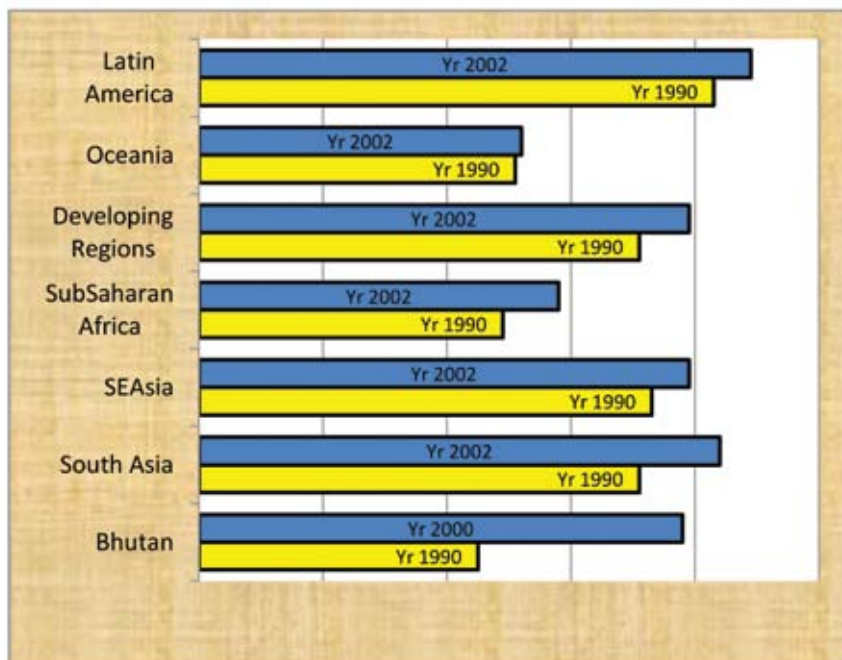
The highest access to improved water sources are in the districts of Bumthang, Trashiyangtse, Thimphu and Punakha with 99.1%, 98%, 97.6% and 97.5% coverage levels respectively. Other than Gasa, the districts of Samtse, Dagana, Pemagatshel and Zhemgang have the lowest safe drinking water coverage levels in the country at 80.5%, 81.5%, 85% and 88.8% respectively.

The target of halving those without access to safe drinking water has thus been achieved in Bhutan and less than 10% of the population now remains without proper access.

Bhutan's performance with regard to the indicator (78% in 2000) is slightly below



Chart 5.7 Proportion of Population with Access to Improved Drinking Water Source By Region, 1990 and 2002



Sources: UN MDG Report 2005, Bhutan MDG Report 2002



the developing country access coverage of 79% in 2002 and the South Asian average, where enhancing coverage levels have been dramatic and touched 84% in 2002. Indications are that world targets for safe drinking water are in sight but coverage remains spotty in rural areas.

Access to Improved Sanitation

The proportion of population with access to safe sanitation in Bhutan has gone up dramatically from 66% in 2000 to 88% in 2000 and 96.4% in 2007. The rapid gains have come about largely on account of the significant improvements in rural sanitation. Today, access to improved sanitation in rural areas at 95.4% reflects a very high level of coverage and is only moderately below urban levels of 98.9%. The data also reflects equal access to improved sanitation for both males and males and across all districts. Gasa, Wanduephodrang, Bumthang, Trashiyangtse and Thimphu enjoy the highest improved sanitation coverage levels at 99.8%, 99.6%, 99.4%, 98.3% and 97.7% respectively. Samtse with safe sanitation coverage of 91% has

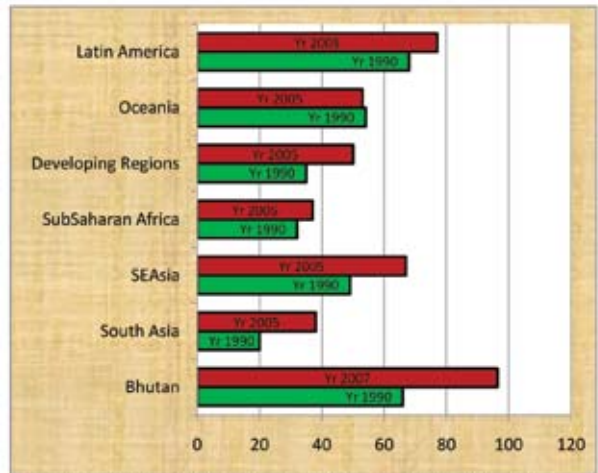
the lowest sanitation access among all districts.

Bhutan’s improved sanitation coverage levels at 96.4% in 2007 are considerably above the South Asian average of 38% (2005) and compares favorably with most regions, including developed countries [See Chart 5.8]. However, most houses in rural Bhutan only have rudimentary pit latrines that are without septic tanks and are known not to be adequately ventilated. South Asia on the whole has extremely low levels of access to safe sanitation and the world’s highest rates of open defecation. The South Asian region as a whole is highly unlikely to meet this MDG target. The World at large is also expected to not meet this target as more than half of the developing country’s people are still without access to basic sanitation.

The significant achievements of Bhutan



Chart 5.8 Proportion of Population with Access to Improved Sanitation by Region 1990 and 2005



Sources: UN MDG Report 2007, Bhutan MDG Status Report 2005, Bhutan Living Standards Survey 2007

in securing high coverage levels for both improved drinking water and improved sanitation well ahead of 2015 are primarily due to the notable success that Bhutan has had in implementing the Rural Water Supply and Sanitation Programme that started in 1974.

5.3 Environmental Challenges for Bhutan

While the environmental sustainability targets for Bhutan stands accomplished and the natural capital remains relatively intact at present, there remain numerous challenges that will need to be addressed proactively to uphold and further enhance environmental sustainability. This will be increasingly more difficult as rapid economic development places a greater burden on the natural environment to meet a multiplicity of human needs. This is not made any easier by the fact that the country is hugely dependent on natural resources for sustaining its economy and the livelihoods of the majority of its people.

Some of the key challenges for Bhutan include issues pertaining to land degradation, potential biodiversity habitat loss, high fuel wood consumption, environmental impact of road construction, waste management and vulnerability to natural disasters. Another crucial environment challenge in Bhutan relates to the competing interests of conservation and human livelihoods that concern many local communities living in protected and national park areas. Additionally, managing and

sustaining large protected areas and maintaining the extensive water and sanitation facilities already developed will require significant resources and capacity, both of which are severely limited in a least developed country like Bhutan. Thus at the heart of this challenge lies the urgency of securing long term sustainable financing arrangements and capacity building without which past gains on the environmental front could be severely compromised.

Land Degradation

Land degradation arising from both human and natural factors remains a significant challenge in Bhutan. The ever increasing level of human activities that induce soil erosion, diminish soil fertility and degrade forestland arise from rapid infrastructure development and urbanization, increased fuel wood and timber consumption patterns, expansion of agriculture and intensifying extraction of non-wood forest resources and prevailing unsustainable farming practices. Frequent forest fires, often caused through human carelessness or efforts to regenerate vegetation growth also impact forestland degradation. Overgrazing by domestic livestock in Bhutan in particular poses a serious environmental threat as the growing population of cattle exerts increased pressure on forest land.

Roads notably have significant impact on land degradation, particularly in fragile mountain eco-systems like Bhutan. While enhancing rural accessibility through



Box 5.9**Bhutan's Vulnerability to GLOFs Arising from Climate Change**

Apart from earthquakes, landslides and river erosion, the country is susceptible to disastrous hazards arising from glacial lake outburst floods (GLOF). GLOFs primarily occur when melting glaciers create and fill up lakes that subsequently burst due to unstable moraine banks resulting in catastrophic flooding.

Bhutan's entire northern areas abound with glaciers and glacial lakes - 677 glaciers and 2,674 glacial lakes - of which 25 pose potentially high risk of GLOF. Since the last inventory of glaciers and glacial lakes in the country in 2001, 120 new glacial lakes have been formed. Moreover, Bhutan's glaciers are also retreating at alarming and record levels - between 20-30 meters a year - due to climate change and glaciologists warn of the heightened risks of GLOFs, particularly from faster retreating glaciers.

There have been five GLOFs in the country with the last one in October 1994, when the Luggye lake burst and caused immense damage downstream in the Pho-chhu valley. There is now the impending danger of a GLOF from a neighboring lake, the Thorthormi, the impact of which would be even more devastating to human life and vital socio-economic infrastructure. A worse-case scenario could also potentially unfold if adjoining glacial lakes were to merge and create a gigantic GLOF as is quite possible with the Thorthormi and Raphstreng glacial lakes that are only separated by a 75 meter moraine dam.

Calamitous floods from melting glaciers in the Himalayas exacerbated by climate change are just the short term potential impact. There are very real dangers of life-threatening water shortages in the long run due to the drying up of glaciers in "Asia's Water Towers" as the Himalayas are also known as. This would also reduce the generation capacity of Bhutan's hydropower stations and irreparably affect its economic sustenance. At the global level, the livelihoods of over 1.3 billion people could be affected through acute droughts as melt water from Himalayan glaciers feeds many rivers of the region. This long term impact could even be felt sooner as by some estimates, the Himalayan glaciers could be completely gone in less than three decades due to climate variability and associated changes in ambient temperatures.



road networks is highly necessary for poverty alleviation in Bhutan, the challenge will be to effectively implement environment friendly road construction (EFRC) methods for road construction that will minimize the impact on the environment.

Bio-diversity Loss

Forestland degradation in of itself can negatively impact the country's rich biodiversity through the loss, disturbance and fragmentation of flora-

fauna habitat. As a core part of the Eastern Himalayan region – recognized as a "global hotspot" for biodiversity conservation –many indigenous species in this eco-system are already highly threatened and endangered. The tag "hotspot" does not merely refer to high species density but alludes to the ever present potential threat to biodiversity from habitat change or loss. In addition to forest degradation due to the reasons mentioned, poaching and retaliation on wildlife for crop depredation in Bhutan are other factors that also threaten

biodiversity loss in Bhutan which need to be addressed.

Urban Environmental Degradation

Urban environmental degradation in recent times has emerged as a critical challenge. The rapid pace of urbanization has already imposed severe strains on available urban services and environmental health. With rapid increases in urban population, the urban environmental situation and health is coming under severe stress with air and water pollution in urban and semi-urban areas deteriorating. The high fuel wood consumption required for heating, vehicular emissions and increased industrial activities are the major causes for urban air pollution. This has had an impact on public health with a steadily rising incidence of acute respiratory tract diseases, cough, bronchitis and asthma. Water pollution in urban areas derives mainly from solid waste, waste water discharge and effluents from automobile workshops and small industries. Solid waste management and disposal is another pressing concern for urban dwellers with increased waste

generation and indiscriminate disposal of waste and litter in urban and peri-urban settlements.

Natural Disasters

Bhutan is highly vulnerable to natural hazards due to fragile geological conditions, immense altitudinal variations and steep terrain. Global warming has further added to this vulnerability. [See Box 5.9] Situated in one of the most seismically active zones of the world, the grave threat of earthquakes in Bhutan is ever present. Furthermore, forest fires, flash floods and landslides are regular occurrences that incur frequent losses of lives and considerable damage to property and infrastructure.

Bhutan's preparedness to tackle with major natural disasters remains weak even as recent efforts are beginning to address these issues. Current disaster risk management is largely done on an *ad hoc* manner and national disaster risk management and capabilities are inadequate. The lack of resources and technical capacity, weak multi-sectoral and organizational coordination and the



Box 5.10

The challenges posed by growing pressures on the natural environment cannot be seen in isolation from other challenges. These combined challenges will need to be met in watersheds and steep valleys as well as in the minds and attitudes of our people, many of whom, while recognizing the importance of the environment, are inclined to regard it as a free resource and have yet to fully appreciate that the many products of a consumer society cannot be disposed of in the same way as the biodegradable gifts of nature.

Bhutan 2020: A Vision for Peace, Prosperity and Happiness, 1999

lack of early warning systems are some of the major constraints that the country faces in this regard.

Capacity Building

Working toward ensuring environmental sustainability is further constrained by the shortage of trained environmental personnel and limited facilities, data, capacity and capabilities for monitoring and assessing environmental impact. The low level of environmental awareness and concern among the general public is another significant constraint that limits proper environmental management. Addressing these capacity and advocacy issues effectively will pose a significant challenge.

5.4 The way forward

The country's Vision 2020 anticipates that Bhutan's natural environment and natural resource endowments will in the near future still be richly intact, with much of the country densely forested with sizeable tracts of protected national parks and reserves harboring an incredibly rich bio-diversity, the envy of many nations. The emergence of clean and safe industries that capitalize on the nation's biodiversity wealth and natural capital is also an integral part of this vision that foresees natural resources not only as something to be preserved but as significant development assets that *"with care and wisdom, contribute to the process of sustainable social and economic development."*

This is a vision that is achievable

and desirable given Bhutan's commendable progress in the context of its environmental sustainability MDG targets. While there remains much to be done within the country to further improve and anchor the prospects of environmental sustainability, their long term outcomes will ultimately hinge on events and factors lying outside Bhutan's borders. The nature of environmental issues being as they are of a highly trans-national character, any consideration of sustainability must necessarily place this within a global context. As such, the following section highlights several national priorities to promote environmental sustainability in Bhutan and also considers measures that are necessary at the global level. The lack of progress on the latter front could well jeopardize and render futile environmental gains achieved at the local and national levels in the long term. The way forward must necessarily be a collective effort and collaborative global partnership, without which every country stands to lose.

In conclusion, there is a need to emphatically reiterate that the long term success in realizing all of the MDGs depends enormously on securing environmental sustainability. As the lack of meaningful progress on MDG-7 could potentially threaten and invalidate gains on the other MDG fronts, there can be no room for complacency and inaction at the global, regional or national level and the responsibility for environmental sustainability must be jointly shouldered among all nation states.





6

CONCLUSION

BHUTAN has made significant and sustained progress in achieving the MDGs and is potentially on track on all of the MDGs. The country has enjoyed notable successes in enhancing access to improved drinking water and sanitation, in protecting and managing the country's natural capital, and in ensuring improved basic health care and equitable primary education. Several targets such as reducing malnutrition among children and halving those without access to safe drinking water and improved sanitation have already been realized. Bhutan is also close to realizing the goal of reducing the number of poor by half and has had exceptional success in arresting the disease burdens of malaria and tuberculosis. In certain areas, MDG Plus indicators are also being targeted under the Tenth Plan (2008-2013), a critical lead period leading into the final years of the MDG time framework.

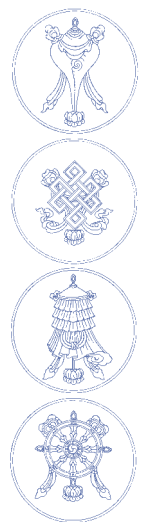
This in many ways has been due to the highly supportive policy environment that the MDGs enjoy within the national development planning framework and the close harmony and compatibility that the goals have with GNH. The pursuit of the MDGs is deemed to be extremely critical for the long term realization of GNH with a very clear recognition that the presence of poverty, ignorance, ill health and conditions of human deprivation is fundamentally inimical to the propagation of happiness.

There are however select MDG target areas that do require attention. These

include the increase in food poverty, existing gender disparities in tertiary education, the under representation of women in national parliament and weak participation in national decision making processes, the low levels of skilled birth attendance, the low contraceptive prevalence rates, the rising number of HIV/AIDS cases and growing youth unemployment.

These challenges are further compounded by the enormous constraints of continuing to enhance rural access to social and other development services within a highly dispersed and scattered mountain environment with their associated high unit cost of delivering such services. Equally important is the urgency of securing adequate resources to continue financing MDG interventions, including for recurrent expenditures that are often overlooked in the estimation of such costs. Without such long term sustainable financing arrangements in place, past gains on the MDG front could be severely compromised.

In addition to these areas where progress needs to be strengthened, Bhutan will also need to address the significant spatial disparities that exist on the achievement of the MDGs within regions and districts. For instance, while the MDG target indicator of reducing the malnutrition of under-five children was achieved a few years ago and brought down below 10%, several districts still have very high and unacceptable levels of malnourished children that are almost twice as high as the national average.



Moreover, variations in poverty incidence across districts are also wide with the five poorest districts experiencing almost eight times the poverty levels as compared to the five least poor districts. The effective monitoring of and reporting on MDG progress at district and local levels in the near future will thus be necessary if Bhutan is to achieve a more equitable progress towards the MDGs across the country.

