



MILLENNIUM DEVELOPMENT GOALS NEEDS ASSESSMENT

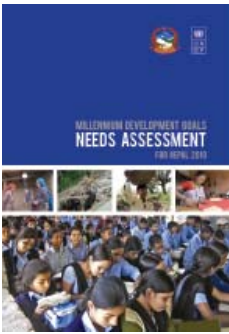
FOR NEPAL 2010





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Tel: 977-1-5523200
PO Box 107
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Website: www.un.org.np
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FOREWORD

Nepal is one of the member states of the United Nations that joined the global pledge to achieve the Millennium Development Goals (MDGs) by 2015. The MDGs have broad but quantified targets that call for strategic development interventions addressing barriers in many sectors from agricultural development to climate change. As levels of development vary from country to country, it is necessary for each country to identify its development needs and design strategic interventions to address them. Implementation of interventions requires estimates of the resources needed to achieve the intended results. This report, thus, presents the results of the MDG Needs Assessment and Costing Exercise for Nepal conducted under the guidance and initiatives of the National Planning Commission (NPC) with technical support of the United Nations Development Programme (UNDP).

Similar to the first MDG Needs Assessment published in 2006, this report presents in detail the national requirements in terms of financial, human and institutional resources to meet the MDGs in Nepal by 2015. This exercise was conducted in parallel with the preparation of the Three Year Plan 2010/11–2012/13 (TYP), thereby enabling the NPC to mainstream the MDG interventions in the TYP. As indicated in the Nepal

MDG Progress Report 2010, the country is on track to achieve most of its targets by 2015.

This report emphasizes the need for a strong national commitment for the implementation of development interventions identified to meet the MDGs. The analysis that follows suggests that there is a need for considerable increases in resource allocations, particularly for achieving Goals 1, 2 and 7. It is also clear that the government will need to mobilize both internal and external resources to help address the gap.

In the spirit of cooperation between the Government of Nepal and United Nations, we have the pleasure to jointly present this important report, the *MDG Needs Assessment for Nepal, 2010*. We hope it will help focus the attention of both development partners and government on the critical issue of policy and resource gaps that needs to be overcome to achieve the MDGs in the final years that remain before 2015.

We greatly appreciate the work of the Thematic Working Groups and the team of experts led by Prof. Dr. Govind Nepal for accomplishing this task, and commend all participants and stakeholders for their contributions in completing the *MDG Needs Assessment for Nepal 2010* successfully.



Robert Piper
UN Resident and Humanitarian Coordinator
UNDP Resident Representative



Dinesh Chandra Devkota, PhD
Vice-Chairperson
National Planning Commission

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The MDG Needs Assessment was prepared under the guidance and coordination of the National Planning Commission (NPC) of the Government of Nepal. The costing exercise was designed to be inclusive and participatory. Nine thematic working groups (TWGs), representing more than 50 agencies, were involved directly in the process of preparing this report. The TWGs were provided with technical assistance by nine thematic consultants. The basic intention of this approach was to internalize the process of the exercise and ensure ownership of the outcome.

Hon'ble Dinesh Chandra Devkota, Vice-Chairperson of NPC, constantly took an interest in the ongoing work, made timely suggestions and offered support when needed to generate quality output in the process. Jagadish Chandra Pokharel and Yuba Raj Khatiwada, former Vice-Chairpersons of NPC, provided valuable inputs at different stages of the preparation of this Report.

The report has been immensely enriched by valuable advice and insights provided by the Hon'ble Members of NPC, Ram Kumar Sharma, Prem Bahadur Kunwar and Subodh Narayan Jha. The former Members of the NPC Pushkar Bajracharya, Ramdev Singh, Tirth Raj Khaniya, Chet Raj Pant, Kamaleshwor Puri Goshwami and Ganesh Gurung provided inputs during their tenure. Similarly, Yuba Raj Bhusal, Member-Secretary of the NPC has provided guidance at the final stage.

The preparation work was coordinated by the Steering Committee led by Ram Kumar Sharma, Member of NPC and Pushkar Bajracharya, former Member of NPC; Yubraj Pande and Bindra Hada (Bhattarai), former Member-Secretaries of the NPC; Pushpa Lal Shakya, Joint Secretary, NPC Secretariat, and National Programme Director, Strengthening Planning and Monitoring Capacity of NPC Project; and Rabi Shanker Sainju, Programme Director, NPC Secretariat.

Thematic group leaders—Pushpa Lal Shakya, Sreerajan Lacoul, Baburam Marashini, Hari Poudel, Lav Deo Awasthi, Krishna Prasad Acharya, Meena Khanal, Krishna Acharya, and Purusottam Mainali; thematic consultants—Rajendra Kumar BC, Neeta Thapa, Chandra Lal Shrestha, Dinesh Nath Chalise, Lal Krishna KC, Madan Koirala, Madhav Karkee, Rajendra Prasad Shrestha and Govind Nepal; and member secretaries of the groups—Purushottam Acharya, Mahendra Poudel, Hari Prasad Ghimire, Rajeev Ghimire and Vijaya Narayan Manandhar—worked closely and intensively to produce thematic papers. Govind Nepal, as a Team Leader of this exercise, coordinated the whole process at the operational level and prepared the main report, based on the thematic reports submitted by the thematic consultants.

The draft report was thoroughly reviewed by senior experts and academicians, namely Balkrishna Subedi, Bina Pradhan,

Tirth Parajuli, Hari Lamsal, Gautam Prasad Shrestha, Ghanashyam Bhattarai, Tulsi Sitaula, Suresh Regmi, Ram P. Chaudhary, Tara Nidhi Bhattarai, Ganesh Raj Joshi, Yogendra Kumar Karki, Ramchandra Bhattarai, Dev Raj Adhikari, Jagannath Shrestha, and Saroj Upadyaya. Special inputs on the final draft were provided by Keshav Acharya, Tek B. Thapa, Upendra Koirala, Suresh Tiwary, Anand Paudel, Krishna Pahari, Netra Timilsina, Ram Sharan Kharel, Batu Krishna Upreti, Chandra Bahadur Shrestha, Thakur Prasad Bhatta, Teertha Raj Dhakal, Govinda Gajurel, Indu Tuladhar, Sanjay Khanal, Radha Krishna Pradhan, Biju Kumar Shrestha, Sagar Acharya, Shiv Raj Chaulagain, Manahari Khadka, Khima Devi Langwa and Saras Rana. Joint-Secretaries of the NPC Secretariat, Atma Ram Pandey, Gopinath Mainali, Badri Pokharel, Bhava Krishna Bhattarai and Dhruva Prasad Dahal, provided support and inputs from the beginning of the process to the final stage of the report preparation.

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EXECUTIVE SUMMARY

BACKGROUND

The MDG Needs Assessment and Costing for Nepal is a joint initiative taken by the Government of Nepal and the United Nations Development Programme (UNDP) to estimate the resources needed and identify gaps for achieving Nepal's MDG targets within the next five years (2011–2015). The National Planning Commission (NPC) as a nodal agency for guidance, steering and execution of this exercise, identified nine thematic areas including agriculture and road infrastructure and formed thematic working group (TWG) for each area, led by a line ministry and consisting of representatives from concerned ministries and departments as well as agencies relevant to each thematic area to prepare the report.

The costing models developed by the Millennium Campaign were used by the members of the TWGs in the costing exercise. A series of discussion was conducted within and between the NPC and lead ministries as well as departments during the preparation of this report. This exercise also contributed to the Approach Paper for the Three Year Plan 2010/11–2012/13 in order to ensure that it is an MDG-responsive national plan. In the same way, inputs were provided to the MDG Progress Report 2010 while determining the critical figures reflecting current progress on indicators for MDG targets.

CURRENT PROGRESS AND MDG TARGETS FOR 2015

This exercise reviewed the achievements made so far in attaining the MDG targets up to 2010, and a few new targets were set for 2015. Box 1 presents current progress and MDG targets for 2015.

If the government is able to manage resources and build institutional and policy capacity for implementation of the strategic interventions, most of the MDG targets can be met by 2015. The targets for full employment and climate change require strategic and accelerated efforts to be on track—requiring a joint effort from the government and development partners.

PROPOSED STRATEGIC INTERVENTIONS

The major focus of the proposed interventions is to accelerate efforts to achieve the targets of the MDGs by 2015. Furthermore, sensitization on rights, mobilization of local resources and cooperatives, and priority for small-scale climate-resilient interventions are the strategic approaches proposed for enhancing sustainable access to and quality of services.

The proposed strategic interventions are grouped into three categories: continue,

Box 1: Progress against MDG targets			
Goal	Indicator	Achievement 2010	Target for 2015
MDG 1	Proportion of population living on less than US\$ 1 per day (PPP) (%)	19.7	17
	Proportion of population below national poverty line (%)	25.4	21
	Proportion of employed people living on less than US\$ 1 per day (PPP) (%)	22	17
	Proportion of population below minimum level of dietary energy consumption (%)	36.1	25
	Proportion of underweight children aged 6–59 months > -2 SD (%)	36.4	29
	Proportion of stunted children aged 6–59 months > -2 SD (%)	46.8	30
MDG 2	Net enrolment rate in primary education (%)	93.7	100
	Survival rate to Grade 5 (%)	77.9	100
	Literacy rate for 15–24 years old (%)	86.5	100
MDG 3	Ratio of girls to boys at primary level	1	1
	Ratio of girls to boys at secondary level	0.93	1
	Ratio of women to men at tertiary level	0.63	1
	Ratio of literate women to men aged 15–24 years	0.83	1
MDG 4	Proportion of one-year-old children immunized against measles (%)	85.6	>90
	Under-five mortality rate (per 1,000 live births)	50	54 (38*)
	Infant mortality rate (per 1,000 live births)	41	34 (32*)
MDG 5	Maternal mortality ratio (per 100,000 live births)	229	213 (134*)
	Proportion of births attended by skilled birth attendant (%)	29	60
MDG 6	HIV prevalence among population aged 15–49 years (%)	0.49	0.35
	Clinical malaria incidence (per 1,000 population)	5.7	3.8
	Prevalence rate associated with TB (per 100,000 population)	244	210
	Death rate associated with TB (per 100,000 population)	22	20
MDG 7	Area under forest coverage (%)	39.6	40
	Proportion of population using improved drinking water source (%)	80.4	73
	Proportion of population using an improved sanitation facility (%)	43.0	53

reinforce and additional effort. Key strategic interventions for improving each MDG are: Goal 1) Poverty, employment and agriculture sector—increase income, employment and social protection, and improve soil fertility, livestock-raising practices, community storage facilities, mobilization of local resources and cooperatives, and research; Goal 2) Education sector—increase access to school for out-of-school children and build capacity of teachers for quality education; and promote literacy and market-oriented skills training; Goal 3) Gender issues—increase awareness, sensitization and capability of right-holders to know about their rights; scale up targeted interventions; develop targeted programmes for single women, widows, Dalit women and marginalized communities; and ensure gender mainstreaming in planning, implementation, monitoring and evaluation; Goals 4, 5 and 6) Health sector—strengthen immunization programme; strengthen integrated management of child

illnesses, reproductive and women's health, and control of HIV AIDS, malaria and tuberculosis; expand health insurance; and initiate effort for universal health coverage; Goal 7) A. Water and sanitation sector—improve quality and regular supply of drinking water; B. Environment sector—reduce exposure to environmental health impacts and increase investments in climate change; and C. Energy sector—provide enabling environment for small and medium hydropower projects with high potential to supply rural areas and local industries; and encourage micro-hydro generation with amendment in existing subsidy policy.

In addition, interventions in the road infrastructure sector include development of local road networks; promotion of public-private partnerships; and management of roads.

Details of strategic interventions for each MDG are presented in the annexes.

COST ESTIMATES FOR MEETING MDG TARGETS

An extensive costing exercise of the identified strategic interventions required to ensure attainment of Nepal's MDG targets by 2015 resulted in the following figures. These figures indicate resource requirements, availability and gaps for the five years from 2011 to 2015. On the whole, the estimation shows that there is a need of NRs 1,395.8 billion, an availability of NRs 944.4 billion and a gap of NRs 451.4 billion (Box 2).

For meeting MDG 1, the total resource requirement is NRs 380.0 billion, of which the funding requirement for poverty reduction and employment generation is NRs 308.0 billion, and for agricultural interventions to reduce hunger is NRs 71.9 billion. For attaining MDG 2, the funding requirement is NRs 344.5 billion, and for attaining MDG 3, the resource requirement is NRs 27.6 billion. The total funding requirement for MDGs 4, 5 and 6 is NRs 105.7 billion. For MDG 7, the funding requirement is NRs 273.7 billion, of which NRs 66.7 billion is for water supply and sanitation, NRs 38.9 billion is for environmental sustainability and climate change, and NRs 168.1 billion is for energy services. For the development of road infrastructure, the funding requirement is NRs 264.3 billion. A comparison between projected cost and projected available financial resources shows that there are serious funding gaps in all years between 2011 and 2015. The funding gap for 2011 is NRs 40.7 billion, for 2012 is NRs 58.4 billion, for 2013 is NRs 87.5 billion, for 2014 is NRs 132.9 billion and for 2015 is NRs 131.9 billion.

In the national context of low income and employment growth, leading to limited capacity for raising internal revenue, and the international context of shifting priorities for global resource allocation towards fighting global recession and climate change implications, the Government of Nepal has to make greater efforts to mobilize available resources optimally and double its efforts to acquire international financial and technical support through better performance and economic diplomacy.

Box 2: Resource Needs, Availability and Gaps to achieve targets of the MDGs for 2011-2015 (NRs in Billion)

Goal	2011-2015		
	Need	Availability	Gap
Goal 1	379.96	277.10	102.86
Goal 2 Education	344.501	167.32	177.18
Goal 3 Gender	27.59	12.62	14.97
Goals 4,5,6 Health	105.68	84.89	20.79
Goal 7	273.72	159.06	114.67
Road Infrastructure	264.35	243.38	20.97
Total	1,395.80	944.37	451.44

CONCLUSIONS AND RECOMMENDATIONS

Most of the MDG targets set for 2015 are likely to be met, as the government is committed to taking ownership of the proposed strategic interventions. While some targets have been already met, others related to employment, survival rate to Grade 5, ratio of girls to boys at tertiary levels of education and of literate women to men aged 15–24 years, percentage of births attended by a skilled birth attendant and universal access to reproductive health, and environment will be difficult to meet.

The estimated cost for implementation of strategic interventions is far more than the government is planning currently. It will be hard for the government to raise financial resources both internally and externally. The global recession and climate change have made international support less generous; therefore, Nepal will have to show higher development aid effectiveness to attract global funds.

The main driver for meeting MDG targets is national commitment. The government fully intends to take ownership and leadership of development strategies. It plans to adopt forward-looking macroeconomic policies that promote sustainable development and lead to sustained, employment-centric, inclusive and equitable, broad-based economic growth. It is committed to promoting national food security strategies that strengthen support for smallholder farmers and contribute to poverty alleviation. It also puts emphasis on participatory community-

led strategies in a decentralized process and align them with national development priorities and strategies. Promoting universal access to public and social services, providing social protection floors and improving capacity to deliver quality services equitably are also priority areas for the government . In the area of environment and climate change, the initiatives started in the TYP for

developing climate-resilient development planning will be taken forward through a systematic approach and brought under a multi-stakeholder action domain. The Monitoring and Evaluation Division of the NPC will have a unit to monitor the process and progress of MDG-related programmes and report to the Vice Chairperson of the NPC through appropriate channels.

ACRONYMS

AIDS	acquired immunodeficiency syndrome	FSW	female sex worker
ANC	antenatal care	GDP	gross domestic product
ANM	Auxiliary Nurse Midwife	GJ	gigajoule
ARI	acute respiratory infection	GNI	gross national income
ARV	antiretroviral	GPI	gender parity index
APP	Agricultural Perspective Plan 1997–2017	GEF	Global Environmental Facility
BCC	behaviour change communication	HepB	hepatitis B
BEOC	basic essential obstetric care	Hib	<i>Haemophilus influenzae</i> type B
BMI	body mass index	HIV	human immunodeficiency virus
BOT	build–operate–transfer	HMIS	Health Management Information System
CA	Constituent Assembly	IDU	injecting drug user
CBIMCI	Community-based Integrated Management of Childhood Illness	IEE	initial environment examination
CBNCP	Community-based Newborn Care Package	IMR	infant mortality rate
CBS	Central Bureau of Statistics	INGO	international non-governmental organization
CDM	Clean Development Mechanism	IRS	indoor residual spraying
CEDAW	Convention on the Elimination of All Forms of Discrimination against Women	JE	Japanese encephalitis
CEOC	comprehensive essential obstetric care	kWh	kilowatt hour
CER	certified emission reduction	LLIN	long-lasting insecticide-treated net
CSW	client of sex worker	LPG	liquid petroleum gas
DACC	District AIDS Coordination Committee	MCHW	Maternal and Child Health Worker
DDC	District Development Committee	MDG	Millennium Development Goal
DFRS	Department of Forest Research and Survey	MDR	multidrug resistant [TB]
DOR	Department of Roads	MEA	multilateral environmental agreement
DOTS	directly observed treatment short [course]	MLD	Ministry of Local Development
DPT	diphtheria–pertussis–tetanus	MMR	maternal mortality ratio
DWSS	Department of Water Supply and Sewerage	MOAC	Ministry of Agriculture and Cooperatives
ECD	early childhood development	MOE	Ministry of Education
ECOSAN	ecological sanitation	MOF	Ministry of Finance
EIA	environmental impact assessment	MOHP	Ministry of Health and Population
FCHV	Female Community Health Volunteer	MOWCSW	Ministry of Women, Children and Social Welfare
FHD	Family Health Division	MSM	men who have sex with men
		MTEF	Medium Term Expenditure Framework
		MW	megawatt
		NACC	National AIDS Coordination Committee

NAPA	National Adaptation Programme of Action	REDD	reducing emissions from deforestation and degradation
NCASC	National Centre for AIDS and STD Control	RTI SWAp	Rural Transport Infrastructure Sector-wide Approach
NDHS	Nepal Demographic and Health Survey	SACOSAN	South Asian Conference on Sanitation
NER	net enrolment rate	SBA	skilled birth attendant
NGO	non-governmental organization	SMC	School Management Committee
NIP	National Immunization Programme	SIP	School Improvement Plan
NMR	neonatal mortality rate	SSRP	School Sector Reform Plan
NPA	national plan of action	STI	sexually transmitted infection
NPC	National Planning Commission	TB	tuberculosis
NRB	Nepal Rastra Bank	TT	tetanus toxoid
NRs	Nepalese rupees (US\$ 1 = NRs 72 at 2010 constant prices)	TWG	Thematic Working Group
NTP	National TB Programme	TYIP	Three-Year Interim Plan 2007/08–2009/10
ORS	oral rehydration solution	TYP	Three-Year Plan 2010/11–2012/13
PAF	Poverty Alleviation Fund	U5MR	under-five mortality rate
PIP II	Priority Investment Plan II 2007–2016 [DOR]	UN	United Nations
PLWHA	people living with HIV and AIDS	UNCT	United Nations Country Team
PMTCT	prevention of mother-to-child transmission [of HIV]	UNDP	United Nations Development Programme
PNC	postnatal care	US\$	United States Dollar (= NRs 72 at 2010 constant prices)
PPCR	Pilot Project for Climate Change Resilience	VCT	voluntary counselling and testing
PPP	purchasing power parity	VDC	Village Development Committee
PSI	Population Services International	VHW	Village Health Worker
PTA	Parent–Teacher Association	VIP	ventilated improved pit latrine
		WFP	World Food Programme

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

Nepal has a population of 27.5 million, with 25.4 percent of the population living below the national poverty line (NPC 2010¹). Nepal's Human Development Index is 0.428, with a rank of 138 out of 169 countries (UNDP 2010).

At the Millennium Summit in September 2000, world leaders adopted the UN Millennium Declaration, committing their nations to a new global partnership for development and setting out a series of time-bound and quantified targets with a deadline of 2015 that are known as the Millennium Development Goals (MDGs).

Ten years later in September 2010, the MDG Summit was held to review progress, identify gaps and commit to a concrete agenda to achieve the MDGs. The outcome document of the Summit – *Keeping the Promise: United to Achieve the Millennium Development Goals* – reaffirms world leaders' commitment to the MDGs and sets out a concrete action agenda for achieving the Goals by 2015.

The Government of Nepal (GoN) is a signatory to the Millennium Declaration, and is making efforts to achieve the targets by 2015. As part of this global commitment, Nepal has pro-

THE MILLENNIUM DEVELOPMENT GOALS

Goal 1:	Eradicate extreme poverty and hunger
Goal 2:	Achieve universal primary education
Goal 3:	Promote gender equality and empower women
Goal 4:	Reduce child mortality
Goal 5:	Improve maternal health
Goal 6:	Combat HIV AIDS, malaria and other diseases
Goal 7:	Ensure environmental sustainability
Goal 8:	Develop a global partnership for development

duced three MDG progress reports, prepared with the wide participation of stakeholders that included ministries, UN agencies, bi/multilateral donors, I/NGOs, private sector and civil society organizations. The first progress report was prepared in 2002, followed by the second in 2005, and the third in 2010. In addition, the first MDG Needs Assessment for Nepal was prepared in 2005.

1.2 MDG TARGETS AND INDICATORS

Each MDG target is accompanied by specific indicators. Five main criteria guided the selection of indicators (UN 2003). The indicators should:

- ♦ provide relevant and robust measures of progress towards targets for the MDGs
- ♦ be clear/straight forward to interpret and provide a basis for international comparison

¹ NPC 2010, Poverty Measurement Exercise and Number of Poor in Nepal. Kathmandu: GoN/NPC.

- be broadly consistent with other global lists and avoid imposing unnecessary burden on country teams, governments and other partners
- be based on international standards, recommendations and best practices, to the greatest extent possible
- be constructed from well-established data sources, and be quantifiable and consistent in order to enable measurement over time

The list of goals, targets and indicators is presented in Annex 1, Table 1a.

1.3 MDG PROGRESS STATUS

Despite the political instability during the post-conflict period, the MDG Progress Report 2010 showed that Nepal has already exceeded a few MDG targets for 2015, e.g., proportion of population using improved drinking water source (attained 80 against the target of 73) and under-five mortality rate per 1,000 live births (attained 50 against the target of 54), whereas the ratio of girls to boys at primary level is already

met. Encouragingly, Nepal is close to reaching some targets by 2015, e.g., proportion of population living on less than US\$ 1 per day (PPP), proportion of population below national poverty line (%), net enrolment rate in primary education, ratio of girls to boys at secondary level, maternal mortality ratio (per 100,000 live births), and death rate associated with tuberculosis (TB) (per 100,000 of population). However, the issues of quality of service, inclusiveness and sustainability of these already achieved targets as well as targets close to being achieved may need accelerated efforts.

The status of progress against MDG targets is presented in Table 1.1. There are some targets that will be very difficult to achieve by 2015, e.g., proportion of population below minimum level of dietary energy consumption, proportion of underweight children aged 6–59 months > -2 SD, proportion of stunted children aged 6–59 months > -2 SD, survival rate to Grade 5, literacy rate for 15–24 year olds, proportion of births attended by skilled birth attendant, universal access to reproductive health, and proportion of population using an improved sanitation facility. To meet

Table 1.1: Progress against MDG targets

Goal	Indicator	Achievement 2010	Target for 2015
MDG 1	Proportion of population living on less than US\$ 1 per day (PPP) (%)	19.7	17
	Proportion of population below national poverty line (%)	25.4	21
	Proportion of employed people living on less than US\$ 1 per day (PPP) (%)	22	17
	Proportion of population below minimum level of dietary energy consumption (%)	36.1	25
	Proportion of underweight children aged 6–59 months > -2 SD (%)	36.4	29
	Proportion of stunted children aged 6–59 months > -2 SD (%)	46.8	30
MDG 2	Net enrolment rate in primary education (%)	93.7	100
	Survival rate to Grade 5 (%)	77.9	100
	Literacy rate for 15–24 years old (%)	86.5	100
MDG 3	Ratio of girls to boys at primary level	1	1
	Ratio of girls to boys at secondary level	0.93	1
	Ratio of women to men at tertiary level	0.63	1
	Ratio of literate women to men aged 15–24 years	0.83	1
MDG 4	Proportion of one-year-old children immunized against measles (%)	85.6	>90
	Under-five mortality rate (per 1,000 live births)	50	54 (38*)
	Infant mortality rate (per 1,000 live births)	41	34 (32*)
MDG 5	Maternal mortality ratio (per 100,000 live births)	229	213 (134*)
	Proportion of births attended by skilled birth attendant (%)	29	60
MDG 6	HIV prevalence among population aged 15–49 years (%)	0.49	0.35
	Clinical malaria incidence (per 1,000 population)	5.7	3.8
	Prevalence rate associated with TB (per 100,000 population)	244	210
	Death rate associated with TB (per 100,000 population)	22	20
MDG 7	Commercial energy use per unit GDP (toe/mRs)	3.7	-
	Area under forest coverage (%)	39.6	40
	Proportion of population using improved drinking water source (%)	80.4	73
	Proportion of population using an improved sanitation facility (%)	43.0	53

Source: Adapted from Nepal MDGs Progress Report 2010, NPC/UNCT, Nepal.
Note: * Revised for Nepal, ** toe = ton oil equivalent, mRs = million rupees.

all these targets may need a strategic shift of interventions. As meeting the MDGs targets is a shared responsibility of the concerned government and development partners, both internal as well as external resources should be channelled to fulfil the identified resource gaps.

Nepal needs to look beyond the achievements made so far in meeting the MDG targets. The main contributors to overall progress and government initiatives to propel trends in the right direction both need to be analysed. In addition, studies should be conducted to dig deeper into the structural disparities across ethnic, economic, social, geographic and gender categories to address hidden issues.

'Nepal's Progress Towards the MDGs: Status at a Glance, 2010' is presented in Annex 1, Table 1b.

1.4 OBJECTIVES AND SCOPE OF MDG NEEDS ASSESSMENT

The MDG targets, once agreed by states, are non-negotiable. Progress towards their achievement must be reviewed periodically and an assessment of needs conducted. The needs assessment is used to identify the strategic interventions still needed to meet the initially agreed upon targets, and presents an estimate of financial resources required to implement them. Nepal has already produced its first MDG needs assessment in 2006. The main objective of this MDG Needs Assessment and Costing Exercise is to assess comprehensively the financial, human and institutional resources required to implement strategic interventions needed to achieve the MDGs in various areas. The specific objectives are as follows.

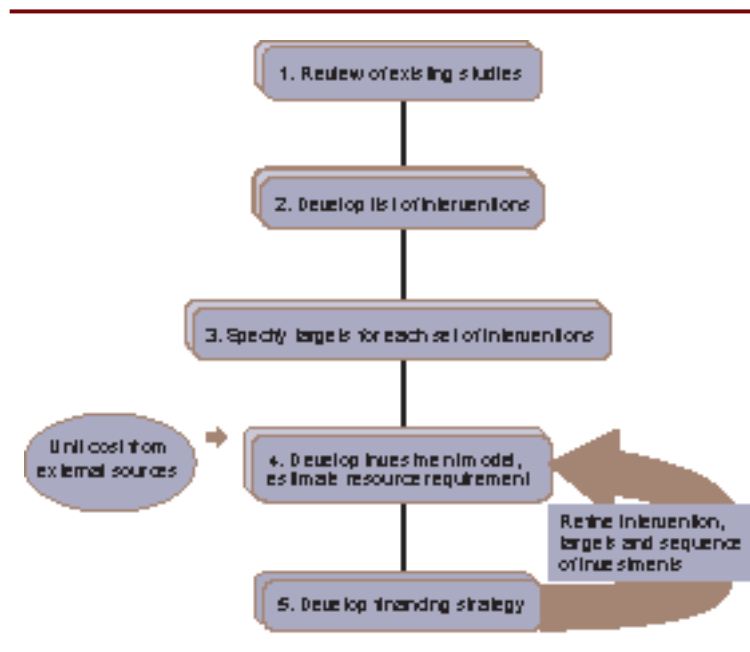
- ◆ Answer the question: What will it take to achieve the MDGs?
- ◆ Translate long-term goals into operational targets
- ◆ Develop a strategy for increasing 'absorptive capacity'
- ◆ Strengthen coherence between planning and budget processes
- ◆ Provide a monitoring and accountability framework
- ◆ Support the national policy dialogue and negotiations with development partners

1.5 METHODOLOGY FOR MDG NEEDS ASSESSMENT

As outlined in Figure 1.1, the needs assessment methodology entails five basic steps: review of existing status and studies, development of a list of interventions, specification of targets for each intervention, development of an investment model, and estimation of resources and development of a financing strategy. The focus of analysis is on identifying the range of interventions—defined broadly as the provision of goods and services as well as infrastructure—required for achieving the MDGs.

It is important to note the distinction between interventions and policies or institutions. Whereas technical interventions, such as the provision of antiretroviral drugs to treat HIV/AIDS or the construction of new schools to achieve the primary education goal, are crucial for developing an MDG investment plan, they are quite distinct from the policies or institutions that need to be used to deliver them. Since many different policies and institutions can conceivably deliver a specific intervention and differ significantly across countries, they can only be addressed in the context of detailed national planning processes and are thus not included here.

Figure 1.1: Methodology for MDG needs assessment



In the present context, the MDG Needs Assessment and Costing for Nepal is a joint initiative by the GoN and the United Nations Development Programme (UNDP) to estimate the resources needed for achieving Nepal's MDG targets within the next five years (2011–2015). The nodal agency for guidance, steering and execution of this exercise was the National Planning Commission (NPC). Nine thematic areas were chosen for the needs assessment: poverty and employment, agriculture (MDG 1), education (MDG 2), gender (MDG 3), health (MDGs 4, 5 and 6), environment, water and sanitation, and energy (MDG 7), and road infrastructure as Nepal's additional goal that could significantly contribute to achievement of the MDGs. A thematic working group (TWG) was formed for each area, consisting of representatives from major government institutions (ministries, departments, etc.) and other agencies relevant to each thematic area, to ascertain the progress achieved so far, review pertinent policies and strategies, identify challenges and constraints, assess the possibility of attainment of MDGs and develop a list of strategic interventions that will enable attainment of the revised targets. This was followed by the conducting of a costing exercise to assess the resources required for implementing the strategic interventions, the resources currently projected as available (using the GoN's Medium Term Expenditure Framework), and the resource gap that will need to be addressed for the attainment of the MDGs. Each TWG had a Thematic Leader, usually from the lead ministry of the respective thematic area, and a consultant to provide technical assistance for conducting all the responsibilities of the TWG. The costing of interventions was completed using costing models. A brief training on the use of these models, developed by the Millennium Campaign, was provided for members of the TWGs by experts contracted by the UNDP Nepal Office.

This exercise reviewed the achievements made so far in attaining the MDG targets up till 2010. In cases where initial targets have

already been met or areas where there are no formal targets, after consultations with contributing agencies, new or additional targets were set for 2015.

1.6 LIMITATIONS

- ◆ The needs assessment study and the preparation of the Three-Year Plan 2010/11–2012/13 (TYP) were conducted in the same period. Therefore, both needed to be compatible with each other's approach and targets. Hence, the targets for the last two years are on the higher side to attain the MDGs by 2015.
- ◆ Political instability, technological barriers, institutional bottlenecks and infrastructural constraints were limiting factors for setting high targets.
- ◆ Where basic data was publicly unavailable, analysis of unpublished official records and discussions with representatives of concerned offices as well as relevant experts were conducted instead.
- ◆ The template-based costing exercise limited the types of information that could be generated for the tabular results.

1.7 ORGANIZATION OF THE REPORT

Chapter 1 introduces the study and presents the background, MDG targets and indicators, progress status, objectives and scope of the needs assessment, and methodology and limitations of the study. Chapters 2 to 6 present for each MDG an overview of progress, quantification of annual targets, strategic interventions required to achieve targets, and estimates of resource requirements for implementation of strategic interventions. Chapter 7 includes road infrastructure, and Chapter 8 summarizes the resource needs for implementing all strategic interventions and attaining the MDGs by 2015. Chapter 9 completes the report with conclusions and recommendations.

CHAPTER 2

POVERTY, HUNGER AND AGRICULTURE

MDG 1: ERADICATE EXTREME POVERTY AND HUNGER

2a POVERTY, EMPLOYMENT AND HUNGER

2a.1 REVIEW OF PROGRESS, POLICIES AND STRATEGIES

2a.1.1 Review of Progress

Poverty alleviation has been the prime agenda of development efforts in Nepal since 1956 when the country started planned development. While the Ninth Plan (1997–2002) developed a 20-year framework for reducing poverty, the Tenth Plan (2002–2007), formulated as a Poverty Reduction Strategy Paper, was strongly committed to reducing poverty. This has resulted in a significant fall in poverty levels in recent years. The percentage of the population living below the national poverty line has decreased from 42.0 percent in 1996 to 30.8 percent in 2003 and to 25.4 percent in 2009 (CBS 2009). Despite this impressive record of more than 16 percentage points reduction in poverty since 1996, structural problems within the economy such as economic disparities, inequitable access to productive resources and means, distributional conflict and shortfalls in good governance still exist. Similarly, there is a huge difference in rural and urban poverty levels. Even though, the drop in the rate of rural poverty is encouraging (while urban poverty dropped by eight percentage points between 1995 and 2004,

rural poverty dropped by 12 percentage points), the socio-economic conditions of women, Dalit, Janajati, Madhesi, Muslims and the residents of the Karnali Zone are still far from encouraging. The extent of poverty is higher in these communities than in other communities.

Although poverty was reduced significantly in the Tenth Plan period, the growth target could not be achieved. While the average growth target for the Tenth Plan was 6.2 percent in favourable conditions and 4.3 percent in less favourable conditions, the actual growth rate could not cross 3.4 percent (NPC 2002 and NPC 2007). The annual average growth rate remained at 2.7 percent in the agricultural sector and 3.8 percent in the non-agricultural sector against the target of 2.8 percent and 5.2 percent. The Tenth Plan witnessed some structural changes in the economy. At the start of the plan in mid-2002, contributions of the agricultural and non-agricultural sectors to GDP were 37.4 percent and 63.5 percent, respectively; which changed to 33.1 percent and 66.9 percent, respectively, by the end of the plan period in mid-2007. Over the plan period, contributions to GDP from the non-agricultural sector that included transport, commerce, finance and real estate, and social services increased slightly, and those from industry, hotels and restaurants, and electricity, gas and water

decreased slightly. The projected average annual economic growth rate for the Three-Year Interim Plan (TYIP) (2007/08–2009/10) was 5.5 percent, which was estimated to give an increase in per capita income of 3.3 percent. Within overall growth, the agricultural sector was projected to grow by 3.6 percent and the non-agricultural sector by 6.5 percent. However, annual GDP grew on average by 3.7 percent in the four years between 2006 and 2009.

Nearly 11.8 million people, or 79.7 percent of the total working population (15.4 million), are employed domestically. Of these, about 16.9 percent of people of working age (15 years and above) are engaged in paid jobs and, of these, 68.2 percent are fully employed, 19.9 percent employed for half of their time and 11 percent are partially employed. On average, fully employed people are paid NRs 5,117 per month: men are paid an average of NRs 5,721 per month and women are paid an average of NRs 3,402 per month. Some 30 percent of the total current economically active population is classified as underutilized (CBS 2009).

Micro-enterprise development programmes are operating successfully in many rural areas. Similarly, as envisaged by the Tenth Plan, the Poverty Alleviation Fund (PAF) has been carrying out poverty reduction programmes in 55 districts of the country. As of mid-2009, a total of 9,954 community organizations with 456,015 members have been formed for poverty reduction activities under PAF. Among the total members, women comprise 15.4 percent and Dalits and other disadvantaged communities comprise seven percent. The PAF has implemented 9,150 income-generating projects, such as animal husbandry, vegetable farming, horticulture, fruit-processing, carpet-weaving, goat-raising, poultry, bamboo products, pig-farming and fish ponds among others. Similarly, community infrastructures such as water supply schemes, small irrigation, micro-hydro, rural roads and bridges, schools and health posts have been constructed under this programme, which also offer some employment opportunities. These projects have benefited 342,854 households, of whom

67.7 percent were extremely poor, 24.8 percent were moderately poor, 8.3 percent were poor and 0.2 percent were marginally poor (MOF 2009). However, there is still room for making its implementation more effective to bring better results.

Employment–income elasticity estimated for various industry groups shows that the wholesale and retail trade and the manufacturing sector have high employment–income elasticity, with a one-percent increase in employment in each of these sectors leading to a rise in income of 7.09 percent and 6.83 percent, respectively. The investment–employment elasticity estimate for the period between 1995 and 2009 appears to be 0.7 in the presence of auto correlation and 0.4 after improvement of autocorrelation. This means a one-percent increase in the level of investment would lead to a 0.4-percent increase in employment (Annex 2, Table 2a).

Employment is created through various programmes such as skills-enhancement training, entrepreneur development programmes, credit, inputs, technology and market linkages among others. During the TYIP period, 64,716 people received vocational and skills development training from government-managed programmes. Of these, 35,500 were women (MOF 2009).

The government has put a stronger emphasis on social security, by increasing the budget for social programmes targeting senior citizens, single women, widows, and persons with disabilities. In addition, the government has provided a grant for child nutrition in the Karnali area and other marginalized areas; however, this is yet to be effective.

Even though significant progress has been achieved in reducing poverty, the achievements in reducing hunger are far from satisfactory. With more than 35 percent of the population below the minimum level of dietary energy consumption and about 47 percent of children aged under five years stunted (an effect of chronic under-nourishment). Achieving the MDG targets related to hunger appears to be a daunting task.

2a.1.2 Review of Policies and Strategies

Considering poverty as one of the most serious challenges, the Ninth Plan (1997–2002) had set poverty alleviation as its main objective and interlinked it with development sectors. Specific policy and programme measures were also implemented, which contributed to reducing poverty by 11 percentage points, helping it to come down from 42.0 percent in 1996 to 30.8 percent in 2003. Poverty alleviation was also a main objective of the Tenth Plan (2002–2007) by optimally mobilizing the means and resources, through the mutual participation of the government, local agencies, NGOs, private sector and civil society, to extend economic opportunities and open new environment that enlarged employment opportunities. All these contributed to bringing the poverty ratio down to 25.4 percent by 2009. The Approach Paper for the TYP has the objective of reducing existing inequality and poverty in the country by increasing dignified and profitable employment opportunities through the expansion of inclusive, productive and targeted programmes.

For foreign employment, the government devised the Labour and Employment Policy 2005, following guidance in the Tenth Plan/PRSP. It introduced special regulations—the Foreign Employment Act 2007 and Regulations 2008—to regulate and streamline the labour and employment sector, and to protect the rights of employees and provide them with security.

Since the 1990s, the government has tried to ensure food security through growth in agricultural production by implementing the Agriculture Perspective Plan (1997–2017). This was further re-strengthened in the TYIP. In addition, The Approach Paper for the TYP has the objectives of enhancing the contribution of the agriculture sector to food and nutritional security, employment generation and poverty reduction, and improving the economic status of rural people by increasing the production and productivity of agriculture and livestock commodities.

The Interim Constitution of 2007 has recognized the right to food security and sovereignty as a basic human right, although this is yet to be enacted with appropriate legislation and its implementation is not yet clear.

2a.2 NEEDS ASSESSMENT

2a.2.1 Gap Analysis

2a.2.1.1 Poverty Reduction and Employment

The economy should grow in order to provide jobs to an increasing working population. However, economic indicators do not provide an encouraging picture over the past few years, with substantial gaps between targets and achievements. For example, national economic growth was targeted at 5.5 percent in the TYIP, while achievement was 4.5 percent. The same trend can be seen in both the agricultural and non-agricultural



sectors. Investment in the economy is weak. Both foreign direct and domestic investments have fallen. With declining exports and increasing imports, the trade deficit with major trading partners has increased (MOF 2009/10). This has resulted in a most daunting challenge of increasing national income and breaking the vicious circle of poverty. This can only be accomplished with a higher level of employment generation through greater investment and growth in order to provide more jobs to an increasing working population. To encourage an environment conducive for investment, participation of the private sector needs to be ensured. Confidence among private investors needs to be boosted, and the competing politico-economic ideologies need to be reconciled. A sense of security regarding rights over private property needs to be established. As the private sector and the cooperatives are concentrated in relatively accessible areas and market centres, the government should maintain its presence in remote areas, where people have little access to services including markets.

Despite of being the most prioritized issue, poverty has not been reduced as desired over the last few decades. The following paragraphs identify the gap for MDG targets between 2010 and 2013 and 2015 for poverty reduction and employment.

MDG Target 1A on eradication of extreme poverty

The proportion of the population below the national poverty line is 25.4 percent in 2010, and expected to be 21.0 percent in 2013, while the target for 2015 is also 21.0 percent (Table 2.1). Similarly, the proportion of the population living on less than US\$ 1 per day, which is based on the ratio of the population below the poverty line for the period 2004 to 2010, is 19.7 percent in 2010, and projected to reach 16.4 percent in 2013, while the MDG target is 17 percent for 2015. The trend of progress and target is presented in Table 2.1.

The indicator on poverty line (Table 2.1) shows that poverty has to be reduced by 4.4

percentage points between 2010 and 2015. Although there was a huge decline in poverty from 1996 to 2003, the rate of decline was 5.6 percentage points between 2004 and 2009. Given this scenario, there is a need for sufficient interventions to achieve the MDG target on poverty reduction.

MDG Target 1B on employment

The MDG target on employment is to achieve full and productive employment and decent work for all, including women and young people. The proportion of employed people living on income less than US\$ 1 per day is 22.0 percent in 2010, and targeted to reduce to 17.8 percent in 2013 and 17.0 percent by 2015. The output per person employed at constant 2005 PPP is attainable. Keeping the target for 2015 constant, the target for 2013 is estimated to be US \$ 2,120 (Table 2.2).

Table 2.2 presents the scenario of employment situation in the country in different years. The MDG target seems to be unachievable, given the long transition causing closure of industries and insufficient investment in the productive sector. However, the target for the proportion of employed people living on less than US\$ 1 per day (PPP) is likely to be achieved.

2a.2.1.2 Hunger

The immediate impact of poverty can be seen in the hunger of an individual or a household. The poorer the individual or household, the more hunger in that family. Hence poverty analysis remains incomplete without analysing hunger. The MDG targets on hunger are attainable for only two indicators, i.e., proportion of population below minimum level of dietary energy consumption and proportion of underweight children aged 6–59 months. It will be difficult to achieve the target for proportion of stunted children aged 6–59 months, even with the accelerated programme. For underweight children, the target for 2013 will be 30.9 percent at present trends. For stunted children, the target in 2015 is 30 percent. It will thus require great efforts and more resources to achieve.

MDG Target 1C on hunger

The MDG on hunger is to halve, between 1990 and 2015, the proportion of people who suffer from hunger. The MDG target is given in Table 2.3.

Table 2.3 indicates that it is difficult to achieve the MDG targets on hunger by 2015 with the current slow rate of progress. Prevalence of stunting among children aged 6–59 months is estimated at 46.8 percent, which reflects a very serious situation considering that stunting in children is understood to bring long-term impediments to physical as well as mental development affecting lifelong productivity. Such a high prevalence of stunting is thus a very critical issue for the nation.

Food security assessment requires four dimensions to be addressed: availability (production of food); access (economic and social access to food); utilization (process of food preparation); and hygiene and sanitary conditions. The status and trends of agricultural production, employment, and the degree and change in inclusion and justice also help in measuring food security. It is also linked with social protection given by the government. The World Bank Framework analyses of household food production for consumption, capacity to purchase or exchange food and equitable distribution of food as the main factors determining food and nutritional needs of individual members of households have been examined. Food security has temporal and spatial dimensions (i.e., due to road inaccessibility). It can also be chronic or transitory. The first is due to poverty, mal-distribution and other structural causes, while the second is the result of economic shocks and unpredictable events such as floods, other disasters and price rises.

The production of Nepal's main staple crops—rice, maize, wheat and millet—show differing trends. Rice is the main staple followed by maize, wheat and millet. Over the

Table 2.1: Trends and targets of poverty indicators

Indicator	1996	2004	2010	2013 target*	2015 MDG target
Proportion of population living on less than US\$ 1 per day (PPP) (%)	33.5 ^a	24.1 ^b	19.7 ^c	16.4	17
Proportion of population below national poverty line (%)	42 ^a	31 ^b	25.4 ^c	21	21
Poverty gap	n/a	7.6	6.1	n/a	n/a

Source: a. CBS 1996; b. CBS 2004; c. CBS 2009; * NPC 2010a.

Table 2.2: Trends and targets of employment indicators

Indicator	1996 ^a	2001 ^b	2004 ^c	2010 ^d	2013 target ^e	2015 MDG target
Proportion of employed people living on less than US\$ 1 per day (PPP) (%)	34	NA	24	22	17.8	17
Output per person employed at constant 2005 PPP (US\$)*	647	790	969	1,500	2,120	1,920

Source: a. CBS 1996; b. NPC/UNCT 2010; c. CBS 2004; d. CBS 2009; e. NPC 2010.

Note: *Calculated on the basis of NRs 5,000 per month for fulltime work (40 hours) at NRs 72 per US\$1.

Table 2.3: Trends and targets of hunger indicators

Indicator	2006 ^a	2010 ^b	2013 target ^b	2015 MDG target
Proportion of underweight children aged 6–59 months > -2 SD (%)	38.6	36.4	30.9	29
Proportion of population below minimum level of dietary energy consumption (%)	-	36.1	30.9	25
Proportion of stunted children aged 6–59 months > -2 SD (%)	49	46.8	38.5	30

Source: a. MOHP et al. 2006; b. NPC 2010.

years, rice production has declined, while the rate of growth for the other three crops has increased slowly. However, growth of overall agricultural output has declined, and is only slightly above the population growth rate.

Nepal's average food availability balance shows regional and seasonal variation. Between June 2008 and July 2009, 40 of Nepal's 75 districts were projected to have food deficits. Overall, the Tarai region has a food

surplus (with production 11 percent greater than required). The other two regions—Hills and Mountains—face net deficits of 14 percent and 19 percent, respectively. As a whole during this period, the production balance was negative by 2.5 percent or 133,000 metric tonnes of cereal (MOAC *et al.* 2009).

Food prices have also risen because of the increase in transportation costs as a result of the price hike in petroleum products in the world market as well as increasing demand for food. The impact of this as well as unprecedented global food price hike was particularly hard in mid-2008 when price hikes caused a severe shortage of petroleum products in Nepal. Global food crisis was experienced in 2008/09 as a result of unprecedented rise in food prices, global financial crisis and impacts of climate change. The impact of price increases on household food security and livelihoods is yet to be fully assessed. A study in 2008 by the World Food Programme (WFP) and Nepal Development Research Institute (NDRI) in the context of soaring food prices suggested that households with different income levels are differentially impacted by the rise in food prices and also adopt different coping strategies in response to the hike in food prices. The general coping strategies were to borrow money for food consumption, rely on less expensive and less preferred food, spend accumulated domestic savings on food consumption, or migrate out of the area. It also concluded that people living below the poverty line are the ones most vulnerable to rising food prices.

In Nepal, major food items move from south to north, with vegetable and fruit production moving to the Middle Hills and other domestic and external markets. The difficult terrain and lack of an adequate transportation network hinder markets from functioning properly. Even when there is surplus in some areas, it does not necessarily move to deficit areas; rather it may move to other

areas that are more accessible or even across the border to India. The open border acts both as a safety valve for meeting emergency and long-term deficits in food as well as a hurdle to the development of efficient domestic markets. Studies on trade and food security have stressed that liberalization has helped to reduce hunger. In Nepal, they suggest that local production of food that has a higher comparative price combined with better integration of markets and reliable transportation networks is the best way to ensure food security (Pandey 2009 as cited in NPC/UNCT, 2010). An open economy can assure food security at a national level as long as national and household incomes are sufficient to pay for higher prices.

Differential access to food is also a social problem. Social discriminatory behaviour, taboos and beliefs still prevent some segments of the population from accessing certain types of food that have higher nutritional values. In South Asia including Nepal, there are some communities where girls receive less food than boys, and women eat less nutritious food than men (WFP 2001). The Nepal Demographic and Health Survey (NDHS) 2006 reports that over 24 percent of women aged 15–49 years are undernourished (MOHP *et al.* 2007). This figure is much higher for women in the Tarai overall, where 33 percent are undernourished. However, in the western and far western Tarai it is 37 percent. Interestingly, women who have obtained a School Leaving Certificate or higher education are taller than women with no education, indicating that nutritional status for women is strongly correlated with their educational attainment. Therefore, focus should be given to gender disparity in access to food. Crisis or emergencies perpetuate the differential access to food discriminating women. In addition, there is evidence that these discriminations vary seasonally: in some seasons, women are doubly burdened with more work and less food.

2a.2.2 Challenges and Constraints

Economic indicators for Nepal do not give an encouraging picture: investment has fallen, trade deficits have largely increased. This has created a number of challenges in meeting the MDG targets for poverty reduction, employment and reduction in hunger. Obviously, there are some constraints to meeting those targets as well.

Challenges:

The major challenges to fill the gaps of current status and the MDG targets are as follows.

- ◆ Generating higher levels of employment opportunities to meet the increasing working population
- ◆ Increasing investment for employment generation programmes
- ◆ Maintaining incentives to attract foreign and domestic investment
- ◆ Building the confidence of domestic workers to work in the country
- ◆ Ensuring equitable distribution of the benefits of the country's economic resources
- ◆ Ensuring equal wage and same outputs for similar jobs
- ◆ Increasing investment in infrastructure development
- ◆ Ensuring year-round food security for all, especially in food-deficit districts
- ◆ Increasing food production
- ◆ Raising awareness of the people on appropriate food habits so that people do not stick with a single staple food such as rice
- ◆ Maintaining buffer stocks of food for emergency situations
- ◆ Ensuring timely supply of inputs and establishing a strong market network for agricultural production
- ◆ Ensuring nutritional security along with food security
- ◆ Enhancing accountability and good governance

Constraints:

The major constraints are as follows.

- ◆ Unfavourable investment environment—at both macro and micro levels
- ◆ Difficult terrain, barring proportionate infrastructure development in the country



- ◆ Inadequate resources—both skilled human and financial resources
- ◆ Insufficient social protection strategies and programmes
- ◆ Weak coordination among sectoral ministries and departments
- ◆ Increasing threats posed by global climate change
- ◆ Insufficient adaptive capacity to cope with the impact of climate change

2a.2.3 Strategic Interventions

Based on the challenges and constraints identified in the previous section (2A.2.2), the following strategic interventions are needed.

Continue:

- ◆ Increased participation of target groups in targeted income-generating activities, targeted employment programmes, and decision-making levels

Reinforce:

- ◆ Empowerment programmes through vocational training and skills enhancement
- ◆ Micro-credit programmes
- ◆ Promotion of cooperatives
- ◆ Employment guarantee schemes
- ◆ Training for productivity improvement
- ◆ Community-based entrepreneurship training

- ◆ Micro-enterprise development programmes for self-employment
- ◆ Programmes for senior citizens, widows, single women, persons with disabilities, youth and children
- ◆ Food sovereignty, security and quality
- ◆ Effective monitoring and evaluation

Additional effort:

- ◆ Rural-urban linkage programmes
- ◆ Labour market regularization and strengthening
- ◆ Regularization of informal sector activities
- ◆ Encouragement for labour-intensive investment
- ◆ Re-orientation of local market
- ◆ Encouragement for private sector involvement
- ◆ Employment-oriented large-scale projects
- ◆ Housing programmes for selected marginalized communities
- ◆ Cooperative programme
- ◆ Crop shifting towards producing high-value crops
- ◆ Demand-based trainings for foreign employment
- ◆ Productive use of remittances
- ◆ Promotion of indigenous skills and products, and development of markets for such products

The details of proposed strategic interventions for MDG 1 are given in Annex 2, Tables 2b and 2c.

2a.2.4 Resource Needs and Gaps

2a.2.4.1 Resource Needs

Increasing income levels, creating employment and providing social security are instrumental for addressing MDG 1. This requires launching strategic interventions for targeted skills-enhancing and income-generating activities including micro-enterprises in 22 remote districts as defined by the government. The provision of social security constitutes a very large share of resource needs, as does food assistance.

The estimated resource requirement is based on programme coverage of various types

of beneficiaries. It varies from 2.88 million in 2011 to 16.14 million in 2015 (Annex 2, Table 2e).

Resource needs for MDG 1 are estimated at NRs 47.3 billion in 2011, increasing to NRs 78.6 billion in 2015 (Table 2.4). Total resource needs come to NRs 308.0 billion. Resource needs for social security includes pension, gratuity, allowance to senior citizens, widows, persons with disabilities, etc. The food subsidy is estimated at NRs 10.9 billion in 2011, which is 23.1 percent of total requirement (Annex 2, Table 2f); it will decline to 14.4 percent in 2015. Pension and gratuity is expected to increase from 30.6 percent in 2011 to 46.4 percent in 2015.

Resource availability for the five year is NRs 235.4 billion (Table 2.5).

2a.2.4.2 Resource Gaps

Table 2.5 shows that resources available for interventions are estimated at NRs 38.4 billion in 2011, increasing to NRs 58.2 billion in 2015 (Table 2.5). Available resources are estimated to be NRs 126.2 billion over the TYP period, and 235.4 billion over the five-year period.

Government resources will not be sufficient to meet all the requirements for attaining MDG 1 by 2015, although the finances required for many activities will be met from internal sources, especially for social security (pension, gratuity, and transport subsidies and cash transfers for marginalized sections of society). The government will be able to meet 57.1 percent of resource requirements from internal sources in 2011 rising to 70.2 percent in 2015. Over the TYP period, 78.7 percent of total resource needs, will be met and, over the five-year period, 76.4 percent will be met. Comparing resource needs and available resources, the resource gap is NRs 8.9 billion for 2011, NRs 34.1 billion for the TYP period, and NRs 72.6 billion for the five-year period from 2011 (Table 2.6), for which the government will have to rely on external sources.

Table 2.4: Resource needs for attaining MDG 1 (NRs in millions)

Intervention	2011	2012	2013	2014	2015	Total
Employment and income generation *	11,412	12,996	13,796	16,232	17,290	71,726
Social security	9,847	10,490	11,259	12,064	12,946	56,605
Delivery in health institutions	256	287	321	360	405	1,630
Food-related transport subsidy	10,911	11,000	11,095	11,193	11,295	55,494
Housing for poor	375	300	250	225	200	1,350
Pension, allowance and gratuity **	14,484	18,249	22,994	28,972	36,505	121,205
Total	47,285	53,323	59,715	69,046	78,641	308,010

Note: * In order to avoid double counting, the estimates do not include the provision of expenditure provision of other thematic areas such as water and sanitation, road, education, agriculture, hydropower, gender and health (except incentives for delivery cases) etc. made in Medium Term Expenditure Framework, 2010, NPC.

** Pension allowance and gratuity is estimated to increase 26 percent annually to capture usual growth and new retirement.

Table 2.5: Resource availability for attaining MDG 1

(NRs in millions)

Intervention	2011	2012	2013	2014	2015	Total
Employment and income generation	10,917	11,883	11,179	11,313	11,449	56,741
Social security	8,948	9,502	10,029	10,618	11,241	50,339
Delivery in health institutions	783	820	873	921	972	4,370
Food-related transport subsidy	2,325	1,550	78	14	3	3,970
Housing	607	622	816	945	1,096	4,086
Pension, allowance and gratuity	14,840	18,150	22,262	27,266	33,396	115,914
Total	38,420	42,527	45,237	51,078	58,156	235,419

Table 2.6: Resource gaps for attaining MDG 1

(NRs in millions)

Particular	2011	2012	2013	2014	2015	Total
Need	47,285	53,323	59,715	69,046	78,641	308,010
Availability	38,420	42,527	45,237	51,078	58,156	235,419
Gap	8,865	10,796	14,478	17,968	20,485	72,591

2a.3 CONCLUSIONS

Poverty reduction is the most important priority on Nepal's development agenda. The MDG target of poverty reduction is achievable if the recommended strategic interventions are effectively implemented. However, the targets of reducing unemployment and hunger seem to be unachievable without strategic policy and programme interventions. On the basis of the proposed inter-

ventions, the resources needed are estimated. It is estimated that the resource needs for unemployment and hunger for the TYP period are NRs 160.3 billion and, for the five-year period to 2015, are NRs 308.0 billion. Available resources can cover 78.7 percent and 76.4 percent of total resources needed to achieve MDG targets for the TYP period and five-year period, respectively. It is estimated that government sources covers only 64.7 percent and 67.0 percent of resource needs for the TYP period and the five-year period, respectively.

In addition to the provision of resources, some interventions are needed to reduce poverty. Employment generation schemes should be tied with skills development programmes and with development programmes in areas lagging behind in most development indicators such as, the Karnali zone, other hill and mountain districts of the Mid - and Far - Western Regions, and many Terai districts. The employment guarantee scheme should be introduced for people living in extreme poverty with the provision of a minimum wage. In other areas, productive employment should be generated. Similarly, coordination among sectors and agencies is essential to implement poverty- and employment-related activities in a more efficient way. Moreover, the clear linkages between macro- and micro-level activities should be established to reduce individual and national poverty.

Boosting agricultural production as well as creating other income opportunities is vital for reducing poverty as well as hunger. In addition, provisions of safety nets for the vulnerable populations should be maintained and further enhanced.

2b AGRICULTURAL DEVELOPMENT

2b.1 REVIEW OF PROGRESS, POLICY AND STRATEGIES

2b.1.1 Review of Progress

The MDG indicator to which performance of the food and agriculture sector contributes most is the 'proportion of undernourished population'. This indicator measures Target 1A, which is 'to halve, between 1990 and 2015, the proportion of people who suffer from hunger'. The target set for Nepal was to reduce this to 25 percent by 2015 from 49 percent in 1990. Although recent data on the indicator is unavailable, Nepal's MDG Progress Report 2010 suggests that, given current trends, it is likely that the target will not be achieved unless serious additional efforts are made.

2b.1.2 Review of Policies and Strategies

The broad policy framework for attaining the goals of reducing poverty and food insecurity in Nepal places importance on gains in farm productivity, agricultural growth and household incomes. The Agricultural Perspective Plan 1997–2017 (APP) emphasizes growth in agriculture through technological innovation, thereby increasing supply. This, together with multiplier-induced rural income growth that would enhance the access of rural households to the increased food supply, constituted the essence of the APP's food security strategy.

Subsequent medium-term periodic plans and policies (including the National Agriculture Policy 2004 and TYIP) are based on the APP and share the common thread of agricultural commercialization and diversification for inducing vibrant agro-based economic activities for income, employment and livelihoods. These policies have also laid complementary emphasis on inclusion and the need for focus on smallholder farmers and other disadvantaged groups. Resource sustainability is highlighted as well. The

National Fertilizer Policy 2002 broadened the definition of fertilizer to include organic, chemical and microbial substances that supply essential nutrients to plants. It promoted the Integrated Plant Nutrition Management System (IPNMS) to maintain soil fertility through the minimization of soil degradation and the reduction of negative impacts from chemical fertilizers. Following a Cabinet decision in March 2009, the government reintroduced a price subsidy on chemical fertilizer for a limited amount of 100,000 tonnes annually. The APP Implementation Action Plan 2007 has embraced the contextual changes that have occurred since formulation of the APP, including the Millennium Development Agenda.

As MDG 1 addresses hunger, its focus is directed specifically at resource-poor, smallholder farmers. This focus is implicit in the generic intervention package recommended by the UN Hunger Task Force Report (UN Millennium Project 2005a and 2005b). The generic list of some 25 interventions recommended by the UN Millennium Project has been grouped into five areas, namely agricultural productivity, nutrition, productive safety nets, income and markets for the poor, and conservation of natural resources.

The policy strategies of other related sectors, while mainly drawing their linkage with the agricultural sector through the lens of the APP, are also mindful of inclusion and the needs of small farmers. For example, the Irrigation Policy 2003, while taking APP's thrust on year-round farmer-controlled irrigation systems into account, argues further towards a need for expanding irrigation facilities even to marginal land, and also lays emphasis on development of non-conventional irrigation systems for small command areas such as rainwater harvesting, pond, sprinkler, drip, treadle pump and other irrigation systems, collectively grouped under New Irrigation Technology Projects.

2b.2 NEEDS ASSESSMENT

2b.2.1 Gap Analysis

Projecting the trend observed during the period 1992–2004, this study has estimated that the ‘proportion of undernourished population should have declined to 36.2 percent by 2009 and could reach 35.4 percent by 2010². If this trend were to continue, the proportion of undernourished population could fall to 31.5 percent by 2015. Figure 3.1 portrays the wide gap between the initial target and the likely achievement at current trends.

If the target is to be achieved, the rate of decline needs to speed up to approximately seven percent per year during the remaining period; this is more than double the existing pace. Acceleration on such a substantial scale would call for equally substantial and focused interventions.

2b.2.2 Challenges and Constraints

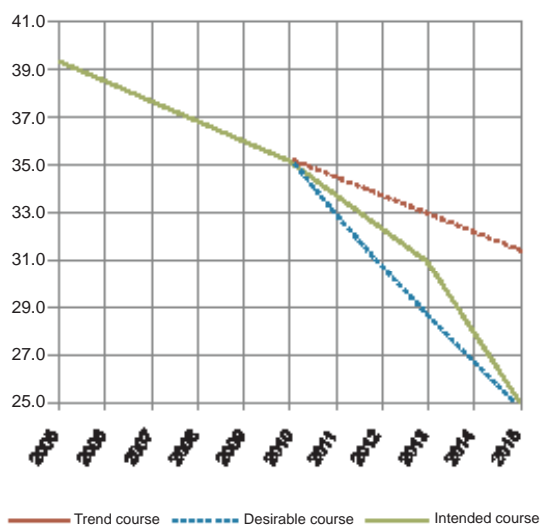
Challenges:

- ◆ Making speedy progress in addressing both chronic and transitory food insecurity at regional and household levels for achieving the hunger target
- ◆ Narrowing the gap between what is likely at current trends and what is desirable to hit the target in the stipulated time
- ◆ Sustaining and accelerating present achievements
- ◆ Reducing vulnerability and maintaining the food security of marginal populations.
- ◆ Identifying and reaching deeper into the unreached through targeted programmes to bring the hardcore people suffering from hunger above the threshold
- ◆ Restructuring existing programmes for poverty reduction, employment generation and improved agricultural production

² This estimation was made by fitting an autoregressive model projecting the trend observed during the period 1992–2004.



Figure 3.1: Decline in hunger



- ◆ Making available quality seeds/breeds on time and in place
- ◆ Improving extension services at the community level
- ◆ Increasing private-sector involvement in the agricultural sector
- ◆ Developing and making effective land-use plans
- ◆ Making reliable irrigation services available

Constraints:

- ◆ Small and shrinking farm sizes and cultivation of marginal lands
- ◆ High incidence of poverty among small farmers
- ◆ Foreign-country migration of farming youth/agricultural labourers
- ◆ Inadequate resource allocation for agricultural research and development
- ◆ Limited agricultural extension services down to the community level
- ◆ Inadequate supply of agricultural inputs—quality seeds, chemical and fertilizers
- ◆ Lack of marketing for food/fruit products in remote areas
- ◆ Effects of climate change and technological gaps
- ◆ Less diversified production and consumption patterns

- ◆ Inefficient cultural practices in the processing, preparation and consumption of food
- ◆ Rapid food price rises and high supply costs

2b.2.3 Strategic Interventions

The challenges and constraints outlined above imply that there is the need for focused intervention packages with targeted coverage. Taking this into consideration as well as the recommendations of the MDG Progress Report 2010, the following key interventions are proposed.

Continue:

- ◆ Augmentation of crop and livestock productivity
- ◆ Expansion of irrigation facilities with appropriate technology
- ◆ Provision of improved seeds, fertilizer and required tools in time
- ◆ Improvements to agricultural extension

Reinforce:

- ◆ Augmentation of agricultural productivity, food safety and nutrition
- ◆ Protection of plants/crops through appropriate pesticides and practices
- ◆ Improved fisheries and beekeeping practices through improved fish ponds and beehives
- ◆ Medium- and large-scale irrigation projects with appropriate technology

Additional effort:

- ◆ Promotion of appropriate sustainable technology
- ◆ Breeding and seed security
- ◆ Linkages to markets, trade and finance
- ◆ Creation of off-farm employment opportunities to augment farm incomes
- ◆ Soil fertility improvement and sustainability through improved seeds/seedlings
- ◆ Chemical and organic fertilizers and good agricultural practices
- ◆ Community storage and access by poor rural households to microcredit
- ◆ Cooperatives for the financing of farm and off-farm activities

- ◆ Micro-insurance for piloting and scaling up crop and livestock insurance schemes
- ◆ Agro-processing systems at community level
- ◆ Restructuring existing programmes for increased productivity
- ◆ Community-/cooperative-based farming and the development of systematic land reform plans and programmes
- ◆ Scientific land reform policy
- ◆ Development of cluster settlements
- ◆ National research interventions

Following the UN Millennium Project framework, intervention packages have been organized under four categories: farm level, community-based, national level and small-scale irrigation.

Details of strategic interventions are presented in Annex 2, Table 2d.

2b.2.3.1 Targets

It is obvious that achieving the original targets set for Nepal poses a daunting challenge. However, the pace of progress could be substantially accelerated compared to the current trend. Assuming enhanced resource and policy commitments are forthcoming, the suggested targets for the proportion of population below minimum level of dietary energy consumption for 2010, 2013 and 2015 are 36.1, 30.9 and 25.0 percent, respectively (Table 2.3).

The indicator on the proportion of the population below the minimum level of dietary energy consumption is optimistically expected to fall to around 30.9 percent by 2013. The underlying basis for this optimism takes into account, among other things, the TYP's target of increasing food production, its emphasis on an employment-oriented and more inclusive development strategy, and the bringing of more people into safety nets and social security schemes. This compares with a desired level of 28.3 percent by 2013, and would require greater acceleration during the remaining two years.

Moreover, there is an emergent need for interventions to focus on the resource poor,

vulnerable and unreached. In this context, smallholder farmers with less than 0.5 ha have been identified as the target population for agricultural interventions.

While the need for growth in the entire farming sector is well recognized as necessary for boosting overall food availability and income growth to access food that is available, this should be addressed through interventions that benefit all farmers with interventions such as commercialization, access and connectivity. Efforts on these fronts need to be continued and scaled up generally. Even if these efforts are assumed to be continued on a regular basis, the interventions identified above for consolidating and penetrating MDG achievements will take the form of targeted packages focusing only on smallholders to make the desired impact.

2b.2.4 Resource Needs and Gaps

2b.2.4.1 Resource Needs

Table 2.7 shows that, over the next five years, about NRs 72 billion are needed to implement interventions targeted at smallholder farmers. The resource needs consist of government revenue as well as resources available from external sources channelled through government budgetary processes.

The limited asset base of smallholders for productive farm activities necessitates that they be supported with greater emphasis on community and national intervention packages. Keeping this in mind, and not deviating much from existing practice, subsidies of at least 50 percent on inputs (such as fertilizers, seeds, plant protection materials) and 100 percent on services (such as veterinary services and artificial insemination) have been used as a basis for allocating sources of financing. The currently practiced ratios for capital subsidies (such as for farm animals, sheds and equipment) have also been followed; this is likewise for community interventions with 85 percent public-sector support for capital investment, and 100 percent support for national extension and research-related interventions.

The above financing plan implies that for farm-level interventions, nearly a quarter will have to come from public expenditure sources, while three quarters will still be raised by farmers themselves. In contrast, nearly 80 percent required for community-based interventions and just under three quarters for small-scale irrigation will have to come from public expenditure sources. The full cost of national interventions will, obviously, fall on the public sector.

The predominance of support for the livestock subsector within farm-level interventions is explained by the fact that it includes the full capital costs of animals provided to poor farmers and partial support on other capital costs, while the crop subsector includes partial support on only the recurrent costs for inputs. In addition, the scale of

crop inputs is contingent on the number of hectares reached, which is small, while the scale of livestock inputs is determined by the number of households reached. Furthermore, it should also be noted that the costing tool computes the cost of apiculture and aquaculture under the livestock subsector, unlike common practice in Nepal.

Community infrastructure such as storage, community centres and minor connectivity structures are the major cost components in community-level interventions. Connectivity-related structures include only local and very minor structures (e.g., culverts).

The scaling up of research and extension activities is expected to receive adequate funding for addressing the technology issues and concerns of smallholder farmers.



Table 2.7: Resource needs for attaining MDG 1 (Agriculture)
(NRs in millions)

Particular	2011	2012	2013	2014	2015	Total
Farm interventions						
Crop input costs	1,328.6	1,540.1	1,757.0	1,985.5	2,222.8	8,834.0
Livestock input costs	3,910.0	4,810.9	5,798.4	6,895.9	8,098.8	29,514.1
Total	5,238.7	6,351.0	7,555.4	8,881.5	10,321.6	38,348.1
Community-based interventions						
Community Storage	952.0	973.3	987.9	1,016.5	1,038.0	4,967.8
Connectivity structures	165.1	167.9	169.3	174.9	178.4	855.5
Community Mobilization	658.0	804.8	952.4	1,107.0	1,263.4	4,785.6
Microfinance	41.5	70.5	107.2	152.1	205.3	576.6
Micro insurance	13.7	23.3	35.4	50.2	67.7	190.3
Agro-processing	92.0	142.4	193.7	247.8	303.1	979.1
Adaptive Research	370.4	523.6	678.2	838.6	1,001.6	3,412.4
Total	2,292.8	2,705.8	3,124.1	3,587.0	4,057.6	15,767.3
Small-scale irrigation						
Conventional Small Irrigation	339.3	347.3	352.9	362.8	370.6	1,773.0
Non Conventional Small Irrigation	407.5	417.7	425.2	436.7	446.2	2,133.4
Total	746.8	764.9	778.2	799.5	816.9	3,906.4
National interventions						
Agricultural extension workers	690.2	856.8	1,048.7	1,275.2	1,542.1	5,413.0
National research	862.9	1,192.6	1,549.3	1,932.8	2,343.2	7,880.8
Special campaign on climate change adaptation	60.5	62.0	63.2	64.9	66.3	316.9
Special campaign on good food practices	60.5	62.0	63.2	64.9	66.3	316.9
Total	1,674.1	2,173.5	2,724.4	3,337.8	4,017.9	13,927.7
Grand total	9,952.4	11,995.3	14,182.1	16,605.8	19,213.9	71,949.5

2b.2.4.2 Resource Gaps

In recent years, the government's annual allocation for agriculture has increased noticeably in nominal terms. The compound rate of increase in the annual allocation has trended at 30.0 percent during the last four years (TYIP + one year). Assuming continuation of this trend for the next five years, an annual projection has been made in Table 2.8.

These projections suggest a shortfall of NRs 30.3 billion over the next five years. On average, some NRs 6 billion would have to be added each year to the trend-based allocation for the sector in order to ensure that the MDG interventions are funded sufficiently from the sectoral allocations available.

2b.2.4.3 An alternative scenario – heavy farm-level subsidy regime

In addition to the above scenario for public expenditure needs based on a moderate subsidy regime at the farm level, an alternative scenario of public expenditure needs based

Table 2.8: Resource gaps for attaining MDG 1 (Agriculture) *(NRs in millions)*

Particular	2011	2012	2013	2014	2015	Total
Need	9,952.4	11,995.3	14,182.1	16,605.8	19,213.9	71,949.5
Availability	4,608.2	5,991.2	7,789.3	10,127.0	13,166.4	41,682.2
Gap	5,344.2	6,004.1	6,392.8	6,478.8	6,047.5	30,267.3

on a scaled-up farm subsidy regime has to be considered. In this plan, smallholder farmers would be provided with differentiated subsidy packages on direct farm inputs. This would generally be 75 percent of the cost, but increasing to 100 percent on a few items such as artificial insemination and veterinary services. For other intervention categories, the basis remains the same in both regimes.

In this scenario, nearly NRs 94 billion would be needed for five years—an increment of NRs 22 billion over the estimate for the moderate subsidy regime. Under this regime, the implied resource gap for the five-year period would be an estimated NRs 52 billion, which is 56 percent of the projected allocation for the sector.

2b.3 CONCLUSIONS

Considering the initial target for the indicator to which the performance of the food and agriculture sector contributes most, achievement to date is far from satisfactory; much remains to be done to ensure fulfilment of this target. The government has been reemphasizing the sector both in terms of policy and resource commitments in recent years, although the latter does not commensurate with the former. Substantial strides towards achieving the target are expected in the coming years, based on the assumption of enhanced resource and policy commitments.

The challenges that lie ahead essentially revolve around accelerating efforts to build

beyond present achievements, reducing vulnerabilities, maintaining food security for the border-line population, and reaching deeper towards the unreached through targeted programmes. However, the pace of progress needs to be accelerated substantially when compared to current trends. Acceleration on a substantial scale would call for equally substantial and focused interventions.

Interventions related to sustainable technology to fit smallholders, dietary diversification and climate change adaptation will need to be addressed through the research and extension system. Similarly, support to smallholders with respect to organic fertilizers should be in the form of improving the practice of preparation and application.



CHAPTER 3

UNIVERSAL PRIMARY EDUCATION

MDG 2: ACHIEVE UNIVERSAL PRIMARY EDUCATION

3.1 REVIEW OF PROGRESS, POLICIES AND STRATEGIES

3.1.1 Review of Progress

Nepal has made significant efforts to increase enrolment in primary-level education by re-strengthening free primary education, providing various incentive schemes to children, holding school enrolment campaigns, revising and making the curriculum more relevant to children, making pedagogical interventions through trained teachers, strengthening early childhood education, and raising awareness on education at the community level. As results show, the net enrolment rate (NER) has risen to 93.7 percent in 2010 from 86.8 in 2005 (Table 3.1). The survival rate to Grade 5, completing a full cycle of primary education, was reported to be 80.6 percent in 2010 (NPC 2010) compared to 76 percent in 2005 (NPC/UNCT, 2005). With continuous emphasis on formal and non-formal education programmes, the literacy rate has risen to 86.5 percent in 2010, among 15–24 year olds (CBS 2009), from 79.4 percent in 2005 (MOHP 2006).

3.1.2 Review of Policies and Strategies

The Interim Constitution of Nepal 2007 has stipulated school education as a fundamental right for all and has put an emphasis on ensuring access to quality basic education for women, orphans, children with disabilities, and individuals from ethnic or religious minorities and other disadvantaged groups. The TYIP has focused on free and quality primary education for all irrespective of caste, gender, ethnic groups and geographical differences. In line with the thrusts of the constitution and the TYIP, the School Sector Reform Plan (SSRP) 2009–2015 has been developed with focused interventions for underserved groups and communities. With these, both formal and non-formal schooling facilities have improved; religious and traditional schools are being mainstreamed; and priorities are given to alternative schooling facilities for needy communities. Other focused interventions include increasing children's access to school, improving the quality of education, and increasing management efficiency through decentralized educational management.

Table 3.1: Progress towards achieving targets of primary education

Indicator	2010	2013 target**	2015 MDG target	Gap between 2010–15
NER	93.7*	98	100	6.3
Survival rate to Grade 5 (total)	80.6**	85.5**	100	19.4
Literacy rate of 15–24-year-olds	86.5**	90	100	13.5

Source: *NPC/UNCT 2010; ** NPC 2010.

A number of reform measures to improve access to and quality of primary education are being implemented. For example, various incentives such as scholarships for girls, disadvantaged children and children with disabilities, free midday meals, and free textbooks have been implemented to improve access. Similarly, per capita financing and formula-based funding to schools have been implemented to improve the learning environment including physical infrastructure development, and expansion and strengthening of early childhood development (ECD).

In order to remove physical barriers to access, the government has adopted policies to establish more schools and upgrade existing ones. As a result, since 2005, the number of registered primary schools has increased by 15 percent and the number of primary students by nine percent. The government has also implemented policies to mainstream religious educational institutions such as Gumba, Gurukul and Madarsha education. As a result, some 676 new schools have been reported in 2009. In addition, since 2008, a policy of free education up to Grade 8 has been implemented, and provisions are in place for gradual implementation of compulsory primary education. Government policy has also focused on increasing the recruitment of teachers from underrepresented sections such as women, Dalit and Adivasi Janajati groups and people with disability. In 2009, 34.5 percent of teachers were female, 23.4 per cent were Adivasi Janajati, and 4.2 per cent were Dalit (DOE 2009). Additionally, a policy provision of recruiting at least one female teacher in each primary school has been made and implemented. Moreover, to make educational management more inclusive, policies on positive discrimination and reservation are also in place.

Another significant policy has sought to enhance the role of local communities and parents in school management by transferring responsibilities for school management to locally elected SMCs. As a result, the MDG Progress Report 2010 indicates that there has been significant improvement in the enrolment of children from Dalit groups and other marginalized communities in public primary schools (NPC/UNCT 2010).

3.2 NEEDS ASSESSMENT

3.2.1 Gap Analysis

The gap between current achievement and the MDG target for 2015 is 6.3 percentage points for NER, 19.4 percentage points for survival rate to Grade 5, and 13.5 percentage points for the literacy rate of 15–24-years old (Table 3.1). A lot needs to be done to reduce this rate, e.g., identification of the hardcore group of out-of-school children, strategic additional incentives for these children, better school environments, flexible schooling modality, and child-friendly teaching. Trends show that the NER is likely to be achieved with a strategic focus on providing children with primary education by 2015, whereas the remainder seem to be difficult to achieve with the present efforts.

There is no legal or policy provision for compulsory primary education. All schools are yet to equip themselves with the minimum enabling conditions (teachers, learning environment and adequate learning materials). From a child-rights perspective, there is a need to provide an inclusive learning environment, access to formal education for children from remote areas, trained and adequate teachers, child-friendly teaching-learning activities, and access to quality ECD centres/pre-primary education in a safe and secure environment.

The capacity development of SMCs and awareness-raising among PTA members and the community require more strategic efforts for improving enrolment, survival and quality of learning by meaningful participation in and ownership of school management activities and results.

In order to provide pre-primary educational experience to children aged 3–4 years, a total of 66,181 teachers will be needed by 2015; this will require an average annual increase by 11.0 percent. Some 1,786,888 textbooks and teaching guides will be needed for children and teachers by 2015. Furthermore, 66,181 classrooms and 8,273 toilets will be needed by 2015 (Annex 3, Table 3a).

By 2015, 71,149 teachers will be required at the primary level—an average annual increment of 46.6 percent from 2011. Some 49,185 classrooms will be required, an additional 9,863 classrooms each year. New staffrooms, toilets and other rooms including laboratories will also be required. Over eight million textbooks and teaching guides will be required (Annex 3, Table 3b).

Existing interventions on literacy have failed to reach to all illiterate people and

pocket areas, as well as to link literacy with the daily lives of illiterates, newly literates and post literates—skills and income generation. Alternative education and adult literacy programmes have been initiated across the country through literacy centres for decades, and enrolment is increasing every year. The number of adults enrolled is expected to reach 1,456,471 by 2015 with an average annual growth rate of 2.6 percent. The number of facilitators and supervising staff required to run and supervise literacy programmes are also expected to rise over the next five years from 54,963 to 78,332 and from 6,726 to 11,750, respectively. Resource requirement will also increase accordingly, as each adult learner is to be supplied with a set of learning materials (textbook) and facilitators are to be supported with a facilitators' guide and a textbook (Annex 3, Table 3c).



3.2.2 Challenges and Constraints

Challenges:

- ◆ Harmonizing policy, legal and institutional frameworks for achieving universal primary education
- ◆ Mainstreaming existing Madrasah, Gumba and Gurukul education into main education systems
- ◆ Integrating ongoing efforts to the education sector through various ministries and organizations in order to achieve MDG 2
- ◆ Ensuring the minimum enabling conditions in schools (teachers, learning environment and learning materials including physical facilities)
- ◆ Developing professional capacity of teachers with high morals/ethics, dedication and motivation
- ◆ Ensuring that all children have access to and quality of ECD/pre-primary and primary education
- ◆ Strengthening capacity of SMCs and PTAs for better management, planning, implementation, monitoring and accountability—results
- ◆ Improving learning achievement and relevance of education to the daily lives of children
- ◆ Providing literacy classes to all illiterate people and eradicating illiteracy
- ◆ Identifying hardcore out-of-school children and providing education to them through various modes of education, i.e., formal, non-formal, alternative, distance and open education
- ◆ Introducing the policy of free and compulsory basic education and assuring rights to quality education of all
- ◆ Maintaining disaggregated data and using them in educational planning and programming

Constraints:

- ◆ Low awareness among communities and families of children that are out of school, resulting in some children not yet being enrolled in school
- ◆ Owing to poverty, families have not been able to enrol and retain their children in school

because of the direct and indirect costs of education and the family's work burden

- ◆ Inadequate resources affect the expansion of physical facilities in schools as enrolment increases, resulting in insufficient space and poor environments
- ◆ Distance of schools: owing to scattered settlements, small children face problems walking to school during all seasons of the year. Girls also express security fears about walking to school. There are inadequate alternative schooling facilities in remote areas
- ◆ Social discrimination still exists against so-called Dalit children at the community level
- ◆ Weak monitoring of SMCs, PTAs, head-teachers, the regularity of teachers and the teaching-learning environment affect the smooth functioning of schools
- ◆ Inadequate professional capacity: various interventions related to curriculum, pedagogy and assessment at the school level are yet to be in place and thus assurance of quality education is difficult

3.2.3 Strategic Interventions

To address the challenges and problems currently faced in attaining MDG 2, the following strategic interventions are identified.

Continue:

- ◆ Scholarships and other incentives to needy children and schools
- ◆ Teacher training and more relevant curricula
- ◆ School enrolment campaign
- ◆ Multi-lingual education at primary level
- ◆ Construction and repair school buildings, classrooms, and water and sanitation facilities
- ◆ Orientation to and participation of parents in school activities
- ◆ Alternate education
- ◆ Research and development
- ◆ National literacy campaigns (functional and community literacy) to ensure that all citizens become literate
- ◆ Capacity development of SMCs and education managers for better planning, implementation and monitoring

Reinforce:

- ◆ Harmonize policy and institutional framework
- ◆ Make School Improvement Plans and their implementation effective
- ◆ Increase access to and coverage of pre-school programmes/ECD and primary schools
- ◆ Improve child-friendly teaching–learning environment
- ◆ Strengthen flexible schooling/out-of-school programmes
- ◆ Provide specific incentives such as uniforms, various educational materials and midday meals for children from poor families or depleting ethnicities such as Raute and Chepang
- ◆ Encourage resource persons and community stakeholders to monitor and provide regular feedback to schools for a better educational environment
- ◆ Provide vocational education and entrepreneurship development training
- ◆ Coordinate educational activities at all levels within and beyond the education sector
- ◆ Reinforce post-literacy support programme

- ◆ Strengthen market-oriented skills training and livelihood programmes, focusing on the 15–24 age group

Additional effort:

- ◆ Identify the hardcore group of out-of-school children and assess their needs, and develop better options to enrol and retain them in school; and identify the socio-economic conditions hindering the full participation of these groups in school
- ◆ Encapsulate various teacher training into a package for developing effective teaching–learning situations
- ◆ Maintain and use education-related disaggregated data in planning and programming
- ◆ Revisit the per child funding system and process
- ◆ Improve the quality of education by enhancing collaboration between public and private schools

Detailed interventions are presented in Annex 3, Table 3d.



3.2.4 Resource Needs and Gaps

3.2.4.1 Resource Needs

The government has demonstrated its firm commitment to meeting the targets of MDG 2 with continuous increment in resource allocation. About 17 percent of the total national budget goes to the education sector and, of the total, 62–63 percent goes to primary education (DoE 2010). However, this is far less than what is required to achieve the MDG targets by 2015.

Estimates show that huge resources are needed to meet the targets for both pre-primary and primary education in the years between 2011 and 2015. Increases are related to ensuring that students have pre-primary experience prior to enrolment at primary level, thus helping to improve survival rate. Increased enrolment at primary level will also increase resource requirements. Focus is placed on pre-primary and primary levels so as to increase NER and survival rates that

have been targeted for attainment of MDG 2 (Tables 3.2 and 3.3).

The estimated total cost for adult literacy for 2011–2015 is NRs 6.7 billion (Table 3.4). Annual resource needs for adult literacy programmes will decline over the years as the contribution of primary education to improving the adult literacy rate increases. Adult literacy and non-formal education are giving priority to improving adult literacy status, especially for those entering the job market through skills training. Through literacy campaigns and other non-formal education, enrolment of adults in Community Learning Centres (CLC) is expected to increase every year. Therefore, resource requirements will increase proportionately.

The other costs associated with cross-cutting issues in education include central and regional administration, curriculum development, planning and monitoring, partnership, subsidies, advocacy and miscellaneous items (Table 3.5).

Table 3.2: Resource needs for pre-primary level

(NRs in millions)

Particular	2011	2012	2013	2014	2015	Total
Total pre-primary cost (public)	4,281.34	6,795.82	12,288.66	29,351.24	5,813.93	58,530.99
Recurrent costs	1,378.89	1,746.20	2,195.03	2,745.22	3,432.36	11,497.70
Construction and other investments	2,902.45	5,049.62	10,093.64	26,606.02	2,381.57	47,033.29
Unit cost	54	76	124	267	48	-
Teacher salaries as % of recurrent total	83	84	84	84	84	-
Non-teacher recurrent as % of recurrent total	17	16	16	16	16	-

Table 3.3: Resource needs for primary level

(NRs in millions)

Particular	2011	2012	2013	2014	2015	Total
Total cost	29,223	37,051	48,258	64,766	92,671	271,969
Recurrent costs	14,023	18,602	25,538	36,167	52,561	146,892
Construction and other investments	15,200	18,449	22,719	28,599	40,110	125,077
Teacher salaries as % of total recurrent costs	45	54	63	70	76	-
Non-teacher recurrent as % of total recurrent costs	55	46	37	30	24	-

Table 3.4: Resource needs for adult literacy and non-formal programmes

(NRs in millions)

Particular	2011	2012	2013	2014	2015	Total
Total cost	1,065	1,200	1,340	1,482	1,619	6,706
Recurrent costs	1,065	1,200	1,340	1,482	1,619	6,706
Construction and other investments	0	0	0	0	0	-
Teacher salaries as % of total recurrent costs	57	50	42	32	18	-
Non-teacher recurrent as % of total recurrent costs	43	50	58	68	82	-

The above estimates show that resource needs for both the recurrent and capital headings are very high in 2014 and 2015, the last two years of the five-year period, at almost twice the total requirement during the previous three years. It will be a huge challenge to mobilize resources as required for meeting the targets of MDG 2.

Component-wise estimation and recurrent and capital costs are presented in Table 3.6.

3.2.4.2 Resource Gaps

The estimated total cost required for attaining MDG 2 by 2015 amounts to NRs 344.5 billion. These estimates are based on best pedagogical practices and age groups of 3–4 years for pre-primary and 5–9 years for primary education. There is a resource gap each year, with the total reaching NRs 177.2 billion by 2015 (Table 3.7). The government budget cannot meet the entire cost, and development partners' assistance will be needed.

Table 3.5: Resource needs for cross-cutting issues

(NRs in millions)

Particular	2011	2012	2013	2014	2015	Total
Central administration	0.60	0.61	0.62	0.64	0.65	3.12
Curriculum, quality assurance and exams	70.12	93.01	127.69	180.83	262.81	734.46
Planning, monitoring and evaluation	140.23	186.02	255.38	361.67	525.61	1,468.92
Regional administration	16.40	16.40	16.40	16.38	16.36	81.95
Partnership subsidies and advocacy subsidies	18.31	20.51	22.97	25.73	28.82	116.35
Miscellaneous	280.47	372.04	510.77	723.34	1,051.22	2,937.84
Total cross-cutting	605.06	791.89	1,073.92	1,504.88	2,168.28	6,144.03
Total recurrent	526.14	688.60	933.84	1,308.59	1,885.47	5,342.63
Capital costs	78.92	103.29	140.08	196.29	282.82	801.40

Table 3.6: Resource needs by component for attaining MDG 2

(NRs in millions)

Particular	2011	2012	2013	2014	2015	Total
Pre-primary	4,281	6,796	12,289	29,351	5,814	58,531
Primary	29,223	37,051	48,258	64,766	92,671	271,969
Literacy and non-formal education	1,065.23	1,199.61	1,339.88	1,481.91	1,619.47	6,706.10
Cross-cutting	759.65	978.22	1,297.51	1,772.25	2,487.82	7,295.45
Total costs	35,329.52	46,024.51	63,183.89	97,371.04	102,592.36	344,501.33
Total recurrent costs	16,993.61	22,236.39	30,007.21	41,702.66	59,498.36	170,438.24
Total capital costs	18,335.91	23,788.12	33,176.68	55,668.38	43,094.00	174,063.09
Total recurrent as % of total costs	48	48	47	43	58	
Total capital as % of total costs	52	52	53	57	42	

Table 3.7: Resource needs and gaps for attaining MDG 2

(NRs in millions)

Particular	2011	2012	2013	2014	2015	Total
Total cost	35,329.5	46,024.5	63,183.9	97,371.0	102,592.4	344,501.3
Available resources for pre-primary, primary and literacy*	32,930.3	32,915.7	33,076.3	32,974.1	35,426.9	167,330.6
Funding gap	2,399.2	13,108.8	30,107.6	64,396.9	67,165.5	177,170.7

Source: SSRP 2009–15, MOE.

Note: * multiple of % of pre-primary, primary, literacy percentages in different years.

3.3 CONCLUSIONS

Progress made in the education sector shows that NER in primary level is likely to be achieved with the current level of efforts. However, in order to ensure universalization of compulsory quality primary education, more concrete and focused interventions are required. In the case of survival rate and literacy, it seems that it will be hard to achieve the targets by 2015. It will demand accelerated efforts with additional resources, capacity development and coordination among actors in the government and non-government sectors. To fulfil MDG 2 by 2015, huge resources both from the government

and donor communities are required. Mobilization of potential resources at the local level will certainly help to minimize the funding gaps.

In order to attain the MDG on education, there is a need to recruit significantly more teachers and increase the number of classrooms and other facilities; this will require substantial increases in investment on education. Every new intervention package has to be implemented effectively and the scaling up of ongoing efforts should receive high priority. There is a huge funding gap for education, which will have to be met through external assistance.



GENDER EQUALITY AND WOMEN'S EMPOWERMENT

MDG 3: PROMOTE GENDER EQUALITY AND EMPOWER WOMEN

4.1 REVIEW OF PROGRESS, POLICIES AND STRATEGIES

4.1.1 Review of Progress

Over the last decade, Nepal has made progress in reducing gender-based discrimination and empowering women. Women now have significantly better access to literacy and education. Gender-inclusive/friendly policies and national plans of action have been framed to increase women's access to political, economic and social spheres, and to reduce gender-based violence. Legal reforms have been introduced and institutional mechanisms have been established and strengthened in order to ensure gender equality and women's empowerment. The gender empowerment measurement (GEM) has improved significantly from 0.391 in 2001 to 0.496 in 2006.

However, regional differences persist, with it being much higher in urban areas (0.527) than in rural areas (0.474).

Marked improvement has been made in girls' enrolment at the primary level over the past decade, with current data showing gender parity (Table 4.1). However, boys' enrolment at secondary, higher secondary and tertiary levels is significantly higher than for girls, with ratios of 0.93, 0.61 and 0.63, respectively (NPC/UNCT 2010). Figures for the first two indicators suggest that there is a possibility of achieving gender parity at the first two levels of education by 2015. However, the third indicator still remains far from the target. The literacy rate among women aged 15–24 years has reached 91.1 percent in urban areas in 2008 and 72.8 percent in

Table 4.1: Progress, targets and gaps for MDG 3

Indicator	2010*	2013 target**	2015 MDG target	Gap between 2010 and 2015
Ratio of girls to boys at primary level	1.00	1.00	1.00	0
Ratio of girls to boys at secondary level	0.93	0.96	1.00	0.07
Ratio of women to men at tertiary level	0.63	0.68	1.00	0.37
Ratio of literate women to men aged 15–24 years	0.83	0.95	1.00	0.17
Proportion of women in wage-earning employment in the non-agricultural sector (%)	19.9	29.0	-	-
Proportion of seats held by women in national parliament (%)	32.8	40.0	-	-

Source: *NPC/UNCT 2010; ** NPC 2010.

rural areas over the same period (CBS 2009). However, there is still a notable gap between the literacy rates of men and women in this age group, with the literacy rate for women being 75.8 percent compared to 91 percent for men. Disparity in educational status is also evident across castes and ethnicities, ecological and development regions, and between urban and rural areas. Low enrolment rates at school for girls in the Tarai illustrate region-specific gender disparity. However, gender disparity cuts across all factors, with women lagging behind men in almost all indicators.

The majority (73.7 percent) of females aged 15 years and above are still engaged in subsistence agriculture. Although figures have decreased slightly over the last decade, 77.8 percent of females in rural areas and 59.7 percent of males are employed in the agricultural sector. The share of women aged 15 years and above in wage employment in the non-agricultural sector was 19.9 percent in 2008, which was an increase of 4.8 percentage points since 1998/99. The disparity between male and female average earnings has not reduced during the last decade. The average monthly wage for women is NRs 3,401 compared to NRs 5,721 for men (CBS 2009). Discrepancies in monthly earnings resulted partly due to differences in hours of work, but largely because of differential wage rates in both agricultural and non-agricultural sectors. The category of self-employed wage labour³, most of which is household chores, which consumes a substantial portion of women's working time, is not adequately accounted for in national accounts.

Women's share in parliament was 5.8 percent in 1999, whereas it increased to 32.8 percent (197 out of 601 seats) in the Constituent Assembly (CA) in 2008. This has brought about historic change in the representation of women in the legislative structure. Another encouraging aspect is that, currently, women

head four of the 14 CA committees⁴. However, the situation is not encouraging in the bureaucracy. Women remain grossly under-represented at decision-making levels of the bureaucracy and judiciary including the state's other mechanisms. The proportion of women in the civil service has been low for years; for instance, females comprised only 6.4 percent of total employees at the gazetted third class level (NPC/UNDP 2006) and there were only four female judges out of a total of 264 in 2008 (Secretariat of Judicial Council 2009).

Violence against women and girls is present in every region, cutting across boundaries of culture, class, caste, ethnicity and age. Social attitudes towards women, backed by low socio-economic status of the population in general, have led to many cases of gender-based violence both in domestic as well as public arenas.

4.1.2 Review of Policies and Strategies

Recent political changes, various past and ongoing social movements, and advocacy for women's rights and social justice have succeeded in placing gender equality and women's empowerment at the forefront of the national agenda. The Interim Constitution 2007 prohibits discrimination on the basis of caste, ethnicity, religion and sex, and also protects the interests of women and other socially excluded groups and allows for positive discrimination in favour of women. Similarly, the electoral system adopted for the election to the Constituent Assembly was designed specifically to ensure near-proportional levels of representation from women, Dalits, Adivasi Janajatis and Madhesi⁵.

The Constituent Assembly Election Act also detailed requirements for drawing up the list of candidates and for allocation of seats in the proportional representation (PR) section of the election⁶. This has resulted in a

³ The Central Bureau of Statistics broadened the definition of economic activity in the 2001 Census.

⁴ (i) Committee on Fundamental Rights and Directive Principles; (ii) Committee on the Distribution of Natural Resources, Financial Rights and Public Revenue; (iii) Cultural and Social Solidarity Committee; and (iv) Committee on Citizenship.

⁵ Article 142 (40) of the Interim Constitution of Nepal.

⁶ Election to Members of the Constituent Assembly Act, 2064 (2007)

number of significant policy and legislative reforms on women's rights. In 2006, parliament passed a resolution to ensure at least 33-percent representation of women in all state mechanisms. Discriminatory legal provisions have been amended and new legislation has been enacted; however, there are still many laws containing paternalistic provisions, while law enforcement agencies also lack gender sensitivity. Moreover, although the Interim Constitution has recognized the rights of women as group rights, it does not include all provisions in the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) for promoting substantive gender equality. It also falls short of upholding several economic and social rights defined by the International Covenant on Economic, Social and Cultural Rights as fundamental rights.

The Interim Constitution ensures women's equal right to transmitting citizenship to their children through Article 8, which states that 'any person whose father or mother is a citizen of Nepal at the time of his or her birth is eligible to acquire citizenship'. However, the child of a Nepali woman married to a foreign citizen can only

become a Nepali citizen if he/she is born in Nepal and has been residing permanently in Nepal without having acquired the citizenship of the country of which his/her father is a citizen. In practice, it is still not easy for mothers to obtain citizenship for their children when they fail to produce required evidences.

Article 20 (1) of the Interim Constitution states that 'every woman shall have the right to reproductive health and other reproductive matters'. However, it does not specifically mention the right to sexual health and decision-making over sexual activity.

The Ministry of Local Development (MLD) introduced the Minimum Conditions and Performance Measure (MCPM) in 2007 to measure the performance of local bodies and encourage them to improve their performance on the basis of certain set standards. Block grants and revenue-sharing are also tied to their performance. Although the minimum conditions focus mainly on financial management, planning and programme management, and reporting procedures, the performance measures do include a number



of indicators related to gender equality and social inclusion⁷. However, the score allotted to these indicators are nominal and can be bypassed to obtain the required score. The MLD has formalized the Local Bodies Gender Budget Audit Guideline 2008 to facilitate the formulation of gender-responsive budgets in local bodies; however, its results will take some time to emerge from the local level.

The Civil Service Act 2007 states that, of all vacant posts in the civil service allocated for open competition, 45 percent will be for candidates from excluded groups: namely, socially and economically backward women, indigenous nationalities, Dalits, Madhesi, Muslims, people with disability, and people from backward regions. It also includes some positive discriminatory provision on age limit for women for joining the civil service, and shorter probation period and eligibility period for promotion. The Citizenship Act 2006 recognizes the independent identity of a Nepali mother as an individual and has vested in her the power to transmit citizenship to her children.

The Act to Amend Some Nepal Acts for Maintaining Gender Equality 2006 introduced several provisions for protection of women's rights to ancestral land and property, and sexual and reproductive health, which reflects the state's commitment to ending discriminatory laws and policies. Nonetheless, discrimination based on marital status still exists in property law. A daughter, once married, cannot claim an equal share of her parental property⁸. As patriarchal values dominate family and society in Nepal, unmarried daughters rarely receive their share of property. Thus, even though the Interim Constitution has enshrined equal property rights as fundamental rights, in

reality women cannot enjoy their right to parental property.

The Domestic Violence and Punishment Act was passed in May 2009. It defines physical, mental, sexual, financial and behavioural violence as domestic violence, and provides for a response system in case of rights violation. However, many limitations are still prevailing in terms of effective implementation of laws. For example, an incident of domestic violence is treated as a personal criminal case against which the victim has to file her own case. The victim can present her case to various state institutions such as the Women's Rights Commission, Human Rights Commission, the police, or directly to the court. There is no specific institution to handle cases of domestic violence, which could make jurisdiction difficult. The Human Trafficking Control Act 2007 and Rules 2009 have been enacted, incorporating new dimensions on trafficking and defining the duties and obligations of the state and other stakeholders including the provision of a victims' trust fund.

Since the Ninth Plan (1997–2002), gender and social inclusion, gender mainstreaming and women's empowerment including gender-based budgeting have received prime importance in the national agenda. The National Plan of Action (NPA) against Trafficking Children and Women for Sexual and Labour Exploitation 1998, the NPA on CEDAW 2003, and the NPA on Gender Equality and Women's Empowerment 2004 have been implemented. The NPA against Gender Violence 2010 has been prepared to accelerate prosecution, protection and prevention of such activities. The Government of Nepal decided to mark 2010 as the 'Year against Gender Violence'.

⁷ The performance measures for gender equality and social inclusion are related to: (i) participation of women, children, civil society, NGOs and people with disabilities in annual plan and sectoral committee meetings; (ii) budget allocation from internal resources of the DDC for elderly, people with disabilities, destitute, Dalits and indigenous nationalities; (iii) budget allocation for programmes that provide direct benefits to women and children; and (iv) public hearings and social audits of projects within the completion of four months.

⁸ Section: Partition, No. 1 (Ka) Civil Code, 2020.

4.2 NEEDS ASSESSMENT

4.2.1 Gap Analysis

Although there have been notable improvements in the indicators for MDG 3 over the past two decades, only parity in primary education has been achieved. Gender parity in secondary education is yet to be achieved, but the gap is smaller than that for tertiary education (Table 4.1). The huge gap at tertiary level is not likely to be bridged by 2015. Similarly, the ratio of literate women to men in the age group 15–24 years also shows a wide gap.

Overall, women's access to reproductive health services has improved, but a large proportion of women, especially from disadvantaged groups in rural areas, remain outside the reach of the modern health care system. Only 28.8 percent of deliveries are conducted by trained health personnel (NFHP, 2010), with the remainder depending on traditional birth attendants or female relatives.

Despite the legislative and policy measures undertaken by the government in recent years, women still suffer economic, social and political discrimination. A large number of women and girls are still trafficked for prostitution every year and a high rate of domestic violence persists across the country. Although certain legal grounds have been prepared for gender equality, many traditional practices that violate the rights of women still persist. Moreover, labour exploitation within the informal and unorganized sector continues unabated and women's exposure to it is widespread.

4.2.2 Challenges and Constraints

Challenges:

- ◆ Harmonizing gender-responsive legal, policy and institutional measures to improve the status of women's social and economic empowerment
- ◆ Developing gender-friendly macro-economic policy/model for balanced development

- ◆ Ensuring girls' enrolment and retention at secondary and tertiary levels of education by providing friendly environments and sufficient incentives
- ◆ Ensuring gender-friendly practices at educational institutions and in the workplace
- ◆ Consolidating a practice of equal pay for equal work between male and female, especially in informal sectors of employment
- ◆ Ensuring balanced power relations between men and women
- ◆ Eliminating discriminatory social and cultural practices

Constraints:

- ◆ Limited mass consciousness, leading to a gap between public opinion and policies
- ◆ Poor accountability and capacity in state mechanisms to deal with gender issues from central level to grassroots level
- ◆ Gap in existing laws and policies in order to address the systemic issues: poverty, patriarchy, economic policy, exclusion and gender-based violence at household, community, educational institution and workplace levels
- ◆ Inadequate human and financial resources: There is lack of effective mechanisms with sufficient human resources at the ministry, department and service delivery points, with regard to internalization of gender sensitivity
- ◆ Low awareness among right-holders: Most men and women are still unaware of women's rights. Discrimination is perceived as fate and any share in development is taken as generosity. As understanding about fundamental issues at the grassroots level is nominal, the majority of women belonging to disadvantaged groups are unaware about the policies and legal provisions that protect their rights
- ◆ High poverty: Poor families have not been able to enrol and retain their children in school because of direct and indirect costs for education, and family work burden

- ◆ Prevailing discriminatory practices against women and girls in academic institutions and workplaces affect women's and girls' rights and dignity
- ◆ Inadequate alternative schooling facilities in remote areas
- ◆ Lack of open school facilities so that out-of-school girls cannot complete their education
- ◆ Distance of schools: Children living in scattered settlements face difficulties in accessing school and continuing with their schooling
- ◆ Provide incentives for girls in increasing their access to and quality of education
- ◆ Continue incentives and reservation for women in education, training, employment opportunities and income-generating activities with increased resources

Reinforce:

- ◆ Promote and protect women's rights to security to end violence against women and girls
- ◆ Revise legislation and increase sensitization for policy-makers and training implementers
- ◆ Strengthen institutional mechanisms and information management, and expand gender-responsive budgeting process
- ◆ Scale up targeted interventions
- ◆ Develop capability of right-holders to effectively claim their share of development
- ◆ Increase vocational, technical and leadership trainings
- ◆ Increase sensitization for parliamentarians and policy-makers in enhancing socio-economic and political opportunities

4.2.3 Strategic Interventions

To address the above challenges, the following set of strategic and policy interventions are proposed.

Continue:

- ◆ Increase awareness, sensitization and capability of right-holders to know about their rights
- ◆ Enhance their capabilities through education and better health conditions



Additional effort:

- ◆ Address systemic issues and advocate with policy-makers
- ◆ Improve women's domestic contributions to national accounts
- ◆ Initiate performance evaluation of sectoral ministries and local bodies from a gender perspective
- ◆ Improve collaborative efforts among the government, non-government and private sectors to integrate a gender perspective at all levels
- ◆ Develop an enabling environment for home-based workers
- ◆ Develop targeted programmes for single women, widows, Dalit women and marginalized communities
- ◆ Ensure gender mainstreaming in planning, implementation, monitoring and evaluation

Details of strategic interventions are given in Annex 4, Table 4a.

4.2.4 Resource Needs and Gaps**4.2.4.1 Resource Needs**

A wide range of intervention costs has been proposed under four main categories: (i) building essential capabilities; (ii) enhancing socio-economic and political opportunities; (iii) rights to security to end violence against women and girls; and (iv) addressing systemic issues. The result shows that over the next five years (2011–2015), it will take about NRs 27.6 billion at 2010 constant prices to implement interventions for gender equality and women's empowerment (Table 4.2).

Building essential capabilities: Costs have been estimated for covering 10 percent of the population by 2015 through awareness-raising programmes, starting at two percent in 2010.

Women's right to security to end violence against women and girls⁹: This category rep-

Table 4.2: Resource needs under four major domains*(NRs in millions)*

Particular	2011	2012	2013	2014	2015	Total
Building essential capabilities	77.27	81.91	86.89	91.91	97.28	435.26
Enhancing socio-economic and political opportunities	2,939.67	3,779.51	4,654.51	5,541.68	6,461.65	23,377.02
Security	262.50	291.25	320.21	349.62	378.70	1,602.28
Systemic issues	209.12	330.69	435.68	542.04	655.73	2,173.26
Total	3,488.56	4,483.36	5,497.28	6,525.25	7,593.36	27,587.82
Capital	883.12	967.18	1,056.85	1,150.11	1,246.03	5,303.08
Recurrent	2,605.44	3,516.18	4,440.43	5,375.13	6,347.34	22,284.73

resents the costs for ending violence against women and girls.

Enhancing socio-economic and political opportunities: The needs assessment for this domain focused on three areas: property and inheritance rights for women, gender equality in employment, and women's share in national parliament and local governance¹⁰.

Addressing systemic issues: This includes (i) strengthening the Ministry of Women, Children and Social Welfare; (ii) providing support to institutional gender focal points/units in all ministries; and (iii) creating knowledge and disseminating it through a database and research for effective planning.

4.2.4.2 Resource Gaps

The resource gap is expected to be NRs 1.9 billion in 2011 and to grow in subsequent years to the level of NRs 3.8 billion by 2015. The total resource gap for the five-year period is expected to be NRs 15.0 billion (Table 4.3).

Table 4.3: Resource gaps for attaining MDG 3*(NRs in millions)*

Particular	2011	2012	2013	2014	2015	Total
Need	3,495.4	4,483.4	5,490.7	6,525.0	7,593.4	27,587.8
Availability	1,543.2	1,926.1	2,404.0	3,000.4	3,744.9	12,618.6
Gap	1,952.2	2,557.3	3,086.7	3,524.6	3,848.5	14,969.3

⁹ Due to absence of data related to violence against women and girls, cost estimation was made assuming that the number of survivors of violence against women is 10 times greater than cases reported to the police in 2009.

¹⁰ The study has assumed that one election will be held during the period 2011–2015, for which training will be provided to women candidates. However, awareness and sensitization programme for political participation of women are proposed until 2015.

4.3 CONCLUSIONS

The status of women with regards to their access to knowledge, economic resources, political power and personal autonomy in decision-making is generally poor. This is compounded by scarce and scattered sex-disaggregated data on socio-economic and political aspects of caste, ethnicity and region; this makes it difficult to accurately compare gender disparity in different groups and regions. Although there has been considerable progress on some targets for MDG 3, e.g., ratio of girls in NER in schools and literacy and ratio of female in parliament, a rigorous effort is needed to achieve some targets, e.g., ratio of females to males at tertiary level of education and wage-earning employment both in formal and informal sectors of the economy.

In the period leading up to 2015, entrenched barriers pose stiff challenges for attainment of the goal of gender equity and women's empowerment. These barriers cannot be

overcome without reaching the most disadvantaged population. Furthermore, the funding gap appears to be a major stumbling block for implementation of proposed interventions. To surmount these challenges, it is imperative that the government and donor partners focus on ensuring that adequate funds are available for the required initiatives from the MDG perspective.

As gender cuts across multiple sectors, inequality and discrimination cannot be tackled without an integrated approach that encompasses explicit policy reforms, effective implementation and monitoring mechanisms, collaboration between various stakeholders, and interventions at different levels. Lack of proper mechanisms and adequate resources have resulted in slow progress in the implementation of acts, policies and action plans. Thus, the government has to be more gender-sensitive in formulation of rules, regulations, acts and policies, and in their effective implementation to bring realization of change that will meet the MDG targets.



CHAPTER 5

HEALTH SERVICES

MDG 4: REDUCE CHILD MORTALITY

MDG 5: IMPROVE MATERNAL HEALTH

MDG 6: COMBAT HIV AIDS, MALARIA AND OTHER DISEASES

There are three MDGs focused on health: MDG 4 to improve child health; MDG 5 to improve maternal health; and MDG 6 to combat HIV, AIDS, malaria and other diseases. Each MDG is considered separately for review of progress and needs assessment, and jointly for resource costing and identifying financing gaps.

5A REDUCE CHILD MORTALITY (GOAL 4)

5A.1 REVIEW OF PROGRESS, POLICIES AND STRATEGIES

5A.1.1 Review of Progress

Nepal has made significant progress in child health over the last decade. The under-five mortality rate (U5MR) has reduced from 91 deaths per 1,000 live births in 2001 to 61 in 2006 and 50 in 2009. Infant mortality rate (IMR) has reduced from 64 deaths per 1,000 live births in 2001 to 48 in 2006 and 41 in 2009 (NPC 2010). Similarly, the neonatal mortality rate (NMR) has also been reduced from 39 deaths per 1,000 live births in 2001 to 33 in 2006 and 20 in 2009 (NFHP 2009). The proportion of children immunized against measles has increased from 71 percent in 2000 to 85 percent in 2006 (MOHP 2007). This shows that Nepal is on right track

to achieve MDG targets related to child health before 2015.

Nepal carried out two national measles campaigns in 2005 and 2008; and after this the measles-like outbreaks and laboratory-confirmed measles cases have decreased dramatically.

Twice a year campaign of Vitamin A supplementation and deworming for under five children has given good result for improvement of child health. Tetanus toxoid immunization has been introduced at the school level in selected districts. The National Committee for Immunization Practice and the National Committee for Adverse Events, Following Immunization are functional. Cold-room capacity for vaccine storage has expanded in the country and replacement of cold-chain equipments is in progress.

Scaling up of community based child health interventions or initiation of new interventions showed promising effects to improve child health. These include community-based integrated management of childhood illness (CB-IMCI), which has been expanded rapidly and now it is implemented in all 75 districts of the country. The most likely causes of the decline in child deaths are improvement in the management of child-

hood illnesses such as diarrhoea and acute respiratory infection (ARI) through CB-IMCI, increased coverage of immunization with introduction of new vaccines such as JE, and vitamin A and Albendazole distributions. To improve the neonatal deaths community based essential neonatal health care package has been launched and it is now launched in 27 districts. The National Immunization Programme (NIP) is delivering routine

and supplemental immunization services. However, achievements are not uniform across wealth quintiles and eco-geographical regions.

There is an urgent need to identify groups who are excluded from access to child health services. Moreover, NMR has not fallen as much as U5MR; therefore, ways to decrease NMR need to be found so that MDG targets for U5MR and IMR can be achieved. Other indicators such as the percentage of women receiving appropriate antenatal and postnatal care (ANC/PNC) are equally important, and should be monitored closely in order to put the required measures in place that could contribute towards achievement of the desired results.

5A.1.2 Review of Policies and Strategies

The National Health Policy 1991, Second Long-term Health Plan 1997–2017, and Nepal Health Sector Programme Implementation Plan (NHSP-IP I & II) 2004–2010 & 2010–2015 include policies related to child health. The HIV AIDS Policy 2008 and 2011 also include children in its policy and programmes. The government is piloting the Community-Based Newborn Care Package (CB-NCP) in 27 districts based on the National Neonatal Health Strategy 2004. The programme promotes the use of skilled birth attendants (SBAs) during delivery, and provides community-based counselling, treatment and referral of sick neonates, whenever needed. In this package, facility-level newborn care is strengthened by focusing on four major causes of neonatal death. The Multi-Year Plan for Immunization 2007–2011 outlines activities aimed at achieving measles elimination by 2011. Japanese encephalitis vaccine has been introduced in 26 endemic Tarai districts including Kathmandu Valley. Pentavalent (DPT-HepB-Hib) vaccine has been introduced in routine immunization, and in total nine vaccines are now delivered to infants.



5A.2 NEEDS ASSESSMENT

5A.2.1 Gap Analysis

Once a child has survived the neonatal period, he/she is likely to encounter a new range of threats to his/her survival. In Nepal, as elsewhere, diarrhoea, ARI and measles are responsible for the majority of under five deaths. Immunization reduces the burden of vaccine-preventable diseases and subsequent child mortality. The NIP covers all districts, municipalities and Village Development Committees (VDCs) of the country. However, the following activities are still required to improve the situation further.

- ◆ Carry out activities at maintenance of for CB-IMCI
- ◆ Maintain the quality of the ongoing programme and focus on nutrition components
- ◆ Expand the CB-NCP to new districts
- ◆ With advocacy from the National Health Education, Information and Communication Centre (NHEICC), promote and raise awareness regarding implementation of the CB-NCP at both health facility and community levels
- ◆ Manage and strengthen the proper functioning of cold-chain capacity in all 75 districts, including the construction of new cold rooms, the repair and maintenance of existing ones, and the disposal of un-repairable equipment.
- ◆ Develop capacity of health workers on vaccine management and cold-chain maintenance
- ◆ Scale up the immunization programme, aiming at reaching at universal coverage for eligible children
- ◆ Fill vacant posts for Village Health Workers (VHWs) in rural areas and create mechanism in partnership with municipality for urban areas

- ◆ Regularize transfer and deputation of staff, and implement other appropriate measures for boosting staff morale

The common causes of neonatal deaths identified in NDHS 2006 were infection, ARI, birth injury and birth asphyxia. In order to prevent neonatal deaths, there is a need to encourage clean delivery, newborn resuscitation, prevention of hypothermia, kangaroo mother care, antibiotics for infection, breastfeeding, hygiene/education and antenatal interventions. The CB-NCP is a costly intervention and it needs faster scaling up to all 75 districts. Evaluation of its effectiveness has shown that some activities need to be merged into the Aama Programme and CB-IMCI programme. At the same time, service delivery sites in health facilities need to be strengthened and a simultaneous demand for newborn care created.

It is necessary to adopt and implement integrated micro-planning for maternal and child health. In urban areas, strengthening of health services in general and neonatal services in particular is important.

Similarly, monitoring and supervision of child health programmes and reporting of services need to be made mandatory for all health institutions, both public and private.

Local resources need to be mobilized, with a set of guidelines and directives to allocate some portion towards achieving the MDGs related to child health.

Partnerships with the community, non-state actors and the private sector need to be strengthened and continued for achieving MDG 4.

Table 5A.1 shows present status, new targets and the gap between 2010 and 2015 for MDG 4 indicators.

Table 5A.1: Present status, targets and gaps for MDG 4 indicators

Indicator	2010 ^a	2013 target ^b	2015 MDG target	Gap between 2010 and 2015
Under-five mortality rate (per 1,000 live births)	50	40	54 (38)	12
Infant mortality rate (per 1,000 live births)	41	36	34 (32)	9
Neonatal mortality rate (per 1,000 live births)	20	16	16	4
Proportion of one-year-old children immunized against measles (%)	85.6	88	>90	4.4

Source: ^aNFHP 2009; ^bNPC 2010.

Note: Targets in parentheses are revised ones.

5A.2.2 Challenges and Constraints

Challenges:

- ◆ Maintaining information for planning, reporting and monitoring purposes
- ◆ Fulfilling vacant posts for health workers to deliver immunization services at local level
- ◆ Addressing the issue of U5MR, IMR and NMR from geographic, social inclusion and gender perspectives
- ◆ Mobilizing local resources for child health interventions
- ◆ Developing multi-sectoral approach to reduce malnutrition, and linking child health programme with the nutrition programme as well as water, sanitation and hygiene programmes implemented by other ministries
- ◆ Increasing coverage of delivery services by SBAs or institutions with postnatal services in all communities
- ◆ Ensuring universal coverage of child health services
- ◆ Making health insurance effective and expanding

Constraints:

- ◆ Inadequate human resources to provide child health services at community level
- ◆ Weak coordination between maternal, newborn and child health interventions
- ◆ Inadequate field allowances for health workers
- ◆ Old cold-chain and logistics management, with inadequate cold-chain space and problems in vaccine distribution
- ◆ Lack of vaccinator posts in municipality areas

5A.2.3 Strategic Interventions

The following interventions are proposed for accelerating progress towards attainment of targets:

Continue:

- ◆ Expansion of the CB-NCP,
- ◆ CB-IMCI, and vitamin A supplementation programmes
- ◆ Immunization programme: vaccine supply (BCG, Pentavalent (DPT, Hep B, Hib), measles, TT, JE
- ◆ Drugs (vitamin A, Albendazole, cotrimoxazole, ORS and zinc) supply
- ◆ Training on vaccine and cold-chain management
- ◆ Orientation to VHWs and Maternal and Child Health Workers (MCHWs)

Reinforce:

- ◆ Implementation of integrated maternal, newborn and child health activities
- ◆ Micro-planning for bringing better results in child health
- ◆ Planning for systematic immunization and child health financing
- ◆ Filling of vacant posts in local health institutions
- ◆ Strengthening of cold-chain capacity in all 75 districts

Additional effort:

- ◆ Carrying out of activities at scale for CB-IMCI to maintain the quality of the ongoing programme with a focus on the nutrition component
- ◆ Construction of new cold chain units
- ◆ Expansion of immunization programme to schools in coordination with the Ministry of Education
- ◆ Introduction of new vaccines (pneumococcal, rota virus and hepatitis A)
- ◆ Strengthening of results-based monitoring, supervision and evaluation system
- ◆ Development of human resource strategy for child health
- ◆ Establishment and expansion of public health clinics in wards of municipalities
- ◆ Initiation of efforts for universal health coverage



5B IMPROVE MATERNAL HEALTH (GOAL 5)

5B.1 REVIEW OF PROGRESS, POLICIES AND STRATEGIES

5B.1.1 Review of Progress

In Nepal, maternal mortality includes all deaths of women during pregnancy, birth and within 42 days of delivery. The review of evidence points to a significant decline in the maternal mortality ratio (MMR), with a reduction from 415 deaths per 100,000 live births in 2001 to 281 in 2006 (MOHP *et al.* 2007). Maternal mortality and morbidity study conducted in 2009 found MMR reduced to 229 (MOHP 2010). This data suggests that Nepal is on track to meet its target for MDG 5. The most likely causes are increased use of contraception, ANC for pregnant women, and delivery care provided by trained health workers. The MMR was found to vary considerably by age, with the highest risk amongst women aged below 19 and above 35 years.

Although the present MMR indicates that Nepal may achieve its target on maternal health, achievement is not uniform across rural and urban settings, and there were important disparities by caste/ethnicity, and eco-geographical regions (MOHP 2006). Therefore, there is an urgent need to identify groups who lack access to maternal health services, as this would help in prioritizing the scarce resources available for maternal health.

The Aama Programme (previously called the Maternity Incentive Scheme in 2005 and the Safe Delivery Incentive Programme in 2006) has been implemented in all 75 districts with increased incentives since 2009. A travel allowance is provided to women who deliver at a health facility: NRs 1,500 in mountain areas; NRs 1,000 in hill areas; and NRs 500 in Tarai areas. The Ministry of Health and Population (MOHP) provides a unit cost for drugs, supplies, instruments, and incentives to institutions for free delivery care: NRs 1,000 for normal delivery in hospitals with less than 25 beds; NRs 1,500.00 for normal delivery in hospitals with 25 and more beds; NRs 3,000.00 for complicated delivery;

and NRs 7,000.00 for caesarean delivery. An incentive is given to female community health volunteers to encourage institutional delivery. The Birth Preparedness Package has been implemented in all 75 districts through Female Community Health Volunteers (FCHVs). FCHVs have been mobilized to create awareness on family planning. Ambulance services are being provisioned to transport pregnant women: rickshaws for women in the Tarai and stretchers for women in the Hills and Mountains. On top of these, a 'demand creation through equity and access' programme is being implemented in 20 districts.

5B.1.2 Review of Policies and Strategies

Several important activities have been undertaken to support the environment for maternal and reproductive health such as development of Guideline for Aama Programme (free delivery services), including unit costs; clinical protocol on reproductive health for medical doctors and for Auxiliary Nurse Midwives (ANMs)/Staff Nurses; ANC and PNC protocols in National Medical Standards Volume III (Maternal and Newborn Health); National Medical Standard Volume I (Family Planning); Birth Preparedness Package tools; HMIS tools for safe motherhood, newborn health and reproductive health; management of uterine prolapse guideline; safe abortion policy including medical abortion guideline; guideline for use of misoprostol for management of postpartum haemorrhage; human resources strategy for safe delivery; SBA policy; and remote area guidelines for safer motherhood. Due to these interventions, MMR has been decreased and basic emergency obstetric care (BEOC) and comprehensive emergency obstetric care (CEOC) services, ANC and PNC visits, and institutional delivery by SBAs have increased. Demand for safe motherhood services has increased at community level.

With the legal provision and policy on safe abortion, services have been expanded across the country—all 75 districts have at least one site providing safe abortion services through public-private partnership approaches. In addition, the strategy for scale-up of medical abortion has been approved by the MOHP.

5B.2 NEEDS ASSESSMENT

5B.2.1 Gap Analysis

Emphasis on the continuum of care (ANC, delivery care and PNC) to address the three delays (delay in seeking care, delay in reaching care and delay in receiving care) and on a referral system that functions properly from the community to CEOC sites need to be the priorities of any strategy aiming to further improve maternal health outcomes in Nepal.

BEOC/CEOC sites need to be strengthened and expanded to all districts, ensuring availability of human resources and beds. Similarly, primary health care centres and

outreach clinics need to be supported in order to strengthen the tracking of pregnant women, improve counselling, and promote awareness programmes on delivery at health facilities. The status and trends of ANC coverage need to be analysed. Appropriate health care providers need to be trained as SBAs.

As most deliveries still occur at home, the number of SBAs needs to be increased in all districts. There should be at least one ANM in all health institutions at VDC level. Moreover, there should be a provision for an ANM in communities where there is no permanent health facility. Policy measures that retain trained staff and prevent their frequent transfer need to be implemented, and vacant posts need to be filled immediately, giving priority to candidates from local communities.

The Remote Area Guidelines, which envisage the provision of community-based services where SBAs are not currently available, need to be implemented as soon as possible. Furthermore, the strategy in which FCHVs provide counselling to prepare for safe delivery, including the use of misoprostol to prevent postpartum haemorrhage for women who decide to deliver at home, needs to be implemented.

Family planning services need to be an integral part of maternal health, as they are known to reduce maternal deaths. Further improvement in the contraceptive prevalence rate is needed in order to lower the MMR. The status and trend of the contraceptive prevalence rate in the youth population going abroad to study or work needs to be researched. Adolescent-focused programmes such as school health programmes should be initiated. Safe abortion services should provide long-acting temporary methods of contraception. Integrated family planning services need to be strengthened and made part of reproductive health in hospitals. All primary health care centres and selected health posts need to provide at least five methods of family planning.

It should be mandatory for private and non-government health facilities to provide information to the government on their coverage of immunization, maternal health and child



health services. Similarly, private hospitals and medical colleges need to implement the Aama Programme as well as surgery for uterine prolapse.

It is also important to undertake district micro-planning, conduct a client tracing survey, and promote public awareness and demand for immunization services through social mobilization and behaviour change communication (BCC) interventions. In addition, FCHVs should receive capacity-building for better maternal care.

Table 5B.1 shows present status, new targets and the gap between 2010 and 2015.

5B.2.2 Challenges and Constraints

Challenges:

- ◆ Improving three delays—delay in identifying problem, delay in seeking care and delay in providing service
- ◆ Reducing disparities by geographical location, caste/ethnicity and economic status in access to maternal health services
- ◆ Reducing unsafe abortion in the community—increasing the number of women seeking safe abortion services since its legalization
- ◆ Addressing and integrating adolescent health issues in the general health programme. Adolescent pregnancy and motherhood is a major social and health issue, which is associated with early marriage and can cause severe health problems leading to pregnancy-related complications and death
- ◆ Monitoring, supervising and cross-verifying records for the incentives for institutional deliveries

- ◆ Fulfilling unmet need for family planning measures (unmet need 24.6 percent), and linking family planning with maternal health services
- ◆ Maintaining transparency in public health services and conducting public health auditing
- ◆ Ensuring universal health coverage
- ◆ Making health insurance effective and expanding

Constraints:

- ◆ Staff unavailability is a key constraint as it includes unfilled sanctioned posts, frequent transfer of staff, staff on leave, deputation, training and high patient load
- ◆ Staffs' inadequate knowledge and competency in managing complicated maternal cases, especially in remote districts, as they have not received adequate training on new developments related to maternal health
- ◆ Inadequate maternal services in some local health institutions—most reproductive health services are limited to urban/semi-urban areas and district headquarters
- ◆ Insufficient basic equipment for BEOC/CEOC in health institutions where the service is provisioned. Emergency obstetric care services need improvement, and inadequate human resources are a concern. There is a need to increase access to delivery/maternal services for needy people in all communities
- ◆ Poor referral networks seems as a major constraint and contributory factor in many maternal deaths, with women being referred too late, to an inappropriate facility, and further delayed by lack of transport and poor communication between facilities

Table 5B.1: Status, targets and gaps for MDG 5 indicators

Indicator	2010*	2013 target**	2015 MDG target	Gap between 2010 and 2015
Maternal mortality ratio (per 100,000 live births)	229	170	213 (134)	95
Proportion of births attended by SBAs (%)	28.8	60	60	31.2
Contraceptive prevalence rate (modern methods) (%)	45	55	67	14.9
Proportion of women who have had at least one ANC contact (%)	89.9	97	100	10.1
Proportion of women who have had four or more ANC contacts (%)	50.2	70	80	29.8
Unmet need for family planning (%)	26.3	18	15	10

Source: * NPC/UNCT 2010; **NPC 2010.

Note: Target in parentheses is revised one.

5B.2.3 Strategic Interventions

Following list of interventions has been identified for further action.

Continue:

- ◆ Counsel and raise awareness at community level to encourage delivery at health facilities
- ◆ Increase number of SBAs and promote institutional delivery
- ◆ Revamp family planning as an integral part of reproductive health services
- ◆ Provide at least five methods of family planning from all health posts and seven methods from all district hospitals
- ◆ Continue demand-side financing for improving maternal health
- ◆ Supply vaccines (TT for pregnant mothers), drugs (vitamin A, antihelminths and iron) and family planning commodities

Reinforce:

- ◆ Emphasize continuum of care (ANC, delivery care and PNC)
- ◆ Strengthen referral systems from the community to CEOC sites
- ◆ Strengthen and expand BEOC/CEOC sites
- ◆ Ensure availability of human resources
- ◆ Strengthen the capacity of FCHVs in maternal and reproductive health
- ◆ Strengthen safe abortion service sites in highly populated and remote areas
- ◆ Scale up screening and operation services for uterine prolapse in rural areas
- ◆ Strengthen integrated family planning services in hospitals
- ◆ Provide training on family planning methods to health workers

Additional effort:

- ◆ Track pregnant women
- ◆ Establish birthing centres in all health posts and selected sub health posts
- ◆ Scale up adolescent-focused programmes on sexual and reproductive health
- ◆ Initiate obstetric ultrasound programme for maternal health in rural areas
- ◆ Screen for cervical cancer
- ◆ Develop and implement programmes to reduce gender-based violence
- ◆ Develop a safer motherhood strategic plan.
- ◆ Develop a reproductive health monitoring system

5C COMBAT HIV AIDS, MALARIA AND OTHER DISEASES (GOAL 6)

5C.A COMBAT HIV AIDS

5C.A.1 REVIEW OF PROGRESS, POLICIES AND STRATEGIES

5C.A.1.1 Review of Progress

In Nepal, HIV remains a concentrated epidemic. In 2009, HIV prevalence for the overall population aged 15–49 years was 0.49 percent. However, there is some concern that it may break out from high-risk groups into the general population. HIV prevalence was 26.1 percent among injecting drug users (IDUs), 3.8 percent for men who have sex with men (MSM), 3.5 percent for female sex workers (FSWs) and 0.5 percent for clients of sex workers (CSWs). The cumulative number of reported HIV infections was 15,043. Estimated number of HIV infections was 70,000, and the number of people receiving antiretroviral (ARV) therapy was 3,540 (NCASC *et al.* 2009). Of 123,757 pregnant women tested between 2006 and 2009, 262 were found to be HIV positive (NCASC 2009).

ARV therapy is provided free of cost by 23 hospitals to 3,226 persons. There are 179 voluntary counselling and testing (VCT) sites in Nepal. Currently, 65 government health facilities are providing VCT services, and the aim is to have at least one VCT site in each electoral constituency. Prevention of mother-to-child transmission (PMTCT) services is implemented in 17 government hospitals, and an increasing number of HIV-positive women have enrolled in the scheme. There are 13 CD4 count centres in the country to support ARV therapy, of which four sites have FACS calibre (counting CD4 faster) services (NCASC *et al.* 2009).

All HIV-related commodities for prevention, care and treatment are supplied by the government, improving the capacity of public and private institutions to deliver quality services for supply chain and logistics management.

In 2006, 31.5 percent of IDUs, 38.6 percent of FSWs, 55.6 percent of MSM and 48.5 percent of CSWs were reached with HIV prevention messages (NCASC *et al.* 2009).

5C.A.1.2 Review of Policies and Strategies

The government has identified HIV & AIDS as a 'Priority 1' programme within national plans. A semi-autonomous HIV & AIDS and STI Control Board was established in 2007 to play a pivotal role in mobilizing and improving multi-sectoral engagement, decentralization and donor coordination. The National AIDS Coordination Committee (NACC) is being strengthened to oversee development and implementation of the National Strategic Plan for HIV & AIDS, and District AIDS Coordination Committees (DACC) are being strengthened for district-level management and coordination of support for a multi-sectoral and decentralized HIV response. To

make the monitoring and evaluation system effective, a National Monitoring and Evaluation Guideline 2006 has been implemented. In addition, a national surveillance plan has been implemented for tracking trends and understanding the dynamics of the epidemic in Nepal.

Some notable policy-related initiatives have taken place for safeguarding the rights of people living with HIV and AIDS (PLWHA). They include (i) National Workplace Policy 2008; (ii) National Policy on Drug Control 2006; (iii) establishment of Nepal Policy Advocacy Panel on HIV AIDS in 2007; (iv) Nepal leadership forums on HIV AIDS (youth, women and media) in 2007; and (v) HIV & AIDS and Human Rights Forum to advocate for human rights. With all these policy and strategy measures, implementation concerns related to HIV & AIDS have been increasing from central level to community level.



5C.A.2 NEEDS ASSESSMENT

5C.A.2.1 Gap Analysis

There is a need to focus on follow-up of identified HIV-positive persons to provide them with care services and ensure that they remain in treatment, as there are too many cases that are 'lost to follow-up' and 'missing'. Early warning indicators need to be developed so that ARV treatment failures are identified quickly.

At the policy level, the National AIDS Council and NACC need to be revitalized so as to translate high-level commitments into meaningful action and, at the same time, there is a need to further strengthen DACCs to coordinate the district-level response, with an emphasis on capacity-building in district mapping, planning, and partner coordination and monitoring.

A policy guideline needs to be developed for the implementation of public-private partnerships in HIV AIDS prevention, care and support programmes. Services for high-risk groups and migrant populations are mostly provided by NGOs and community-based organizations. In the long run, this may not be a sustainable option because of their limited access to external funding. It is recommended that these services be gradually integrated into public health systems.

Access to basic HIV-related services such as VCT and testing for sexually transmitted infections (STIs) needs to be expanded through integration with reproductive health and primary health care services and the TB control programme. There is some experience of successful mobile provision of VCT services in rural areas; this can be useful for reaching isolated communities. It needs to be replicated. Effective VCT services should be promoted throughout the country, and it is important to have VCT services in every primary health care centre for greater access.

Greater focus needs to be placed on condom use as an important tool for prevention of

STIs including HIV. At the same time, female condom provision needs to be promoted so as to empower the female partner in safe sex negotiation. Therefore, there is a need for support towards private-sector partnerships to lay the foundation for a long-term, self-sustaining condom market in Nepal.

Tarai districts, located along the open border with India, are vulnerable not only as a transportation route but also as a source of migrants to India with its higher HIV prevalence.

Feminization of the epidemic is an emerging threat. It needs to be addressed urgently by expanding the programme to rural areas through a multi-sectoral approach. Similarly, the programme needs to be strategized and expanded aggressively to uncover 'hidden' PLWHA as well as those people who are unknowingly living with the infection.

The focus of PMTCT needs to be increased through integration with safe motherhood programme at all levels. The sentinel surveillance system needs to be strengthened, along with enhancement of the quality assurance system for HIV-related tests and the availability of ARV therapy for needy people.

Table 5C.A.1 shows present status, new targets and the gap between 2010 and 2015 for MDG 6 (HIV AIDS) indicators.

5C.A.2.2 Challenges and Constraints

Challenges:

- ◆ Developing reliable information system for HIV AIDS information
- ◆ Addressing multiple underlying socio-economic and developmental factors contributing to the spread of the epidemic. Widespread poverty, inequality and illiteracy compound the task, and also create the push factors for increasing labour migration and the trafficking of young girls

- ◆ Protecting general population from major risk and source of infection especially via returning migrants
- ◆ Providing HIV prevention services for hard-to-reach populations and less visible groups is a real challenge, especially for the female population. The question of how to focus more appropriately on prevention through strategic BCC for high-risk groups, including migrant workers needs to be addressed
- ◆ Estimating the population size of high-risk groups and updating it regularly
- ◆ Improving public–private partnership efforts especially in the areas of treatment and support to PLWHA
- ◆ Ensuring universal and equitable access to ARV therapy throughout the country
- ◆ Collaborating between HIV AIDS and TB programmes—diagnosis and treatment

Constraints:

- ◆ Inadequate legal provisions that protect human rights, particularly of PLWHAs and most-at-risk populations, allow all kinds of stigma and discrimination to be perpetuated
- ◆ Weak laboratory service networks at district level, and inability to fully support the scale-up of ARV therapy
- ◆ Prevailing stigma and discrimination at community level
- ◆ Insufficient understanding of HIV & AIDS epidemics among programme implementers
- ◆ Inadequacy of VCT centres and their under-utilization
- ◆ Weak linkage between TB and HIV interventions and networks

5C.a.2.3 Strategic Interventions

The following interventions have been identified to address the challenges mentioned above.

Continue:

- ◆ Promote awareness-raising programmes.
- ◆ Expand effective VCT services throughout the country
- ◆ Accelerate the focus on comprehensive condom distribution
- ◆ Provide an adequate supply of ARVs for needy people

Reinforce:

- ◆ Strengthen DACCs to coordinate the district-level response
- ◆ Strengthen the sentinel surveillance system through a multi-sectoral approach
- ◆ Enhance the quality assurance system for HIV-related tests
- ◆ Scale up HIV prevention programmes especially among IDUs, FSWs, CSWs and MSM

Additional effort:

- ◆ Establish a mechanism to provide continuous services to identified HIV-positive people
- ◆ Integrate HIV-related services such as VCT and STI testing with reproductive health, primary health care and TB services
- ◆ Integrate the PMTCT programme with the safe motherhood programme
- ◆ Develop a strategy for children affected by AIDS (CABA) and introduce essential service package at all levels as well as in the non-state sector
- ◆ Initiate special efforts to educate migrant workers about preventing and treating HIV infection

Table 5C.A.1: Present status, targets and gap for MDG 6 indicators (HIV AIDS)

Indicator	2010	2013* target	2015 MDG target	Gap between 2010 and 2015
HIV prevalence among population aged 15–49 years (%)	0.49 ^a	0.37	0.35	14
HIV prevalence among IDUs (%)	26.07 ^a	24.8	22.99	3.08
HIV prevalence among FSWs (%)	3.5 ^a	3.5	3.5	0
HIV prevalence among MSM (%)	3.8 ^a	1.45	1.43	2.37
HIV prevalence among CSWs (%)	0.5 ^a	1.3	1.3	0.8
Percentage of IDUs reached with HIV prevention messages	31.5 ^b	60	80	48.5
Percentage of FSWs reached with HIV prevention messages	38.6 ^b	80	85	46.4
Percentage of MSM reached with HIV prevention messages	55.6 ^b	75	80	24.4
Percentage of CSWs reached with HIV prevention messages	48.5 ^b	65	80	31.5
Percentage of people with advanced HIV infection receiving ARV combination therapy	21 ^a	60	80	59

Source: NCASC, ASHA Project, and USAID/FHI (2007^a, 2008, 2009^b); * NPC 2010.

5C.B COMBAT MALARIA

5C.B.1 REVIEW OF PROGRESS, POLICIES AND STRATEGIES

5C.B.1.1 Review of Progress

At present, malaria control activities are carried out in 65 districts, of which 13 are categorized as high-risk districts (where 70 percent of malaria cases originate), 18 as low-risk districts and 34 as very low-risk districts. The remaining 10 districts are considered malaria-free.

Since 2001, the slide positivity rate has declined and is now 2.4 percent. Similarly, annual parasite incidence (API) has declined from 0.55 per 1,000 of the population (2001) to 0.18 (2009). However, clinical malaria incidence (CMI) has increased from 3.3 per 1,000 of the population in 2006 to 5.7 in 2009. In 2007/08, 83,000 cases were diagnosed as probable malaria (clinical cases), but only 4,500 were laboratory-confirmed. There were 330 suspected/possible malaria deaths.

Selective and sustainable preventive measures are the main tools for malaria control. Two rounds of selective indoor residual spraying (IRS) have been carried out in malarious areas based on criteria set for IRS, which included areas with a previous history of outbreaks, new settlements and ongoing development projects in high-risk malarious areas, epidemic situations, high prevalence of *Plasmodium falciparum* cases, and drug-resistant malaria cases. The insecticide spraying is still the mainstay of the malaria prevention programme. In 2008, over 904,000 people were protected through IRS (DOHS 2008).

Distribution of long-lasting insecticide-treated nets (LLINs) for pregnant women is targeted both for prevention of malaria and for safe motherhood. Distributions are carried out through ANC clinics throughout the year. In 2009/10, a total of 37,465 LLINs were provided through peripheral health facilities in high-risk districts.

5C.B.1.2 Review of Policies and Strategies

The malaria control programme is a component of the essential health care package, demonstrating the government's priority and commitment. Establishment of the Vector-Borne Disease Research and Training Centre has enabled the provision of research and training to support the malaria control programme. Funding from the Global Fund has supported efforts to achieve the targets for MDG 6.

Programme management, monitoring and evaluation, operational studies, establishment of technical working groups at the centre, and inter-country collaboration are major components identified for strengthening the country's overall malaria control programme.

The National Malaria Control Strategic Plan 2007/08–2011/12 has been developed and implemented, and has benchmarked four strategic priorities: early diagnosis and appropriate treatment, multiple prevention, epidemic preparedness, and BCC.

5C.B.2 NEEDS ASSESSMENT

5C.B.2.1 Gap Analysis

The programme has had a visible and positive impact on controlling malaria incidence and early outbreak in the country. However, emerging and re-emerging issues of migration, drug resistance, and bio-vectors still pose challenges and threats. Therefore, the success achieved so far should be consolidated, and further scaling up of the programme needs to be planned with broader community participation and in the spirit of meaningful public-private partnerships. The surveillance system needs to be strengthened so as to enable a prompt response to outbreaks of the disease.

For the long-term success of the programme, rural communities need to be continuously made aware about the threat of mosquito

breeding and how to control it at the local level. The IRS programme needs to be monitored regularly to improve its implementation and assess insecticide effectiveness. Use of LLINs needs to be further enhanced through BCC. At the same time, the programme needs to be monitored vigorously. There is an urgent need for re-stratification of malaria-risk areas as the last stratification was made 15 years ago.

Table 5C.B.1 shows present status, new targets and the gap between 2010 and 2015 for MDG 6 (Malaria) indicators.

5C.B.2.2 Challenges and Constraints

Challenges:

- ◆ An imported drug-resistant *Plasmodium Falciparum* case is a major challenge. In the past, the situation was deteriorating owing to conflict-related migration to India where there is high endemicity
- ◆ Advocacy with all recipients for using LLINs optimally is difficult. LLIN distribution is proving to be an effective tool in preventing malaria; however, not all recipients are using them
- ◆ Sustainability of LLINs distribution is also questioned, as it is totally supported by external donors. Distribution of LLINs needs to be incorporated into the national programme for sustainability. The IRS programme needs revamping to ensure sustainability, the quality of insecticides and timely execution of the programme

Constraints:

- ◆ Private-sector and community involvement is weak, even though the strategic plan envisages the use of public-private partnerships
- ◆ Public awareness has not yet reached the desired level. Furthermore, mosquito behaviour is also changing, probably as a result of climate change, and now they are shifting from lowland to highland areas. Without re-stratification of malaria zones, malaria outbreaks will become a challenge

5C.B.2.3 Strategic Interventions

The following interventions have been identified.

Continue:

- ◆ Raise awareness in rural communities on the threats from mosquito breeding and how to control it at the local level
- ◆ Distribute LLINs and complement this with stronger BCC

Reinforce:

- ◆ Re-stratify malaria-risk areas of the country, especially in view of climate change
- ◆ Strengthen the surveillance system to respond promptly to disease outbreaks.
- ◆ Monitor the effectiveness of insecticides regularly

Additional effort:

- ◆ Plan scale-up of the programme with broader community participation and also in the spirit of meaningful public-private partnerships

Table 5C.B.1: Present status, targets and gaps for MDG 6 indicators (Malaria)

Indicator	2010	2013 target*	2015 MDG target	Gap between 2010 and 2015
Clinical malaria incidence (per 1,000 population)	5.72 ^a	4.0	3.8	1.92
Annual parasite incidence (per 1,000 population)	0.18 ^a	0.17	0.15	0.03
Death rate associated with malaria (per 100,000 population at risk)	0.04	0.04	0.03	0.1
Proportion of children under five with fever who are treated with anti-malarial drugs (%)	2.85	2.65	2.5	0.35
Proportion of children under five sleeping under LLINs (%)	96.7	98	100	3.3

Source: ^aEDCD 2009; * NPC 2010.

5C.C COMBAT TUBERCULOSIS (TB)

5C.C.1 REVIEW OF PROGRESS, POLICIES AND STRATEGIES

5C.C.1.1 Review of Progress

Every year 40,000 people develop active TB, of whom 20,000 have infectious pulmonary disease (NTC 2008). Directly observed treatment short course (DOTS) has been successfully implemented throughout the country since April 2001. Expansion of this cost-effective and highly successful strategy has been effective in reducing mortality and morbidity from TB in Nepal. Achievement of global targets of diagnosing 70 percent of new infectious cases and curing 85 percent

of these patients will prevent 30,000 deaths in Nepal over the next five years.

The prevalence rate associated with TB was 240 per 100,000 of the population in 2009, a decrease of 13 percent since 2006. The case finding rate was 75 percent and the treatment success rate was 89 percent; both these exceed the global targets.

5C.C.1.2 Review of Policies and Strategies

A free TB diagnosis and treatment service is provided to all patients through basic health services. The National TB Programme (NTP) has introduced a computerized feedback system as part of its monitoring activities, and maintains a standard system of recording



and reporting conforming to the HMIS. NTP activities are coordinated with other health care activities, especially leprosy, HIV and STI programmes.

An urban DOTS programme has been implemented in major cities and towns. DOTS centres are established in ward-level health clinics, mobilizing communities and the private sector. The NTP has increased the number of DOTS centres and sub-centres, and integrated them into the general health system throughout the country. There are also DOTS plus pilots for treatment of multi-drug resistant (MDR) TB. The number of TB cases referred to the NTP from the private sector has increased remarkably. Some nursing homes manage DOTS centres. The NTP provides training to private pharmacists, resulting in some pharmacies using signboards to inform the public that TB drugs are freely available from health institutions.

The NTP has carried out repeated surveys on drug resistance. The last survey showed that MDR TB is almost constant for newly registered cases. This is a sign of a good DOTS programme. The NTP continues orientation and training for health authorities within military, police, prisons and schools, and also through the public media and local municipalities/VDCs in order to establish collaboration for appropriate TB diagnosis and treatment facilities according to the DOTS strategy.

Private–public partnerships have been developed in order to increase TB advocacy, diagnosis and treatment. Communities are involved in planning, implementing and

monitoring TB control services. The NTP had conducted regular surveys on the extent of HIV among TB patients. In 2006, 2.4 percent of TB patients had HIV infection. The national network of microscopy centres is also being strengthened, ensuring the quality of sputum smear examination and continuous supply of drugs to treatment centres.

5C.C.2 NEEDS ASSESSMENT

5C.C.2.1 Gap Analysis

Institutional mechanism needs to be enhanced for providing TB control services. A chest hospital, providing tertiary level care at the national level, needs to be established. Similarly, a chest unit needs to be opened in each regional hospital, along with the provision of a chest physician. MDR TB hostels need to be established at the regional level, based on the burden of disease. Posts for quality control assessors and facilities for drug susceptibility testing and culture need to be created at the regional level. In addition, there is a need to develop the national TB laboratory into a full-fledged national reference laboratory.

A concrete strategy needs to be developed to provide adequate support to MDR TB patients. Vacant posts for District TB and Leprosy Officers need to be filled immediately, and additional posts sanctioned wherever needed.

Table 5C.C.1 shows present status, new targets and the gap between 2010 and 2015 for MDG 6 (TB) indicators.

Table 5C.C.1: Present status, targets and gaps for MDG 6 indicators (TB)

Indicator	2010	2013 target*	2015 MDG target	Gap between 2010 and 2015
Prevalence rate associated with TB (per 100,000 of population)	244 ^a	230	210	34
Death rate associated with TB (per 100,000 of population)	22 ^a	21	20	2
TB case finding rate (%)	75 ^b	81	85	10
TB treatment success rate (%)	89 ^b	90	91	2

Source: ^aNTC 2009; ^bDOHS 2009; * NPC 2010.

5C.C.2.2 Challenges and Constraints

Challenges:

- ◆ Expansion of specialized services in the regional and central level for treatment of TB. Most TB patients cannot be detected initially at the regional level as there is only one chest hospital at the central level
- ◆ Management and treatment of patients who are resistant to TB drugs. Patients who are found to be resistant to TB drugs do not have a separate place to stay for enhanced treatment

Constraints:

- ◆ Inadequate socio-economic support to MDR TB patients. There are no posts at the regional level for human resources such as quality controllers or culture and drug susceptibility testers
- ◆ No certified national reference laboratory for quality checks
- ◆ In some districts, there is no sanctioned post for a District TB and Leprosy Officer and, in some districts, these posts are vacant

5C.C.2.3 Strategic Interventions

The following interventions have been identified:

Continue:

- ◆ Free health services to TB patients, and provide travel costs to MDR TB patients

Reinforce:

- ◆ Strengthen provision for culture and drug susceptibility testing facilities at regional and district levels

Additional effort:

- ◆ Establish a tertiary care chest hospital at the national level
- ◆ Open a chest unit in each zonal and regional hospital
- ◆ Provide adequate human resources for chest units in zonal and regional hospitals
- ◆ Establish MDR TB hostels at the regional level

- ◆ Strengthen collaboration between TB and HIV interventions and networks at different levels

Details of strategies interventions for Goal 4, 5 and 6 are presented in Annex 5, Table 5a, Table 5b, Table 5c, Table 5d and Table 5e.

5ABC.1 CROSS-CUTTING STRATEGIC INTERVENTIONS FOR MDGS 4, 5 AND 6

It is intended that at least 400 sub health posts are upgraded into health posts each year, eventually upgrading all posts. The time required for people to reach a health facility needs to be taken into consideration while establishing new ones. Health education messages relating to nutrition, tobacco use, and water, sanitation and hygiene need to be disseminated to villages in close coordination with sectoral ministries. The modality for delivering health services after federal restructuring needs to be identified through a comprehensive national-level discussion.

5ABC.2 RESOURCE NEEDS FOR MDGS 4, 5 AND 6

Based on the gap analysis to meet the targets for health-related MDGs, the costs for interventions required to meet targets for MDG 4 are presented in Table 5ABC.1.

The costs for interventions required to meet targets for MDG 5 are presented in Table 5ABC.2, showing that there is a total need of NRs 11.7 billion. Of which, the major share is absorbed by scaling up screening and operation services for uterine prolapse in rural areas, family planning commodities supply, strengthening the capacity of FCHVs in maternal health, and drugs (vitamin A, antihelminths and iron) supply respectively.

The total costs for interventions required to meet targets for MDG 6 (HIV AIDS) are estimated to be NRs 7.4 billion. Of which,

Table 5ABC.1: Resource needs for attaining MDG 4

(NRs in millions)

Intervention	2011	2012	2013	2014	2015	Total
Expand coverage of the CB-NCP	149.5	164.5	181.0	182.6	199.2	876.8
Carry out maintenance activities at scale for CB-IMCI	33.3	36.7	40.4	40.7	44.4	195.5
Implement integrated maternal, newborn and child health activities, followed by micro-planning	11.0	12.1	13.3	13.4	14.6	64.4
Strengthen immunization programme	140.0	154.0	169.4	171.0	186.6	821.0
Fill vacant VHW posts	Accommodated in the human resources costs					
Strengthen cold-chain capacity in all 75 districts	2.6	2.9	3.2	3.2	3.5	15.4
Construction of new cold chain units	33.0	36.3	39.9	40.3	44.0	193.5
Provide training on vaccine and cold-chain management	4.5	5.0	5.5	5.5	6.0	26.5
Expand the immunization programme to schools	15.4	17.0	18.6	18.8	20.5	90.3
Analyse feasibility and introduce new vaccines (rota virus, typhoid, hepatitis A, etc.)	627.0	689.7	758.7	765.6	835.2	3,676.2
Supply vaccines (BCG, polio, pentavalent, measles, TT, JE)	965.1	970.9	976.7	982.6	988.5	4,883.8
Supply drugs (vitamin A, anthelminths, cotrim, ORS and zinc)	149.1	150.0	150.9	151.8	152.8	754.6
Orient VHWs and MCHWs	8.9	9.8	10.8	10.9	11.9	52.3
Strengthen monitoring and supervision system	1.7	1.9	2.1	2.1	2.3	10.1
Total	2,141.1	2,250.8	2,370.5	2,388.5	2,509.5	11,660.4

Table 5ABC.2: Resource needs for attaining MDG 5

(NRs in millions)

Intervention	2011	2012	2013	2014	2015	Total
Emphasize continuum of care	99.0	108.9	119.8	131.8	145.0	604.5
Strengthen referral systems	3.5	3.9	4.3	4.7	5.1	21.5
Establish birthing centres in all health posts and selected sub health posts	Accommodated in physical infrastructure costs					
Strengthen and expand BEOC/CEOC sites, ensuring human resources availability	Accommodated in human resources costs					
Strengthen tracking of pregnant women	8.8	9.7	10.6	11.7	12.9	53.7
Improve counselling and awareness programmes to encourage delivery at health facilities	1.2	1.3	1.4	1.6	1.7	7.2
Increase the number of SBAs and promote institutional delivery	92.2	101.4	111.5	122.7	135.0	562.8
Revamp family planning as an integral part of reproductive health services	33.0	36.3	39.9	43.9	48.3	201.4
Strengthen integrated family planning services in hospitals	93.5	102.8	113.1	124.4	136.9	570.7
Provide training on family planning methods to health workers	4.0	4.3	4.8	5.3	5.8	24.2
Initiate adolescent-focused programmes on sexual and reproductive health	30.0	33.0	36.2	39.9	43.9	183.0
Establish a system to ensure that private and non-government health facilities provide information on maternal health services for the HMIS	8.2	9.1	10.0	11.0	12.1	50.4
Strengthen the capacity of FCHVs in maternal health	345.3	379.9	417.8	459.6	505.6	2,108.2
Initiate obstetric ultrasound programme for maternal health in rural areas	8.8	9.7	10.6	11.7	12.9	53.7
Strengthen safe abortion service sites in highly populated areas	2.2	2.4	2.7	2.9	3.2	13.4
Scale up screening and operation services for uterine prolapse in rural areas	521.4	573.5	630.9	694.0	763.4	3,183.2
Screen for cervical cancer	11.0	12.1	13.3	14.6	16.1	67.1
Develop and implement programmes to reduce gender-based violence	7.5	8.2	9.0	10.0	10.9	45.6
Continue demand-side financing for improving maternal health	82.5	90.7	99.8	109.8	120.8	503.6
Supply vaccines (TT for pregnant women)	4.9	4.9	5.0	5.1	5.1	25.0
Supply drugs (vitamin A, anthelminths and iron)	231.0	232.4	233.8	235.2	236.6	1,169.0
Supply family planning commodities	373.1	410.5	451.5	496.7	546.4	2,278.2
Total	1,961.1	2,135	2,326	2,536.6	2,767.7	11,726.4

major share is covered by supply of ARVs and scaling up HIV prevention programmes (Table 5ABC.3).

The total costs for interventions required to meet targets for malaria are estimated to be NRs 73.6 million, of which the major share is distribution of LLINs complemented by stronger BCC, strengthening of the surveillance system to respond promptly to disease outbreaks, and planning for scale-up of the programme with broader community participation and meaningful public-private partnerships (Table 5ABC.4).

The resources required for meeting targets for MDG 6 (TB) are NRs 2.3 billion, where the major proportion is covered by drug supply (Table 5ABC.5).

The overall resource requirement for attaining health-related MDGs is NRs 105.7 billion

for 2011–2015 (Table 5ABC.6). This includes the resources required for all human resources and physical infrastructure, as it is difficult to separate these costs for each MDG. While calculating costs for physical infrastructure, the government's document, Maintenance Strategy for Infrastructures in the Health Sector (Building and Support Services), has been used as a reference. For calculating human resource costs, the government's salary sheet, with adjustments, has been used. The total costs for attaining health-related MDGs are NRs 16.0 billion in 2011, NRs 18.0 billion in 2012, NRs 21.0 billion in 2013, NRs 23.9 billion in 2014 and NRs 26.8 billion in 2015.

The per capita costs for MDGs 4 and 5 have been calculated (Tables 5ABC.7). They range from NRs 632 in 2011 to NRs 723 in 2015 for MDG 4, and from NRs 233 in 2011 to NRs 302 in 2015 for MDG 5.

Table 5ABC.3: Resource needs for attaining MDG 6 (HIV AIDS)

(NRs in millions)

Intervention	2011	2012	2013	2014	2015	Total
Establish a mechanism to provide continuous services to identified HIV-positive people	1.8	2.2	2.6	3.1	3.5	13.2
Strengthen DACCs to coordinate the district-level response	16.5	18.1	20.0	22.0	24.1	100.7
Integrate HIV-related services with reproductive health, primary health care and TB services	5.0	0	0	0	0	5.0
Promote effective VCT services throughout the country	4.3	4.8	5.2	5.8	6.3	26.4
Integrate the PMTCT programme with the safe motherhood programme	7.8	9.0	10.3	11.9	13.7	52.7
Accelerate comprehensive condom programming	2.2	2.4	2.7	2.9	3.2	13.4
Strengthen sentinel surveillance system through a multi-sectoral approach	55.0	60.5	66.5	73.2	80.5	335.7
Enhance quality assurance system for HIV-related tests	8.2	9.0	9.9	10.9	12.0	50.0
Provide an adequate supply of ARVs for needy people	599.3	802.0	1,070.6	1,419.5	1,865.4	5,756.8
Scale up HIV prevention programmes, especially among IDUs, FSWs, CSWs and MSM	165.0	181.5	199.6	219.6	241.6	1,007.3
Make special efforts to educate migrant workers about preventing and treating HIV infection	4.4	4.8	5.3	5.8	6.4	26.7
Integrate HIV and AIDS programmes into national health system	10.0	0	0	0	0	10.0
Total	879.5	1,094.3	1,392.7	1,774.7	2,256.7	7,397.9

Table 5ABC.4: Resource needs for attaining MDG 6 (Malaria)

(NRs in millions)

Intervention	2011	2012	2013	2014	2015	Total
Plan scale-up of the programme with broader community participation and also in the spirit of meaningful public-private partnerships	2.9	3.1	3.5	3.8	4.2	17.5
Re-stratify malaria-risk areas of the country, especially in view of climate change	2.5	0	0	0	0	2.5
Raise awareness in rural communities on the threats from mosquito breeding and how to control it at the local level	0.5	0.6	0.6	0.7	0.8	3.2
Strengthen the surveillance system to respond promptly to disease outbreaks	3.4	3.8	4.1	4.5	5.0	20.8
Monitor the effectiveness of insecticides regularly	0.7	0.8	0.9	1.0	1.1	4.5
Distribute LLINs and complement this with stronger BCC	3.8	4.2	4.8	5.3	6.0	24.1
Develop a vector-control strategy	1.0	0	0	0	0	1.0
Total	14.8	12.5	13.9	15.3	17.1	73.6

5ABC.3 RESOURCE GAPS FOR MDGS 4, 5 AND 6

There are three cost categories: human resources, physical infrastructure, and interventions. Only programme costs are considered different for each MDG and calculated separately, while the other two categories are considered as required for meeting all health-related MDGs and so calculated together.

Total human resources required by 2015 are estimated to be 42,253 individuals; this includes medical doctors, technicians, paramedical and administrative staff (Annex 5, Table 5.f). It is based on the Strategic Plan for Human Resources for Health 2003–2017.

During the five-year period 2011–2015, a total of 2,028 new constructions for health institutions (health posts, primary health care centres and hospitals) will have to be built and 189 health institutions will need to be rehabilitated/reconstructed to provide better services for the people (Annex 5, Tables 5.g and 5.h). Tables 5ABC.7 and 5ABC.8 indicate the required physical infrastructure (new construction and rehabilitation respectively) for meeting MDGs 4, 5 and 6. Assumptions have been made, with the government's document (Maintenance Strategy for Infrastructures in the Health Sector (Building and Support Services) adjusted for planned interventions.

Table 5ABC.8 shows that there is an overall gap of NRs 20.8 billion for implementation of strategic interventions for attaining MDGs 4, 5 and 6 for the period between 2011 and 2015. The gap increases from NRs 3.6 billion in 2011 to 4.6 billion in 2015. Resource availability is estimated to be NRs 84.9 billion against needs of NRs 105.7 billion. On one hand, there is a need to give more focus to MDG-related programmes within sectors of the Ministry of Health and Population and, on the other hand, strategic interventions also require initiation from other sectors (for instance, education, local development and education) given that many issues related to MDGs 4, 5 and 6 are multi-sectoral. While estimating resource availability, more attention has been given to MDG-related programmes within the health sector.

Table 5ABC.5: Resource needs for attaining MDG 6 (TB)

(NRs in millions)

Intervention	2011	2012	2013	2014	2015	Total
Establish a tertiary care chest hospital at national level	Accommodated in physical infrastructure costs					
Open a chest unit in each zonal and regional hospital	11.5	12.7	14.0	15.4	17.0	70.6
Provide adequate human resources for chest units in zonal and regional hospitals	Accommodated in human resources costs					
Establish MDR TB hostels at the regional level	132.0	145.2	159.7	175.7	193.3	805.9
Provide culture and drug susceptibility testing facilities at the regional level	25.5	28.1	30.9	34.0	37.4	155.9
Continue providing travel costs to MDR TB patients	5.3	5.8	6.4	7.0	7.7	32.2
Supply drugs	198.0	217.8	239.6	263.5	289.9	1,208.8
Total	372.3	409.6	450.6	495.6	545.3	2,273.4

Table 5ABC.6: Estimated resource needs for attaining MDGs on health

(NRs in millions)

Particular	2011	2012	2013	2014	2015	Total
MDG 4 (Child Health)	2,141.10	2,250.80	2,370.50	2,388.50	2,509.5	11,660.4
MDG 5 (Maternal Health)	1,961.1	2,135.0	2,326.0	2,536.6	2,767.7	11,726.4
MDG 6 (HIV, AIDS)	879.5	1,094.3	1,392.7	1,774.70	2,256.7	7,397.9
MDG 6 (Malaria)	14.8	12.5	13.9	15.3	17.1	73.6
MDG 6 (TB)	372.3	409.6	450.6	495.6	545.3	2,273.4
Human resources	2,330.7	3,737.9	6,189.6	8,367.7	10,640.9	31,266.8
Physical infrastructure	8,272.0	8,331.0	8,271.5	8,320.6	8,089.9	41,285.0
Total	15,971.5	17,971.1	21,014.8	23,899.0	26,827.1	105,683.5

Note: Adapted from MOHP (2003) Nepal Strategic Plan for Human Resources for Health 2003–2017. Costs for constructing and equipping all required health facilities.

Table 5ABC.7: Estimated per capita resource needs for attaining MDGs on health

(in NRs)

Particular	2011	2012	2013	2014	2015
Per capita cost (NRs) on child health	632	660	691	692	723
Per capita cost (NRs) on maternal health	233	249	265	283	302

Note: (i) 0–5-year child population is used as denominator for calculating per capita cost, and (ii) 10–49-year female population is used as denominator for calculating per capita cost.

Table 5ABC.8: Resource needs, availability and gaps for attaining MDGs 4, 5, and 6

(NRs in millions)

Particular	2011	2012	2013	2014	2015	Total
Need	15,971.50	17,971.10	21,014.80	23,899.00	26,827.10	105,683.50
Availability	12,329.17	14,199.39	16,807.60	19,328.74	22,228.05	84,892.96
Gap	3,642.33	3,771.71	4,207.20	4,570.26	4,599.05	20,790.55

5ABC.4 CONCLUSIONS

Achieving health-related MDGs depends upon the extent to which health programmes can be integrated, shortfalls in per capita health expenditure met, and the health system strengthened specifically in terms of human resources, financing and organized service delivery.

The government has allocated significant resources for health sector development, increasing the health budget from 4.6 percent of the national budget in 2008/09 to 6.2 percent in 2009/10. In recent years, revenue mobilization has improved marginally. The most recent data from the Nepal National Health Accounts suggests that the GoN contributes less than a quarter of total health spending, while out-of-pocket payments from the public contribute almost 60 percent of total health spending. The total per capita spending has continued to increase over the years. Public spending on health

has been increasing as a result of the growing realization of the importance of health to socio-economic development and the direct welfare of citizens.

As health care financing in resource-poor countries like Nepal relies mostly on household out-of-pocket payments, it is important that the MOHP provides health care protection for the poor. There is a need to mobilize more resources for health. The growth rate of health expenditure and the ratio of health expenditure to total government expenditure suggest that there is limited fiscal space (which means the collection of resources for health care financing) to further increase the health budget, in particular, in consideration of competing government priorities in other sectors. The contribution of the health sector to improving socio-economic development and poverty reduction needs to be re-defined and emphasized to increase the budget for the health sector.



CHAPTER 6

ENVIRONMENTAL SUSTAINABILITY

MDG 7: ENSURE ENVIRONMENTAL SUSTAINABILITY

6a ENERGY SERVICES

6a.1 REVIEW OF PROGRESS, POLICIES AND STRATEGIES

6a.1.1 Review of Progress

Nepal has one of the world's lowest rates of per capita electricity consumption, with an average of 80 kWh annually. Some 87.1 percent of the population still relies on traditional biomass fuels for cooking and heating, and only 56 percent has access to electricity (CBS 2009). Alternative energy sources are being harnessed together with water resources for providing modern energy services such as lighting, heat for cooking and space-heating, and power for transport, water pumping, grinding and numerous other uses.

Nepal is rich in sources of clean energy but it has been only marginally successful at harnessing these sources. As a result, traditional energy sources still play a dominant role in energy supply, as can be seen in Table 6.1. Of total energy, traditional sources account for 87.1 percent, commercial sources for 12.2 percent and renewable sources for 0.7 percent (WECS 2010). Residential energy accounts for over 89 percent of total energy consumption. Cooking and heating are the main household uses (Table 6.1). More than two thirds (68.4 percent) of households use fuelwood as their main source for cooking, followed by LPG (12.3 percent), dung (10.7 percent), biogas (2.4 percent) and kerosene (1.4 percent) (Table 6.2). LPG is the main source of fuel for cooking in urban areas (51.8 percent). Fuelwood is the major source

Table 6.1: Sectoral demand for energy (projected for 2010) (GJ '000)

Energy Supply	Sectoral consumption						Total
	Residential	Industrial	Commercial	Transport	Agricultural	Other	
Traditional	344,956.1 (86.1)	2,071.4 (0.5)	1,841.9 (0.5)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	348,869.5 (87.1)
Commercial	9,061.3 (2.3)	11,298.4 (2.8)	3,280.3 (0.8)	20,876.0 (5.2)	3,646.4 (0.9)	739.9 (0.2)	48,902.3 (12.2)
Renewable	2,734.6 (0.7)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	2,734.6 (0.7)
Total	356,752.1 (89.1)	13,369.8 (3.3)	5,122.2 (1.3)	20,876.0 (5.2)	3,646.4 (0.9)	739.9 (0.2)	400,506.4 (100.0)

Source: WECS 2010.

Note: Figures within paranthesis indicate percentage of the total energy demand.

Table 6.2: Percentage of households by main fuel used for cooking

Geography	Fuel-wood	Dung	Leaves/ straw	LPG	Kerosene	Biogas	Others
Nepal	68.4	10.7	4.3	12.3	1.4	2.4	0.5
Mountain	87.9	1.6	0.3	5.7	2.8	0.4	1.2
Hill	76.2	0.7	0.4	18.1	2.4	1.7	0.5
Tarai	58.3	21.3	8.4	7.8	0.3	3.4	0.4

Source: CBS 2009.

of cooking fuel in the Mountains (87.9 percent), Hills (76.2 percent) and Tarai (58.3 percent). In the Tarai region, dung is used by 21.3 percent of households (CBS 2009).

A little more than half (56.1 percent) of households in the country have access to electricity for lighting, whereas 33.0 percent still depend on gas/oil/kerosene (Table 6.3). Urban areas have greater access to electricity for lighting than rural areas (93.1 percent compared to 48.5 percent).

6a.1.2 Review of Policies and Strategies

Nepal has formulated various policies and strategies to create an enabling environment for the generation and expansion of energy services using hydropower and renewable energy resources. The Water Resources Act 1992 sets out regulatory procedures for the use of water in the country through a system of licensing. The Water Resources Strategy 2002 and National Water Plan 2005 have recognized that development of water resources needs to be more closely integrated with sustainable social and economic development. The National Water Plan seeks to develop sufficient capacity (700 MW by 2007, 2,100 MW by 2017 and 4,000 MW by 2027) to meet projected domestic demand for power. In response to the serious problem of load-shedding, the government has brought out the National Electricity Crisis Resolution Action Plan 2008. This action plan includes activities such as making the

Table 6.3: Percentage of households by main sources used for lighting

Geography	Electricity	Kerosene	Others
Nepal	56.1	33.0	11.0
Mountains	41.3	29.4	29.3
Hills	55.5	27.7	16.8
Tarai	58.8	38.4	2.8

Source: CBS 2009.

power purchase agreement a flat rate for power plants up to 25-MW capacity, providing tax concessions, strengthening and adding transmission capacity, initiating a system of energy audits, implementing a code of conduct to save energy, encouraging efficiency through use of low-energy bulbs, and increasing power production through efficient operation of current generation facilities. The Task Force Reports for Generating 10,000 MW Hydropower in 10 Years and 25,000 MW Hydropower in 20 Years recommend various measures for increasing people's access to energy services.

The Rural Energy Policy 2006, Subsidy for Renewable (Rural) Energy 2006 and Renewable (Rural) Energy Subsidy Delivery Mechanism 2006 all aim to contribute to rural poverty reduction and environmental conservation by ensuring access to clean, reliable and appropriate energy in rural areas. Specific objectives are to reduce dependency on traditional energy, conserve the environment and integrate rural energy with social and economic activities. Likewise, the Local Self-Governance Act, 1999 provides for formulation, implementation, distribution and maintenance of mini- and micro-hydropower projects and other energy projects within District Development Committee (DDC) and VDC jurisdictions.

The Master Plan for Forestry Sector 1988 aimed to meet people's basic needs for forestry products on a sustainable basis, and protect and manage forests through people's participation. The Forestry Sector Policy 2000 attempts to address rural energy problems by focusing on managing the sector for fuelwood.

With regard to policies for the petroleum subsector, the Nepal Oil Corporation still enjoys a monopoly to procure, distribute and sell petroleum products in the country. It is required to sell petrol with 10 percent ethanol. Currently, the oil sector is exposed to external influence, including political interference. However, the sector is moving towards a market-oriented pricing policy by adjusting buying prices with selling prices.

The National Transport Policy 2001 provides for balanced development of the transport system including railways, river transport and ropeways with power from renewable sources. Development to date, however, remains highly focused on road transport alone.

The Approach Paper for the TYP contains strategies and working policies for the development, transmission and distribution of energy services. Strategy focuses on public-private partnership for the development of hydropower, renewable energy and transmission lines. It also focuses on climate-change-friendly development of energy services. Furthermore, it has, for the first time, proposed a policy to promote people's hydropower under the leadership of local government with the participation of local institutional capital.

6a.2 NEEDS ASSESSMENT

6a. 2.1 Gap Analysis

As there are no MDG targets for energy services, there is no basis to measure gaps. However, Nepal is facing a severe energy crisis, as a result of the limited supply of electricity. This shortage has negatively impacted on extension of rural electricity. The unsustainable import of petroleum products from India (currently more than two thirds of Nepal's merchandise-export earnings go to India for paying the petroleum bill), the high degree of disparity in the use of modern energy services within and across development regions, and the low per capita electricity consumption all indicate the need for additional efforts, along with the private sector and community organizations, to increase energy services to the wider public and to power-hungry sectors and institutions.



Broader targets for energy services have been set on the basis of past performance and the government's targets in the TYP as well as on projections made about the likely course of development in the sector.

The installed capacity of electricity in the country reached 691 MW in 2009 (NPC 2010). The TYP has a target of installing 972 MW capacity of hydropower by mid-2013. This will increase to 1,579 MW by mid-2015. Micro-hydro will expand from 13.1 MW in 2009 to 38.1 MW by 2015. Renewable energy technologies such as biogas plants, improved water mills, solar water pumps and improved cooking stoves will provide two- to fivefold more household coverage in 2015 than in 2009 (Table 6.4).

Access to energy services for households, education and health institutions, market centres, government and non-government institutions, small and micro industries, and rural transport and agriculture sectors is presented in Annex 6, Table 6a. Household access to electricity services will increase from 56 percent in 2009 to 65 percent in 2013 and 70 percent in 2015. In most institutions, access to energy services will remain within the range of 20–40 percent. In the case of agriculture, coverage will increase from 54 percent (2009) to 70 percent (2015), while rural transport coverage will range from 70–90 percent.

6a.2.2 Challenges and Constraints

Challenges:

- ◆ Increasing generation of hydropower by attracting private investments in order to balance demand for and supply of electricity

- ◆ Reducing electricity leakages
- ◆ Extending transmission lines to transmit electricity from power plant sites to load areas and evacuate all electricity that can be generated from already constructed hydropower stations
- ◆ Increasing pace of generation from micro-hydro and solar energy in rural areas
- ◆ Developing provision for multiple clean energy services at affordable prices
- ◆ Availing funds for research and development of biofuels and natural gas
- ◆ Implementing Renewable (Rural) Energy Policy 2006 effectively
- ◆ Updating hydropower development policies and legislation

Constraints:

- ◆ Political instability and unstable government, giving rise to uncertainties, low cost-effectiveness interventions, and weak implementation of already committed targets
- ◆ Delay in legal and policy reform in electricity sector, rural electrification and alternative energy promotion
- ◆ Limited availability of capital funds at local level and high cost of funds
- ◆ Lack of adequate and reliable wind data
- ◆ Unresolved local conflicts affecting the time-bound construction of power projects
- ◆ Low priority given to research and development
- ◆ Weak coordination among concerned energy-related institutions

6a.2.3 Strategic Interventions

While designing interventions, emphasis has been given to generating and distributing clean energy services. It is intended that the use of kerosene and fuelwood be gradually reduced by substituting it with cleaner energy sources.

Continue:

- ◆ Promote small and medium-sized hydropower projects by mobilizing private and public capital
- ◆ Launch existing renewable energy programmes

Table 6.4: Percentage of households with access to renewable energy services

Energy Service	Status of 2010	2013 target*	2015 MDG target
Solar water pump	0.17	0.52	0.92
Solar drier/cooker	0.04	0.07	0.08
Biogas plant	4.24	6.12	7.36
Improved water mill	6.35	15.16	23.47
Improved cooking stove	7.02	11.03	13.86

Source: AEPC 2010; * NPC 2010.

Reinforce:

- ◆ Provide policy incentives for large-scale hydropower projects and make them effective so that both internal and external investment could be encouraged to increase production of hydro-energy
- ◆ Encourage and expand the biogas programme
- ◆ Promote solar driers/cookers in the Mountains and Tarai
- ◆ Make improved cooking stoves appropriate for all regions and all family sizes
- ◆ Make bio-briquettes accessible and affordable for cooking and space heating
- ◆ Encourage community electrification for the distribution of electricity
- ◆ Electrify farming areas of the Tarai for pumping water
- ◆ Scale up micro-hydro generation and solar energy systems

Additional effort:

- ◆ Initiate people's hydro programmes, as envisaged in TYP
- ◆ Initiate grid-interactive solar energy systems in urban areas
- ◆ Promote wind energy in viable areas of the Tarai so that groundwater can be pumped
- ◆ Replace reliance on fossil fuels such LPG for cooking and other purposes by hydro-power
- ◆ Promote energy efficiency and use of power-efficient appliances for energy conservation
- ◆ Promote research and development for biofuel

6a.2.4 Resource Needs and Gaps**6a.2.4.1 Resource Needs**

The major consumer of energy is the household. The second major user is rural transport. Small and micro industry and agriculture come in third and fourth in terms of energy use. This projection has been based on the results of the costing exercise (Annex 6, Table 6b).

Table 6.5 summarizes the resource needs for energy interventions for 2011–2015. The total cost is estimated at NRs 168.1 billion. Of this, the capital cost is NRs 72.9 billion and recurrent cost is NRs 95.3 billion. Average annual per capita financing requirement is NRs 1,130. The estimated resource needs for the five-year period for cooking and heating are NRs 62.3 billion, for electricity and other end-uses are NRs 83.9 billion, and for liquid fuel end-uses are NRs 21.9 billion.

6a.2.4.2 Resource Gaps

The Government of Nepal has given priority to the provision of energy services to the people. However, financial inputs allocated for this are usually insufficient. The projection made on the basis of Medium Term Expenditure Framework data helps to compare planned allocations for energy services with required financial inputs for developing energy services that can contribute to achievement of MDG targets. Table 6.6 shows that the projected budget covers only 55–66 percent of required funding for energy. This clearly indicates that the government needs to mobilize substantial additional funding.

Table 6.5: Resource needs for attaining MDG 7 (Energy)*(NRs in millions)*

Particular	2011	2012	2013	2014	2015	Total
Cooking/heating	11,313	11,703	12,108	13,065	14,098	62,289
Electricity end-uses	13,260	14,882	16,736	18,529	20,519	83,925
Liquid fuel end-uses	3,673	4,010	4,380	4,738	5,126	21,928
Total	28,246	30,596	33,224	36,333	39,744	168,142
Capital cost	12,197	13,224	14,349	15,767	17,324	72,860
Recurrent cost	16,048	17,372	18,875	20,566	22,420	95,282

Table 6.6: Resource gaps for attaining MDG 7 (Energy)*(NRs in millions)*

Particular	2011	2012	2013	2014	2015	Total
Need	28,245.6	30,595.7	33,223.7	36,332.6	39,744.0	168,141.6
Availability	17,417.5	20,025.4	20,066.4	21,036.2	22,052.9	100,598.4
Gap	10,828.8	10,570.3	13,157.3	15,296.4	17,691.1	67,543.2

6a.3 CONCLUSIONS

Modern energy services are important contributors to achieving the MDGs in several ways. Reliable supply of modern energy could help efforts to meet targets for creating employment and maintaining environmental sustainability. A little less than half of the population still does not have access to electricity, with kerosene wick lamps or pieces of pine tree. The challenges are diverse—generating electricity, expanding access, and utilizing sources in various productive end-uses. There is a need for electrification of rural areas, mechanization of agriculture, powering of educational and health institutions, and supplying of reliable energy for small and micro industries. Increasing access to energy services will definitely increase the efficiency and productivity of these institutions and subsectors.

Strategic interventions in the energy subsector, which were identified after the review of documents and discussions among concerned stakeholders and institutions, include the development of micro, small and medium hydropower projects, construction of transmission and distribution lines, control of electricity leakages, development of alternative energy resources for lighting and cooking purposes, and research and development. Attempts should be made to replace kerosene with electricity. Therefore, the government needs to mobilize sufficient resources. Resource needs for implementation of strategic interventions over the next five years are estimated to be NRs 168.1 billion. Of this, the capital cost amounts to NRs 72.9 billion and the recurrent cost to NRs 95.3 billion.

By scaling up the availability of affordable and sustainable energy services, there is a greater chance of achieving the MDGs, as energy services have a multiplier effect on the development of health, education, transport, telecommunications, safe drinking water, and sanitation services, and on the productivity of income-generating activities in agriculture, industry, and tertiary sectors.

6b ENVIRONMENT AND CLIMATE CHANGE

6b.1 REVIEW OF PROGRESS, POLICIES AND STRATEGIES

6b.1.1 Review of Progress

Progress to achieve targets for MDG 7 on environment sustainability is mixed, with insufficient data on a number of indicators. However, if prevailing trends persist, the target on reducing biodiversity loss will be achieved (Table 6.7). The area covered by both forest and shrub has been reported as 39.6 percent since 2000. There is data gap in three indicators, namely, proportion of fish stocks in biological limits, proportion of total water resources used, and proportion of species threatened with extinction.

Integration of environmental management into development has been the continued thrust since the mid-1980s and of recent plans, especially the Tenth Plan and the TYIP. This has so far resulted in the approval of environmental impact assessment (EIA) reports for 117 projects as of mid-May 2011, in accordance with the provisions of the Environment Protection Act 1996 and Rules 1997. Incorporation of environmental concerns in project formulation has been institutionalized at the DDC level in the spirit of the Local Self-Governance Act. Environmental education has been internalized in the school curriculum from primary to higher secondary levels, and trained human resources are being produced.

Carbon financing is being considered as a potential venture for the forestry sector, and a unit for reducing emissions from deforestation and degradation (REDD) is preparing to act. Urban solid-waste management is being considered from a resource perspective and a strategy is being formulated. Nepal has also promoted the carbon trade by approving the project design document (PDD) of various Clean Development Mechanism (CDM) projects of different sectors in order to benefit from the Article 12 of the Kyoto Protocol. As of mid-May 2011, CDM projects, having about 432,000 tCO₂eq certified emission reductions (CERs), have been approved by the designated national authority (DNA), the Ministry of Environment. A unit has been set up for carbon-financing projects in the forestry sector related to REDD.

Indicators related to preparedness for vulnerability caused by global climate change have been proposed in the National Adaptation Programme of Action (NAPA) 2010 which was approved by the Government of Nepal on 28 September 2010. The Ministry of Environment, in collaboration with concerned ministries and development partners, is already engaged in developing proposals for the implementation of prioritized adaptation actions as included in the NAPA. In order to address the adverse impacts of climate change, the Ministry of Environment is also engaged in developing projects under the Pilot Programme for Climate Resilience (PPCR); inventorying greenhouse gases (GHGs); conducting vulnerability assessment including capacity-building and identifying mitigation options under the Second National Communication Project; and identifying needs for adaptation and technology needs. The government has started the Mountain Initiative to develop common understanding about the impacts of climate change in the mountains and bring mountains to the forefront of international deliberations and negotiations related to climate change and other multilateral environmental agreements (MEAs). These initiatives will reposition Nepal's efforts in maintaining the ecology and benefits from natural resources management, and address the continued adverse impacts of climate change in development and natural resources sectors. The government has bolstered partnering with development partners, academia, NGOs, the private sector and civil society to implement environment and climate-change-related activities in recent years. The Ministry of Environment has initiated preparation of environmental quality standards and operation of air quality monitoring stations.



6b.1.2 Review of Policies and Strategies

For the first time, the Interim Constitution of Nepal 2007 has recognized the 'right to a clean environment' as a fundamental right (Article 16.1) for citizens of Nepal. The constitution also incorporates a provision for at least 40 percent of the natural forest area of the country to be conserved. The Environment Protection Act 1996 and Environmental Protection Regulations 1997 are Nepal's key environmental laws. The act provides provisions for environmental assessment, prevention and control of pollution, appointing of environmental inspectors for monitoring, protection of national heritage, declaration of environmental protection areas, setting up of laboratories to help in pollution control and environment protection processes, permission to collect samples for analysis, the establishment and operation of the Environment Protection Fund, and establish-

Table 6.7: Progress related to biodiversity indicators

Indicator	2005	2010	2015 MDG target
Area under forest coverage (%) [*]	39.6 ^a	39.6 ^a	40
Protected areas (PAs) designated to effectively maintain biodiversity (km ²) and (% total area of the country) ^{**}	28,586 (19.4%)	33,073 (22.5%)	>22.5 %
Area (million ha) of forest managed by community forestry	1.20	1.23	1.29
Proportion of total water resources used	6.66	n/a	-

Note: * Forest and shrub area together; ** MFSC/GoN 2009

Sources: a. DFRS 1999; NPC/UNCT 2005 and 2010.

ment of the Environment Protection Council. In addition, it contains rules pertaining to initial environmental examination (IEE) and EIA, standards, prevention and control of pollution, biodiversity, management and transportation of waste, and other necessary matters. The Environment Protection Rules 1997 includes provisions for the approval of IEE and EIA and their associated reports such as scoping document and terms of reference. Other laws also include issues relevant to the environment and climate change such as Soil and Water Conservation Act 1982; Water Resources Act 1992; Industrial Enterprises Act 1992; Vehicle and Transport Management Act 1992 and Regulations 1997 (with First Amendment in 2004); Forest Act 1993 and Regulations 1995; Local Self-Governance Act 1999 and Local Self-Governance Regulations 1999; and Ozone-Depleting Substance Consumption Regulations 2001.

Regarding policy measures, the Climate Change Policy 2011 recognizes the pace of climate change and the nature of its impact on different sectors, and includes issues for managing natural resources and mitigating adverse impacts, as well as carbon trading for poverty reduction and its use for sustainable development. Other major environmental policies include the National Conservation Strategy 1988, the Nepal Environmental Policy and Action Plan 1993, and the Sustainable Development Agenda 2003. Standards have also been prepared and are under implementation for maintaining the quality of the air and water. The NAPA, approved by the government in September 2010, focuses on most urgent and immediate adaptation needs of the country. For the first time in Nepal, the TYP has placed explicit focus on climate-resilient planning, especially in the infrastructure sector (NPC 2010). The TYP has emphasized environmental monitoring and auditing to benefit from IEE and EIA processes and ensure that projects are environmentally sound and sustainable.

6b.2 NEEDS ASSESSMENT

6b.2.1 Gap Analysis

Progress to achieve targets for MDG 7 on environment sustainability is mixed: the target for reducing biodiversity loss has been almost achieved; however, to identify the situation of other targets and indicators, an information system is yet to be developed.

Landscape-level planning and monitoring has yet to be made effective for biodiversity conservation, protecting ecosystems under threat (UN 2009), and harmonization in access to genetic resources and benefit-sharing between national, inter- and intra-districts, and local levels.

Biodiversity documentation has yet to be internalized as a regular government programme, through adequate training for field staff, increased public awareness and utilization of approved formats for documentation.

In Nepal, the Siwalik Hills watershed provides vital ecosystem goods and services that support the livelihoods of local communities as well as deliver water resources for domestic and agricultural use to downstream populations in the Tarai. Therefore, the region has to be protected through an integrated approach that recognizes the hydrological, demographic and economic relationships between the Tarai and the Siwaliks. For biodiversity conservation, there is a need to establish clear objectives, indicators and targets at the project/programme level in line with Convention on Biological Diversity 2010 targets, and ensure sufficient linkages between country programmes and individual projects. It is recommended that the indicators chosen are realistic, time-bound and results-oriented, and include environmental, social and economic processes. In addition, it is equally important to secure

funding, and develop human resources for the implementation of the Biodiversity Implementation Plan 2006. Similarly, Nepal has to develop and implement action plans to benefit from the MEAs to which Nepal is a party; of these, the Convention on Biological Diversity deserves special attention. There is also a need to identify and address impacts on biodiversity resulting from climate change and other environmental problems.

6b.2.2 Challenges and Constraints

Challenges:

- ◆ Increasing forest productivity
- ◆ Building awareness on the issues of climate change
- ◆ Controlling forest encroachment
- ◆ Linking forest utilization with livelihood enhancement
- ◆ Maintaining a high level of species richness
- ◆ Streamlining biodiversity (both forests and agro-biodiversity) benefits for livelihoods promotion
- ◆ Strengthening good governance for greater equity
- ◆ Controlling overuse of pesticides

Constraints:

- ◆ Inadequate information about the occurrence, location, quantity of products, technologies for sustainable use, value and importance of genetic resources
- ◆ Lack of mechanisms for bio-prospecting
- ◆ Weak documentation and registration of resources (for example, identifying the multiple owners in different districts)
- ◆ Limited institutional arrangements required to facilitate access, prior informed consent (PIC) and benefit-sharing at both government and community levels
- ◆ Weak dispute-settlement mechanisms at the community level
- ◆ No specific national programme to undertake research on aspects of climate change, including the impact of atmospheric CO₂ levels on biota and the livelihoods of local communities
- ◆ Inadequate resources (human and financial) and technologies for the effective implementation of MEAs, in particular, those related to species and ecosystem conservation, sustainable use and benefit-sharing, and climate change
- ◆ Inadequate implementation of environmental quality standards that greatly threatens the existence of species



6b.2.3 Strategic Interventions

To address the challenges and problems and attain MDG targets, the following strategic interventions are identified.

Continue:

- ◆ Periodic revisions and enforcement of air quality standards
- ◆ Enhancement and enforcement of vehicle standards
- ◆ Facilitation of forestry user groups
- ◆ Biodiversity conservation programmes
- ◆ Community-based awareness-raising and capacity-building programmes
- ◆ Enhancement of environment educational curricula

Reinforce:

- ◆ Protection of forest and plantation
- ◆ Medicinal plant development programmes
- ◆ Livelihood forestry programmes
- ◆ REDD and carbon financing and benefiting from CDM
- ◆ CDM capacity enhancement and promotional programme
- ◆ Enhancement of activities to address the impacts of climate change in the mountains
- ◆ Focus on community forest management, utilization and livelihood enhancement
- ◆ Watershed management
- ◆ Research and development on impacts of pollutants on human health
- ◆ Assessment of impacts of climate change and development of adaptation strategy for different geographical zones
- ◆ Research and development such as impacts of climate change, technology development and transfer, loss and gain from climate change by partnering with academia, research institutions and civil society engaged in research and development

Additional effort:

- ◆ Safe chemical storage and disposal
- ◆ Waste collection, recycling and composting schemes

- ◆ Laboratory accreditation for standard analysis and monitoring (Environment Protection Act provides provisions for accreditation)
- ◆ Identification of appropriate environment indicators related to key national priorities
- ◆ Implementation of MEAs in particular those related to species conservation, sustainable use and benefit-sharing, regulation of species and their products trade and climate change
- ◆ Implementation of Climate Change Policy 2011, including NAPA, climate-resilience programmes and promotion of the adoption of the low-carbon development path
- ◆ Measures to control overuse of pesticides

6b.2.4 Resource Needs and Gaps

6b.2.4.1 Resource Needs

A total of NRs 38.9 billion is required to fulfil interventions in the four intervention areas, as mentioned above. Reduced exposure to environmental health impacts requires NRs 991.2 million, improved livelihoods requires NRs 2.6 billion, reduced vulnerability for disaster management and climate change requires NRs 1.9 billion, and governance, institutions, capacity and systemic issues requires NRs 202.8 million. Improved livelihoods needs 45.8 percent of the total allocation, followed by 33.4 percent for reduced vulnerability, 17.3 percent for reduced exposure to environmental health impacts, and 3.5 percent for governance, institutions, capacity and systemic issues. There is also a need to address pollution control, equipment, laboratory, law enforcement and compliance, and additional facilities for pollution control.

Table 6.8 presents the yearly breakdown for each intervention area by capital and recurrent cost plus the cost of implementation of NAPA and PPCR programme.

For implementing NAPA and PPCR, the estimated requirement is NRs 33.1 billion for

Table 6.8: Resource needs for attaining MDG 7 (Environment and Climate Change)*(NRs in millions)*

Intervention	2011	2012	2013	2014	2015	Total
Reduced exposure to environmental health impacts	105.96	149.12	198.28	246.61	291.22	991.19
Improved livelihoods	270.34	388.34	512.21	645.63	813.43	2,629.94
Reduced in vulnerability	246.95	317.60	378.73	454.53	523.45	1,921.25
Governance, institutions, capacity and systemic issues	17.52	30.89	41.71	53.33	59.39	202.84
Capital cost	147.45	170.63	181.13	196.93	209.02	905.16
Recurrent cost	493.32	715.32	949.79	1,203.17	1,478.47	48,40.07
Total	640.77	885.95	1,130.92	1,400.10	1,687.49	5,745.22
NAPA and PPCR budget	6,624.00	6,624.00	6,624.00	6,624.00	6,624.00	33,120.00
Grand total	7,264.77	7,509.95	7,754.92	8,024.10	8,311.49	38,865.22

the period between 2011 and 2015. Total resource requirement for environment and climate change sector to 2015 thus comes to be NRs 38.9 billion.

Funding is not clear for biodiversity, sustainable use (technology development and use), benefit-sharing, etc. Needs focus on capacity-building of local governments on aspects of climate change, in particular, designing, integrating and implementing climate adaptation programmes.

6b.2.4.2 Resource Gaps

Lack of coherence between intervention activities, the duration of the project, and budget headings in line with the Medium Term Expenditure Framework limits an exact calculation of the resource gap. In addition, expenditure in the environmental sector is borne by the government in developing countries. Environment being a cross-cutting issue normally dealt with by government, sources of financing will come from the government. However, for climate change and adaptation issues, the government needs to seek other sources; for example, the Global Environmental Facility (GEF), Least Developed Countries (LDC) Fund, and other relevant environmental funds under operation or to be operated both within and outside the MEAs regime could be mobilized. The overall resource needs, availability and gaps are presented in Table 6.9. There will be a gap of NRs 31.1 billion for the five year to meet the targets.

Table 6.9: Resource gaps for attaining MDG 7*(NRs in millions)*

Particular	2011	2012	2013	2014	2015	Total
Need	7,265	7,510	7,755	8,024	8,311	38,865
Availability	1,084	1,234	1,483	1,795	2,171	7,767
Gap	6,181	6,276	6,272	6,229	6,140	31,098

6b.3 CONCLUSIONS

The target for reducing biodiversity loss is likely to be met. However, additional efforts are needed in implementation and for development of an information system for other targets and indicators. Programmes related to improved livelihoods through biodiversity conservation, emission control, and reduction of degradation and desertification contribute to both environmental sustainability and poverty alleviation.

Governance, institutions, capacity and systemic issues are the carriers for successful implementation of any project. They are the backbone for cross-cutting themes such as environment. A special thrust is required by the government, civil society and donors in this matter for meeting this MDG.

Funds are an urgent requirement for Nepal, along with clear programmes and adequate human resources. Sufficient external funds need to be mobilized and ensured for capacity-building and implementation of programmes to attain MDG 7.

6c WATER SUPPLY AND SANITATION

6c.1 REVIEW OF PROGRESS, POLICIES AND STRATEGIES

6c.1.1 Review of Progress

The water supply and sanitation sector has made significant progress within a relatively short period. In 1970, only six percent of the population in rural areas had access to protected water sources. During the Drinking Water Supply and Sanitation Decade (1981–1990), coverage increased to 34 percent. Water supply coverage increased to 80 percent in 2010 against the MDG target of 73 percent and sanitation coverage reached 43 percent against the target of 53 percent (NPC/UNCT 2010) (Table 6.10). However, coverage varies significantly between urban and rural areas. These figures do not take into account the functionality of water schemes, many of which are in dire need of rehabilitation, reconstruction or major repairs.

6c.1.2 Review of Policies and Strategies

The Government of Nepal has made a huge investment in the water and sanitation sector over the years; this is basically guided by a 20-year vision (1997–2017) and the National Water Plan 2005, which aims to achieve universal coverage for water and sanitation by 2017. There are other policy documents such as the Rural Water and Sanitation Policy and Strategy 2004, Urban Water Supply and Sanitation Policy 2010, National Water Plan 2002–2017, National Drinking Water Quality Standards 2006, and National Urban Policy 2007, which address issues such as expand-

ing water and sanitation coverage, setting water quality standards, and improving the sanitation situation of urban and rural areas.

The government has promoted a sustainable, cost-effective, demand-driven approach to water and sanitation services through establishment of the Rural Water Supply and Fund Development Board in 1996, which is now operating in its second phase. In addition, school- and community-led total sanitation programmes have been introduced and have had a significant impact on enhancing awareness and changing hygiene behaviour. The government has also prepared the legal basis for private-sector participation to improve management of water and sanitation services in the Kathmandu valley through the enactment of the Nepal Water Corporation Act 2007, Water Supply Management Board Act 2006 and the Water Supply Tariff Fixation Commission Act 2006. Nepal celebrated the International Year of Sanitation 2008, is annually celebrating Global Hand-Washing Day and actively participating in the South Asian Conference on Sanitation (SACOSAN). Nepal will be hosting the next (fifth) SACOSAN in Kathmandu in 2013. All these have contributed to increased coverage of water supply and sanitation.

6c.2 NEEDS ASSESSMENT

6c.2.1 Gap Analysis

Although the water supply coverage target has been met, many issues such as quantity, accessibility, reliability and quality (QARQ) of water supply and functionality of schemes remain questionable. This demands a detailed study on these issues and huge investment to meet the regular water needs of the people. Recent analysis of the functional status of existing facilities shows that that 42 percent of total projects are not functioning and need major repairs, rehabilitation or reconstruction (Table 6.11).

In case of sanitation, as mentioned above, 2010 coverage is 43 percent and the target for 2015 is 53 percent. As a result of the priority given to this subsector, the MDG target is likely to be achieved by 2015.

Table 6.10: Status against targets for MDG 7 (Water and Sanitation)

Indicator	2005	Status of 2010	2013 target**	2015 MDG target
Proportion of population using improved drinking water source	81*	80*	85	73
Urban (%)	93	94	-	-
Rural (%)	79	78	-	-
Proportion of population using an improved sanitation facility	39*	43.0*	60	53
Urban (%)	81	78	-	-
Rural (%)	30	37	-	-

Source: * NPC/UNCT 2010; ** NPC 2010.

6c.2.2 Challenges and Constraints

Challenges:

- ◆ Making all water supply schemes functional for ensuring regular and adequate supply of drinking water
- ◆ Prioritizing water use and proper utilization of resources
- ◆ Respecting the rights-based approach
- ◆ Making watershed management for water sources effective
- ◆ Recharging drawdown of the water table in the Kathmandu valley
- ◆ Ensuring water quality as per national water quality standards
- ◆ Mitigating groundwater arsenic contamination

Table 6.11: Functional status of drinking water projects

Status	No. of Schemes	Covered households	Coverage (%)
Normally functioning	24,399	1,183,291	56.8
Well-managed projects	7,464	373,295	17.9
Minor repairs required	16,935	809,996	38.9
Poorly functioning	12,780	874,037	41.9
Major repairs required	4,375	246,481	11.8
To be rehabilitated	4,967	437,800	21.0
To be reconstructed	3,438	189,756	9.1
Not functioning	467	27,008	1.3
Projects not possible for re-operation	467	27,008	1.3
Not identified	15	530	0.0
Others	15	530	0.0
Total	37,657	2,084,866	100.0

Source: NMIP/DWSS 2010.



- ◆ Reducing practice of open defecation
- ◆ Managing industrial wastage causing pollution of natural water bodies
- ◆ Developing environment-friendly sewerage systems, especially in urban areas
- ◆ Improving coordination between sectoral stakeholders and actors to reduce duplication of scarce resources
- ◆ Improving institutional coordination and integration of programmes
- ◆ Increasing coverage by constructing new water supply facilities, and providing adequate services

Constraints:

- ◆ Lack of defined roles and responsibilities among the main actors of the sector
- ◆ Low level of resource allocation to the sector, especially for urban sanitation
- ◆ Poor monitoring and evaluation at community and project levels
- ◆ Inadequate linking of the water and sanitation sector with livelihoods
- ◆ Weak maintenance and repair of water and sanitation facilities

6c.2.3 Strategic Interventions

Strategic interventions to overcome the challenges are as follows.

Continue:

- ◆ Implementation of water supply and sanitation facilities to provide access to all by 2017
- ◆ Updating and dissemination of information
- ◆ Water supply services through developing and maintaining existing point sources such as small springs (*kuwa*) and dug well, and tube-wells and borings, particularly in the Tarai and inner Tarai

Reinforce:

- ◆ Water-table recharging in Kathmandu valley
- ◆ Priority schemes that will provide immediate outputs
- ◆ Quality improvement in accordance with drinking water quality standards
- ◆ Gradual improvement of service standards as outlined in the TYP
- ◆ Promotion and extension of sanitation facilities in rural and urban areas
- ◆ Strengthening of institutional capability
- ◆ Rainwater-harvesting in the monsoon, especially where other conventional water sources are not available

- ◆ Repair, rehabilitation and reconstruction of non-functional schemes to bring them into operating condition
- ◆ Strengthening and expansion of water management board approach in more municipalities

Additional effort:

- ◆ Address policy, legal and institutional reform
- ◆ Expand water supply services through private connections, particularly in urban and semi-urban areas and also to some extent in rural areas, based on the need and willingness to pay
- ◆ Introduce public-private partnership, built-own-operate-transfer (BOOT) and community cost-sharing
- ◆ Prepare and implement National Sanitation Master Plan
- ◆ Establish solid waste management system in all municipalities, based on minimum standards set by Solid Waste Management and Resource Management Centre (SWMRMC)
- ◆ Establish Maintenance Revolving Fund and final disposal facilities in all municipalities
- ◆ Adopt public-private partnership model in waste collection and management
- ◆ Introduce climate change adaptive planning
- ◆ Discourage dumping of organic waste in landfill
- ◆ Encourage community-based water and sanitation system
- ◆ Address water-rights issues with priority

Intervention-wise water supply coverage and targets for urban and rural zones are presented in Table 6.12. These have been used as inputs for costing tools.

Sanitation targets will be achieved through several programmes and projects that focus on the development of the following facilities.

- ◆ Sewerage: Development of environment-friendly waste-water and storm-water sewerage systems, particularly in urban and semi-urban areas
- ◆ Septic tank/water-sealed household latrines: Awareness-building and development of septic tanks and household latrines in urban and semi-urban areas and in rural areas where affordability and willingness is high

- ◆ Pit toilets and ventilated improved pit latrines (VIPs): Development of pit toilets and VIPs in urban slums, poor peri-urban areas and rural areas
- ◆ Others: Development of ECOSAN and other technologies in any suitable part of the country
- ◆ Explore possibilities of decentralized Waste Water Treatment Plans

Intervention-wise sanitation coverage and targets for urban and rural areas are presented in Table 6.13, which have been used as inputs for the coverage input sheet of the costing tools.

Other interventions related to software development in the water supply and sanitation sector are as follows.

- ◆ Strengthening of institutional capacities and human resource development
- ◆ Approval of revised Solid Waste Management Act and provide 3Rs principle
- ◆ Enhancing of coordination mechanism among key stakeholders
- ◆ Updating of information system and dissemination of data
- ◆ Coordination of action for better water and sanitation results

Details of strategies interventions for environmental sustainability (Energy, Environment, Water and Sanitation is presented in Annex 6, Table 6c).

6c.2.4 Resource Needs and Gaps

6c.2.4.1 Resources Needs

The average per capita cost for each water supply intervention used in the costing exercise is presented in Table 6.14.

The average per capita cost for each sanitation intervention used in the costing exercise is presented in Table 6.15.

Development of hardware facilities has been calculated from the standard template and

Table 6.12: Intervention-wise coverage and targets for water supply
(% of population)

Water Supply	Urban		Rural	
	Present coverage	Targeted coverage	Present Coverage	Targeted coverage
Private connection	51	55	4	8
Public standpipes	12	10	35	41
Tube-wells and boreholes	24	22	30	36
Rainwater collection	n/a	1	1	3
Others (spring, dug wells, etc.)	6	5	8	2

Table 6.13: Intervention-wise coverage and targets for sanitation
(% of population)

Water Supply	Urban		Rural	
	Present coverage	Targeted coverage	Present Coverage	Targeted coverage
Sewerage	5 (assumed)	10	NA	NA
Septic tank/water-sealed household latrines	40	45	15	25
Pit toilets, VIPs, etc.	20	10	16	30
Others including ECOSAN	15	15	6	15

Table 6.14: Average unit cost for water supply interventions
(in NRs)

Area	Private connection	Public standpipe	Tube-wells and boreholes	Rainwater collection	Others
Rural	10,800	7,200	4,320	10,800	5,400
Urban	8,640	5,400	4,320	8,640	5,400

cost for software activities has been added to the cost calculated using the standard template. The summary of costing for year-wise resources for 2011–2015 is presented in Table 6.16.

6c.2.4.2 Resource Gaps

To calculate the funding gap, the budget projection for the coming three years was used. A linear projection was done. Resources available, resources needed and the resource gap are presented in Table 6.17.

The resource gap for the three years from 2011 to 2013 is NRs 4.0 billion, and for 2014 and 2015 is 8.0 billion. The total resource gap is NRs 12.0 billion. Additional funding will be required to attain national targets in this sector.

Table 6.15: Average unit cost for sanitation interventions
(in NRs)

Area	Sewerage	Septic tank/water-sealed household latrines	Pit toilets, VIPs	Others including ECOSAN
Rural	–	6,480	3,960	4,320
Urban	7,200	5,760	3,960	4,320

Table 6.16: Summary of costing in water supply and sanitation

(NRs in millions)

Particular	2011	2012	2013	2014	2015	Total
Urban	1,597.18	1,797.90	2,020.55	2,266.39	2,538.79	10,220.81
Rural	3,108.40	3,419.58	3,749.94	3,927.87	4,476.48	18,682.26
Total	4,705.58	5,217.48	5,770.49	6,194.26	7,015.27	28,903.07
Subtotal of supplementary activities not included in template*	4,086,164	6,017,445	7,948,726	9,880,007	9,880,007	37,812,349
Total including all interventions	8,791.74	11,234.92	13,719.21	16,074.27	16,895.28	66,715.42

Notes: * Other supplementary interventions that are not covered by costing tools include Melamchi Water Supply and Sanitation Project, Environmental Sanitation Programme, administrative costs, Integrated Development of Bagmati Civilization Project, Water Quality Improvement Project, etc. already in the pipeline of government funding.

Table 6.17: Resource gaps in water supply and sanitation

(NRs in millions)

Particular	2011	2012	2013	2014	2015	Total
Need	8,791.74	11,234.92	13,719.21	16,074.27	16,895.28	66,715.42
Availability	8,884.99	9,917.81	10,950.62	11,983.44	13,016.26	54,753.12
Gap	-93.25	1,317.12	2,768.59	4,090.83	3,879.02	11,962.31

6c.3 CONCLUSIONS

Policies, strategies and targets are fairly well defined. However, little attention has been given to policy compliance and monitoring, and resources for this are limited. The major task now is to implement policies and achieve targets according to plans; this can be done only if funds are allocated and

disbursed adequately and on time. Using coverage data, Nepal has already achieved its MDG target for water supply; however, non-functional schemes and low service quality, particularly in urban areas, have to be addressed during the remaining period to 2015. In recently years, sanitation has received greater priority at the national level; however, urban sanitation still needs due attention.



CHAPTER 7

ROAD INFRASTRUCTURE

7.1 REVIEW OF PROGRESS, POLICIES AND STRATEGIES

7.1.1 Review of Progress

Although road infrastructure is not a specific MDG, it is essential as it helps create an enabling environment to achieve other goals. Nepal has 19,758 km of road, including about 7,500 km of district roads and 2,500 km of urban roads. Of the total, 31 percent is blacktopped, 24 percent is gravelled, and 45 percent is earthen (DOR 2010).

The Approach Paper for the TYP indicates that more than 25,000 km of road track have been opened. According to the Rural Road Maintenance Plan 2009 and the Rural Transport Infrastructure Sector-wide Approach (RTI SWAp) Paper, Nepal has a network of about 14,293 km of maintainable local roads, divided between paved (three percent), gravelled (19 percent) and earthen (78 percent). About 56 percent is all-weather and 44 percent is dry-weather.

Rural areas of 71 districts have been connected to the strategic road network. Urban roads constitute about 2,500 km. Each kilometre of all types of public road serves about 890 people. Considering only the strategic road network, including district and urban roads, each kilometre serves 1,310 people. In

addition, there are about 12,000 km of trails and 4,100 trail bridges, providing accessibility for 12 million rural people.

The DOR's Priority Investment Plan II 2007–2016 (PIP II) indicates that about 39 percent of people in the Hills and Mountains are more than a four-hour walk from the nearest all-weather road and about 13 percent of people in the Tarai are more than a two-hour walk from an all-weather road. Analysis of this data and information available from the Department of Local Infrastructure Development and Agriculture Roads (DOLIDAR) suggest that 46 of 55 districts in the Hills and Mountains can be classified as having a serious access problem, with over 20 percent of the population outside the four-hour limit. More than 10 percent of the population in the Tarai is beyond the two-hour limit. In extreme cases in the High Himalayas and Mountains, it can take up to 13 days to walk to the nearest road.

7.1.2 Review of Policies and Strategies

The road sector plays a leading role in the economic and social development of Nepal. Its development and management needs to be continued with priority, including linking of the four remaining district headquarters to the network. Huge investment needs and

low traffic volumes along with the absence of holistic, coordinated and integrated development programmes have limited the full socio-economic benefits that could be achieved from the transportation sector. To provide mobility and promote trade, tourism and market access for agricultural and industrial production, the government has adopted policies for the extensive expansion of the road network. This includes the strategy for developing the 'Fast Track' road that connects Kathmandu to the Tarai.

The lack of access is a key dimension of poverty. Sometimes the transportation constraint is acknowledged explicitly. However, more often it is implicitly assumed in the need to create greater access to resources, employment opportunities, socio-economic development such as education and health facilities, and agricultural development and market access, leading to enhancement of livelihoods.

7.2 NEEDS ASSESSMENT

7.2.1 Gap Analysis

The MDGs have no direct targets for road infrastructure. However, it has been introduced as it plays a key supportive role in mobility/ accessibility to help realize MDG targets for other sectors. Goals and targets defined in PIP II, RTI SWAp and the Trail Bridge Sector-Wide Approach have been used in this assessment for the coming three- and five-year periods.

7.2.2 Challenges and Constraints

Challenges:

- ◆ Managing resources to develop expressways/fast tracks and strategic road networks—district to district, market centre to agricultural and agro-based industrial production centres
- ◆ Raising sustainable funds for managing road assets effectively, despite the establishment of the Roads Board



- ◆ Promoting public–private partnerships for road development and management
- ◆ Developing capacity of local bodies (DDCs and municipalities) to manage rural roads for better accessibility and urban roads for efficient operation of town/market centres
- ◆ Developing efficient information technology for monitoring and evaluation

Constraints:

- ◆ Poor absorption capacity of the Department of Roads (DOR) and DDCs
- ◆ Inadequate resources for implementation of road and bridge programmes and projects as envisaged in national and local level plans
- ◆ Weak project database or information system
- ◆ Weak inter-sectoral and interagency coordination and interaction
- ◆ Inadequate planned maintenance for roads and bridges
- ◆ Weak public and private-sector capacity
- ◆ Weak enabling environment for private-sector participation
- ◆ Lack of care for environmental and social safeguards in local road activities
- ◆ Ineffective management of already created road assets
- ◆ Road safety improvement considered as a component of projects
- ◆ Use of *ad hoc* and informal norms for equipment-based works for rural roads
- ◆ Low use of pro-poor, gender-friendly, labour-intensive construction approaches
- ◆ Inadequate devolution to local bodies, as envisaged by decentralization policy
- ◆ Weak capacity of local bodies in planning, implementation, monitoring and management of local infrastructure efficiently in line with decentralization policy
- ◆ Insufficient technical manpower and resources at central and local levels for effective implementation of local infrastructure with desired quality standards
- ◆ Inadequate accountability of road users' committees and serious political influence in the selection of road construction and upgrading
- ◆ Inadequate national consensus on national-level transport networks

7.2.3 Strategic Interventions

The details of strategic interventions designed to support achievement of the MDG targets through road connectivity are in Annex 7, Table 7a. Some major interventions are as follows.

- ◆ Construct, expand and standardize strategic road network from east–west and south–north including expressways for better mobility of people and flow of goods
- ◆ Develop and manage expansion and widening of existing roads, including bypasses/ring roads and elevated roads. This is required from a growth perspective but not from an MDG point of view
- ◆ Promote public–private partnerships, adopting PPP/BOT/BOOT model as appropriate for roads and other modes of transport development and management
- ◆ Upgrade all major district-level earthen roads to all-weather condition

7.2.4 Resource Needs and Gaps

7.2.4.1 Resource Needs

The unit costing exercise is based on past and ongoing programmes and projects with surface type, lane numbers, class of roads, and terrain conditions at constant 2010 prices. Reference is also made to costing in documents such as the PIP II, Sector-wide Road Programme and RTI SWAp.

The important goals and targets expected by the end of the MDG period for strategic road networks including bridges and trails are presented in Annex 7, Table 7b. During the period of 2011 to 2015, 565 km of strategic road network has to be improved/widened; 5,125 km has to be completed with surface dressing/sealing; 10,066 km has to be maintained routinely; 5,755.6 km has to be upgraded (directly blacktop); and 1,860 km has to be upgraded (gravelled). Similarly, 2,943 km of local road has to be constructed; 4,830 km has to be upgraded from earthen to gravel road; 16,611 km need to be maintained; and 2,450 trail bridges need to be constructed (Annex 7, Table 7c).

Unit cost for strategic road network and local road network is also estimated (Annex 7,

Tables 7d and 7e). Similarly, capital budget for both strategic road network and local road network are presented in Annex 7, Tables 7f and 7g.

Table 7.1 shows that NRs 264.3 billion is required to cover the costs for strategic and local road networks by 2015.

7.2.4.2 Resource Gaps

Budget and projections are in line with the MDG capital budget requirements as outlined in annual budgets and the TYP. Besides road programmes and projects, the portion of various grants (DDC, VDC and municipalities) estimated as available for road infrastructure is about NRs 4.5–5.5 billion per year; this has been accounted for in budget allocations. This is not actually spent on the 14,293 km of local road network, but is mostly spent on opening new tracks as demanded by local people. Therefore, approxi-

mately NRs 22–27.5 billion expenditure over the next five years will have no significant contribution in terms of building the local road network, if this trend continues.

New programme/projects for the local road network need to be implemented after the second or third year; according to targets and planned budget. Investment for building/widening/maintenance of certain strategic roads may be taken up by the private sector on build–operate–transfer/build–operate–own–transfer/lease management, which is not included here, as it is not firmly shaped up yet.

Table 7.2 presents the resource needs, availability and gaps for the five-year period.

The above table shows that there will be a resource gap of NRs 21.0 billion for the five-year period. The year-wise resource gap for strategic and local road networks is presented in Table 7.3.

Table 7.1: Resource needs for strategic and local road networks

(NRs in millions)

Road network	2011	2012	2013	2014	2015	Total
Strategic road network	27,202	31,863	33,316	36,052	35,963	164,395
Local road network	15,032	20,327	21,043	21,507	22,044	99,954
Total	42,234	52,190	54,359	57,558	58,007	264,349

Table 7.2: Resource gaps for strategic and local road networks

(NRs in millions)

Particular	2011	2012	2013	2014	2015	Total
Need	42,234	52,190	54,359	57,558	58,007	264,349
Availability	40,640	48,183	47,301	51,300	55,952	243,376
Gap	1,594	4,007	7,058	6,259	2,055	20,973

Table 7.3: Year-wise resource gaps for strategic and local road networks

(NRs in millions)

Year	Budget [SRN*]	Gap [SRN]	Budget [LRN*]	Gap [LRN]
2011	27,202.25	-1,707.10	15,032.13	113.24
2012	31,862.62	-1,180.23	20,327.40	-2,826.35
2013	33,315.60	646.82	21,043.48	-7,704.50
2014	36,051.58	34.44	21,506.72	-6,293.19
2015	35,963.04	2,379.87	22,044.17	-4,434.75
3-year cumulative	92,380.47	-2,240.59	56,403.01	-10,417.61
5-year cumulative	164,395.09	173.72	99,953.90	-21,145.55

Notes: * SRN = strategic road network; LRN = local road network.

7.3 CONCLUSIONS

The budgetary allocation and projections, based on annual budgets and the TYP, are in line with the MDG capital budget requirements for the strategic road network for the next three and five years. However, there is a deficit of NRs 10.5 billion for the next three years and NRs 21.2 billion for the next five years. Resource need projections made for next two years are considerably higher than projected allocations for those budget years; in the subsequent years, they are less likely to deviate from the annual budget. Furthermore, based on past experience, the absorption capacity for spending budget is likely to be low. It is, therefore, important to ensure an enabling environment and capacity enhancement for better implementation of projects and programmes as well as provisioning for the required level of budget. The road network is a major supporting sector for economic and social sector development in the country and in helping to achieve the MDGs by 2015.

CHAPTER 8

RESOURCE NEEDS FOR ATTAINING MDGS

8.1 RESOURCE NEEDS

The total resource needs are estimated, based on the investment model for MDGs needs assessment, and are concentrated on activities relevant to MDG targets and indicators. However, as road infrastructure has the potential to contribute towards achievements of the MDGs, it has been added to the global MDGs. The total funding requirement for MDG interventions for the five-year period from 2011 to 2015 is NRs 1,395.8

billion, and for the three-year period of the TYP (2011–2013) is estimated to be NRs 706.5 billion (Table 8.1).

Although road infrastructure is not mentioned in the MDGs, it cuts across all the MDGs and makes an important contribution to their achievement. Therefore, resource needs for the development of road infrastructure has been costed. Total resource needs for providing road connectivity is estimated at NRs 264.3 billion.

Table 8.1: Total estimated resource needs for implementing strategic interventions

(NRs in millions)

Goal	2011	2012	2013	TYP total	2014	2015	2 year total	2011-2015
Goal 1	57,237	65,318	73,897	196,452	85,652	97,855	183,507	379,959
Poverty	47,285	53,323	59,715	160,323	69,046	78,641	147,687	308,010
Agriculture	9,952	11,995	14,182	36,129	16,606	19,214	35,820	71,949
Goal 2 Education	35,330	46,025	63,184	144,539	97,371	102,592	199,963	344,501
Goal 3 Gender	3,495	4,483	5,491	13,469	6,525	7,593	14,118	27,587
Goals 4,5,6 Health	15,972	17,971	21,015	54,958	23,899	26,827	50,726	105,684
Goal 7	44,303	49,341	54,698	148,342	60,431	64,950	125,381	273,723
Environment	7,265	7,510	7,755	22,530	8,024	8,311	16,335	38,865
Energy	28,246	30,596	33,224	92,066	36,333	39,744	76,077	168,143
Water and sanitation	8,792	11,235	13,719	33,746	16,074	16,895	32,969	66,715
Road infrastructure	42,234	52,190	54,359	148,783	57,558	58,007	115,565	264,348
Total	198,571	235,328	272,644	706,543	331,436	357,824	689,260	1,395,802

The estimation for the TYP period is based on Medium Term Expenditure Framework and, for the later two years, it is projected, based on Medium Term Expenditure Framework, for meeting targets of the MDGs by 2015. Therefore, the resource requirement for the later two years is projected to be 48.6 percent of total needs. In this situation, availing the estimated fund and utilizing it for meeting the MDGs might remain a challenge.

8.2 RESOURCE AVAILABILITY

For the TYP period, it is estimated that total government expenditure will be NRs 1,020 billion at 2010 constant prices. The government generates 66.5 percent of total expenditure by revenue mobilization, 17.2 percent by foreign grant, 7.3 percent by foreign loan, and the remaining 9.1 percent by internal borrowings. During this period, revenue is expected to increase at an annual rate of 8.7 percent and the ratio of revenue to GDP, which is 16.1 percent in 2010, is projected to be 17.3 percent in 2013. Given this scenario, even if the government meets its resource target efficiently, it will not be sufficient to finance the strategic interventions to be adopted to achieve the MDGs by 2015.

As estimated, total resource availability from both internal and external sources for the five years is NRs 944.4 billion, which is 67.7 percent of total needs (Table 8.2).

8.3 RESOURCE GAPS

The total resource gap is NRs 451.4 billion, which is 32.3 percent of total needs. The projected resource needs and availability show that the resource gap will be NRs 40.7 billion in 2011, NRs 58.4 billion in 2012, NRs 87.5 billion in 2013, NRs 132.9 billion in 2014 and NRs 131.9 billion in 2015 (Table 8.3). It will be a great challenge for the government to manage the resources gap for meeting the MDG targets by 2015.

The above table shows that the MDG 7 has the largest resource gap to achieve targets by 2015, followed by MDG 2 and MDG 1, respectively.

A summary picture of total resource needs, availability and gaps estimated for the five years is presented in Table 8.4, split under in two phases: (i) between 2011 and 2013 as the TYP period, and (ii) between 2014 and 2015.

Table 8.4 shows that the ratio of resource needs and availability estimated for the first three years and the later two years is almost similar. It indicates that the later two years will face tremendous resource gaps. It is notable that the resource gap for the later two years seems to be about one third higher than in the earlier three years—the gap is about a half of total estimated availability. This demands huge additional investment

Table 8.2: Total resource availability for implementing strategic interventions

(NRs in millions)

Goal	2011	2012	2013	TYP total	2014	2015	2 year total	2011-2015
Goal 1	43,028	48,518	53,026	144,572	61,205	71,322	132,527	277,099
Poverty	38,420	42,527	45,237	126,184	51,078	58,156	109,234	235,418
Agriculture	4,608	5,991	7,789	18,388	10,127	13,166	23,293	41,681
Goal 2 Education	32,930	32,916	33,076	98,922	32,974	35,427	68,401	167,323
Goal 3 Gender	1,543	1,926	2,404	5,873	3,000	3,745	6,745	12,618
Goals 4,5,6 Health	12,329	14,199	16,808	43,336	19,329	22,228	41,557	84,893
Goal 7	27,387	31,177	32,500	91,064	30,754	37,240	67,994	159,058
Environment	1,084	1,234	1,483	3,801	1,795	2,171	3,966	7,767
Energy	17,418	20,025	20,066	57,509	21,036	22,053	43,089	100,598
Water and sanitation	8,885	9,918	10,951	29,754	7,923	13,016	20,939	50,693
Road infrastructure	40,640	48,183	47,301	136,124	51,300	55,952	107,252	243,376
Total	157,857	176,919	185,115	519,891	198,562	225,914	424,476	944,367

Table 8.3: Total resource gaps for implementing strategic interventions
(NRs in millions)

Goal	2011	2012	2013	TYP total	2014	2015	2 year total	2011-2015
Goal 1	14,209	16,800	20,871	51,880	24,447	26,533	50,980	102,860
Poverty	8,865	10,796	14,478	34,139	17,968	20,485	38,453	72,592
Agriculture	5,344	6,004	6,393	17,741	6,479	6,048	12,527	30,268
Goal 2 Education	2,400	13,109	30,108	45,617	64,397	67,165	131,562	177,179
Goal 3 Gender	1,952	2,557	3,087	7,596	3,525	3,848	7,373	14,969
Goals 4,5,6 Health	3,643	3,772	4,207	11,622	4,570	4,599	9,169	20,791
Goal 7	16,916	18,164	22,198	57,278	29,677	27,710	57,387	114,665
Environment	6,181	6,276	6,272	18,729	6,229	6,140	12,369	31,098
Energy	10,828	10,571	13,158	34,557	15,297	17,691	32,988	67,545
Water and sanitation	-93	1,317	2,768	3,992	8,151	3,879	12,030	16,022
Road infrastructure	1,594	4,007	7,058	12,659	6,258	2,055	8,313	20,972
Total	40,714	58,409	87,529	186,652	132,874	131,910	264,784	451,436

from all internal and external sources to meet the targets of the MDGs by 2015, especially in 2014 and 2015.

Interestingly, the estimation for the five years from 2011 to 2015 exceeds about half of the estimation for the 11 years from 2005 to 2015 (Table 8.5).

Unlike the other goals, the estimation for the health sector, despite having three MDGs, has come down.

8.4 CONCLUSIONS

Achieving the MDGs by 2015 by implementation of the strategic interventions will require both explicit national policies and specific expenditure, primarily channelled through government budgets, coupled with adequate and sustained growth of per capita income and employment. The primary responsibility for organizing national efforts to realize the MDGs resides with the government, through adoption of appropriate tax policies, reduction of expenditure that does not affect social and economic development, and increased government borrowing in a sustainable way at home and abroad. Success

Table 8.4: Total resource needs, availability and gaps at the end of TYP (2013) and 2015
(NRs in millions)

Particular	TYP		2011-2015
	2011-2013	2014-2015	
Need	706,543	689,270	1,395,802
Availability	519,891	424,476	944,367
Gap	186,652	264,784	451,436

Table 8.5: Resource needs estimated in 2005 and 2011
(NRs in millions)

MDG	11-year total (2005-2015)*	5-year total (2011-2015)
Goal 1	227,185	379,960
Goal 2	289,655	344,501
Goal 3	17,964	27,588
Goals 4,5,6	146,240	105,684
Goal 7	105,530	273,723
Rural infrastructure	98,370	264,348
Total	884,944	1,395,802

Source: * NPC/UNDP 2006.

Note: The figures related to 2005 – 2015 are at constant price at 2005, whereas the figures related to 2011–2015 are constant price at 2010.

also requires comprehensive and coherent national strategies that accelerate development and reduce poverty, thus leading to integrated public expenditure packages for those parts of the strategies that the government can undertake directly. Details of resource needs, availability and gaps for 2011 - 2015 is given in table 8.6.

Table 8.6: Resource needs, availability and gaps by MDG and thematic area

(NRs in millions)

Goal	2011			2012			2013			2014			2015			Total resource needs for 5 yrs
	Need	Availability	Gap	Need	Availability	Gap	Need	Availability	Gap	Need	Availability	Gap	Need	Availability	Gap	
Goal 1	57,237	43,028	14,209	65,318	48,518	16,800	73,897	53,026	20,871	85,652	61,205	24,447	97,855	71,322	26,533	379,959
Poverty	47,285	38,420	8,865	53,323	42,527	10,796	59,715	45,237	14,478	69,046	51,078	17,968	78,641	58,156	20,485	308,010
Agriculture	9,952	4,608	5,344	11,995	5,991	6,004	14,182	7,789	6,393	16,606	10,127	6,479	19,214	13,166	6,048	71,949
Goal 2 Education	35,330	32,930	2,400	46,025	32,916	13,109	63,184	33,076	30,108	97,371	32,974	64,397	102,592	35,427	67,165	344,501
Goal 3 Gender	3,495	1,543	1,952	4,483	1,926	2,557	5,491	2,404	3,087	6,525	3,000	3,525	7,593	3,745	3,848	27,587
Goals 4,5,6 Health	15,972	12,329	3,643	17,971	14,199	3,772	21,015	16,808	4,207	23,899	19,329	4,570	26,827	22,228	4,599	105,684
Goal 7	44,303	27,387	16,916	49,341	31,177	18,164	54,698	32,500	22,198	60,431	30,754	29,677	64,9500	37,240	27,710	273,723
Environment	7,265	1,084	6,181	7,510	1,234	6,276	7,755	1,483	6,272	8,024	1,795	6,229	8,311	2,171	6,140	38,865
Energy	28,246	17,418	10,828	30,596	20,025	10,571	33,224	20,066	13,158	36,333	21,036	15,297	39,744	22,053	17,691	168,143
Water and sanitation	8,792	8,885	-93	11,235	9,918	1,317	13,719	10,951	2,768	16,074	7,923	8,151	16,895	13,016	3,879	66,715
Road Infrastructure	42,234	40,640	1,594	52,190	48,183	4,007	54,359	47,301	7,058	57,558	51,300	6,258	58,007	55,952	2,055	264,348
Total	198,571	157,857	40,714	235,328	176,919	58,409	272,644	185,115	87,529	331,436	198,562	132,874	357,824	225,914	131,910	1,395,802

CHAPTER 9

CONCLUSIONS AND RECOMMENDATIONS

9.1 CONCLUSIONS

Despite political instability and low economic growth, the current status of progress indicates that Nepal will successfully achieve many targets of the MDGs. However, there are unmet and growing needs of the people related to employment, better health services, clean energy, sustainable resources and better road connectivity.

The MDG target of poverty reduction seems achievable, if the recommended strategic interventions are effectively implemented. However, the targets for reducing unemployment and hunger seem to be unachievable without strategic policy and programme interventions with accelerated investment. Progress in education sector shows that primary level NER is likely to be achieved with the current level of efforts, but the targets for survival rate and literacy rate seem hard to achieve by 2015. The status of women with regards to their access to knowledge, economic resources, political power and personal autonomy in decision-making has been found to be poor. Comparison of gender disparity in different groups and regions has been difficult due to scarce and scattered sex-disaggregated data on socio-economic

and political aspects of caste, ethnicity and region. Nepal is making good progress in the health sector; but, when compared to the MDG target, the current rate of progress seems inadequate. Achieving health-related MDGs will largely depend upon the extent of integration of health programmes with other socio-economic development programmes and strengthening of the health system, specifically in terms of human resources, financing and organized service delivery at different levels.

The target for reducing biodiversity loss is likely to be met. However, additional efforts are needed in implementation and for development of an information system for other targets and indicators. Programmes related to improved livelihoods through biodiversity conservation, emission control, and reduction of degradation and desertification contribute to both environmental sustainability and poverty alleviation.

Nepal has already achieved its target on drinking water, and is still moving in a positive direction. However, water quality and sustainable water supply are still matters of concern. Furthermore, it seems very hard to achieve the target for sanitation.

Amidst load-shedding and the dominant use of traditional sources of energy, the clean energy needs of the Nepali people are yet to be met. Current efforts to develop hydropower and renewable energy technologies need to be accelerated to keep pace with the ever-growing demand for energy.

Total resource needs for MDG interventions for the five-year period from 2011 to 2015 are NRs 1,395.8 billion and the total resource gap is NRs 451.4 billion, which is 32.34 percent of total needs. To meet these resource needs, the Government of Nepal has to make greater efforts to mobilize available resources optimally and double its efforts to acquire international financial and technical support through better performance and economic diplomacy.

9.2 RECOMMENDATIONS

As the targets for some MDG indicators will be difficult to fulfil at present trends, vigorous additional efforts are required. The present implementation practice gives greater importance to central level authorities. Since local governments are close to the people, their development role needs to be expanded. MDG resource needs should not be compromised by the needs of other sectors of the economy.

There is an emerging need for focusing interventions on the resource-poor, vulnerable and unreached. In this context, smallholder farmers with less than 0.5 ha should be targeted for agricultural interventions, and should be supported with more emphasis on community and national support packages. Interventions related to sustainable technology to fit smallholders, dietary diversification and climate change adaptation will need to be addressed through the national research and extension system.

To achieve the MDG target for education, every new intervention package has to be implemented effectively and scaling up of

ongoing efforts should receive high priority. Special emphasis has to be made to ensure access to education for unreached children together with enhanced quality of education for increasing survival rates. The existing system of monitoring and supervision of schools should be made functional, especially in remote rural areas of the Hills and Tarai.

The targets for MDG 3 need to be construed beyond the notion of gender parity in primary, secondary and tertiary education, towards the ending of gender-based violence and the increasing of women's economic and political empowerment.

The contribution of the health sector to improving socio-economic development and poverty reduction must be redefined and emphasized to increase the health budget. The geographical coverage of basic health facilities should be expanded with adequate health equipment and human resources.

In the water and sanitation sector, effective water supply coverage should be increased by making non-functional schemes functional with proper maintenance and management. In addition, water supply pipe connections, and the quantity and quality of water in water taps need to be ensured. As sanitation coverage is weak, it should be prioritized in the national and local-level planning.

In the area of environment and climate change, initiatives started in the TYP for developing climate-resilient development planning should be taken forward through a systematic approach and brought under a multi-stakeholder action domain. Climate change affects poor people disproportionately and both adaptation and mitigation measures to be taken in this regard will contribute to attaining the MDGs. In order to improve biodiversity, efforts are necessary to maintain and increase the quality of forests and transform shrub lands into forests.

For ensuring access to basic infrastructure services in a cost-effective manner to all

needy people, the cluster approach in settlement development is needed. The government will have to undertake such policies even in rural areas, along with small urban development programmes.

It is important to ensure an enabling environment and capacity enhancement for better implementation of projects and programmes as well as provisioning for the required level of budget.

The NPC should integrate the monitoring process and progress of MDG-related programmes into its system. In addition, local-level monitoring and maintenance mechanisms should be very strong so that the basic service system remains functional.

The global recession and increasing need to fund climate change initiatives have made

conventional international support more competitive, and national governments, including Nepal, will have to demonstrate higher development aid effectiveness to attract global funds.

The government needs to adopt forward-looking macroeconomic policies that promote sustainable development and lead to sustained, employment-centric, inclusive and equitable, broad-based economic growth; promote national food security strategies that strengthen support for small-holder farmers and contribute to poverty eradication; support participatory, community-led strategies in a decentralized fashion and align them with national development priorities and strategies; promote universal access to public and social services and provide social protection floors; and improve capacity to deliver quality services equitably.



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MDG GOAL, TARGETS AND INDICATORS

Table 1a: List of Goals, Targets and Indicators

Goals and targets	Indicators for monitoring progress	
Goal 1: Eradicate extreme poverty and hunger		
Target 1A: Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day	1.1	Proportion of population below \$1 (PPP) per day
	1.2	Poverty gap ratio
	1.3	Share of poorest quintile in national consumption
Target 1B: Achieve full and productive employment and decent work for all, including women and young people	1.4	Growth rate of GDP per person employed
	1.5	Employment-to-population ratio
	1.6	Proportion of employed people living below \$1 (PPP) per day
	1.7	Proportion of own-account and contributing family workers in total employment
Target 1C: Halve, between 1990 and 2015, the proportion of people who suffer from hunger	1.8	Prevalence of underweight children under five years of age
	1.9	Proportion of population below minimum level of dietary energy consumption
Goal 2: Achieve universal primary education		
Target 2A: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling	2.1	Net enrolment ratio in primary education
	2.2	Proportion of pupils starting Grade 1 who reach the last grade of primary school
	2.3	Literacy rates of 15–24-year-olds, women and men
Goal 3: Promote gender equality and empower women		
Target 3A: Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015	3.1	Ratios of girls to boys in primary, secondary and tertiary education
	3.2	Share of women in wage employment in the non-agricultural sector
	3.3	Proportion of seats held by women in national parliament
Goal 4: Reduce child mortality		
Target 4A: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate	4.1	Under-five mortality rate
	4.2	Infant mortality rate
	4.3	Proportion of 1-year-old children immunized against measles
Goal 5: Improve maternal health		
Target 5A: Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio	5.1	Maternal mortality ratio
	5.2	Proportion of births attended by skilled health personnel
Target 5B: Achieve, by 2015, universal access to reproductive health	5.3	Contraceptive prevalence rate
	5.4	Adolescent birth rate
	5.5	Antenatal care coverage (at least one visit, and at least four visits)
	5.6	Unmet need for family planning

Goals and targets	Indicators for monitoring progress	
Goal 6: Combat HIV/AIDS, malaria and other diseases		
Target 6A: Have halted by 2015 and begun to reverse the spread of HIV/AIDS	6.1	HIV prevalence among population aged 15–24 years
	6.2	Condom use at last high-risk sex
	6.3	Proportion of population aged 15–24 years with comprehensive correct knowledge of HIV/AIDS
	6.4	Ratio of school attendance of orphans to school attendance of non-orphans aged 10–14 years
Target 6B: Achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it	6.5	Proportion of population with advanced HIV infection with access to antiretroviral drugs
Target 6C: Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases	6.6	Incidence and death rates associated with malaria
	6.7	Proportion of children under five years of age sleeping under insecticide-treated bed-nets
	6.8	Proportion of children under five years of age with fever who are treated with appropriate anti-malarial drugs
	6.9	Incidence, prevalence and death rates associated with tuberculosis
	6.10	Proportion of tuberculosis cases detected and cured under directly observed treatment short (DOTS) course
Goal 7: Ensure environmental sustainability		
Target 7A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources	7.1	Proportion of land area covered by forest
	7.2	CO ₂ emissions (total, per capita and per \$1 GDP (PPP))
	7.3	Consumption of ozone-depleting substances
	7.4	Proportion of fish stocks within safe biological limits
	7.5	Proportion of total water resources used
Target 7B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss	7.6	Proportion of terrestrial and marine areas protected
	7.7	Proportion of species threatened with extinction
Target 7C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation	7.8	Proportion of population using an improved drinking water source
	7.9	Proportion of population using an improved sanitation facility

Table 1b: Nepal's Progress Towards the MDGs: Status at a Glance

GOALS	WILL DEVELOPMENT GOAL BE ACHIEVED					STATUS OF SUPPORTIVE ENVIRONMENT			
	Achieved	Likely	Potentially Likely	Unlikely	Lack of data	Strong	Fair	Weak but improving	Weak
Goal 1: Eradicate Extreme Poverty and Hunger									
1A: Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day		✓					✓		
1B: Achieve full and productive employment and decent work for all, including women and young people				✓				✓	
1C: Halve, between 1990 and 2015, the proportion of people who suffer from hunger			✓				✓		
Goal 2: Achieve Universal Primary Education									
2A: Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015 Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling			✓			✓			
Goal 3: Promote Gender Equality and Empowerment of Women									
3A: Eliminate gender disparity in primary and secondary education by 2005 and in all levels of education no later than 2015			✓				✓		
Goal 4: Reduce Child Mortality									
4A: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate		✓				✓			
Goal 5: Improve Maternal Health									
Target 5A: Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio		✓				✓			
Target 5B: Achieve, by 2015, universal access to reproductive health				✓			✓		
Goal 6: Combat HIV/AIDS, Malaria and Other diseases									
Target 6A: Have halted by 2015 and begun to reverse the spread of HIV/AIDS		✓				✓			
Target 6B: Achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it			✓				✓		
Target 6C: Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases		✓				✓			
Goal 7: Ensure Environmental Sustainability									
Target 7A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources			✓				✓		
Target 7B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss					✓				✓
Target 7C1: Halve, by 2015, the proportion of people without sustainable access to safe drinking water		✓					✓		
Target 7C2: Halve, by 2015, the proportion of people without sustainable access to basic sanitation.				✓				✓	
7D. Improve lives of slum dwellers					✓				✓



POVERTY, HUNGER AND AGRICULTURE

MDG 1: ERADICATE EXTREME POVERTY AND HUNGER

Table 2a: Employment–income Elasticity for Various Sectors of the Economy

Industry	Income growth (2000–2009)	Employment growth (1998–2008)	Elasticity
Agriculture, forestry and fishing	3.04	1.91	0.63
Mining and quarrying	4.23	12.93	3.06
Manufacturing	0.50	3.41	6.83
Electricity gas and water	6.05	15.41	2.55
Construction	3.72	0.65	0.17
Wholesale and retail trade	0.77	5.43	7.09
Hotels and restaurant	1.75	5.62	3.21
Transport, storage and communications	6.47	3.90	0.60
Financial intermediation	9.00	5.35	0.59
Real estate, renting and business	3.63	8.30	2.29
Public administration and defence	7.83	4.53	0.58
Education	9.33	5.68	0.61
Health and social work	8.59	8.52	0.99
Other community, social and personal service	6.02	5.68	0.94
GDP at producers' prices	3.77	2.21	0.59

Source: MOF 2009.

Table 2b: Strategy and Policy Interventions for MDG 1

Strategy	Working policy
Income and poverty	
1. Abolish social oppression and discrimination against oppressed, downtrodden, neglected and marginalized communities through economic and social development of this class	<ul style="list-style-type: none"> ◆ Identify oppressed, downtrodden, neglected, and marginalized communities and provide them with income-generating activities through micro-credit programmes. ◆ Special measures to be taken to increase access of these groups to programmes such as education, health, sanitation, and micro-credit for income-generating activities, etc. ◆ Programmes to ensure the rights and development of downtrodden communities to be formulated and implemented under sectoral ministries and local bodies. ◆ Priority to be given to Dalit (oppressed groups) representation in all types of users' committees formed for development works at the local level such as road construction committees, school management committees, local bodies, NGOs and social organizations. ◆ Level of awareness to be increased by conducting orientation programmes.

Strategy	Working policy
2. Empower downtrodden communities, recognizing their possible contribution to the national level	<ul style="list-style-type: none"> ◆ Empowerment of downtrodden communities to be made through education and technical training (skills enhancement) with the provision of scholarships. ◆ The qualities and skills of downtrodden communities to be given recognition and also encouraged and made competitive. ◆ Dalit and oppressed groups to be empowered economically and socially by involving them in the development process by implementing targeted programme.
3. Modernize traditional occupations of downtrodden and oppressed communities and make goods produced by them competitive. Undertake institutional arrangements for marketing of such products.	<ul style="list-style-type: none"> ◆ Marketing arrangement to be made to dispose of products by developing an appropriate channel of distribution. ◆ The occupational skills and jobs of Dalit and neglected communities to be conserved and modernized. Their traditional occupation to be developed as a dignified source of employment. Access to institutional training and credit to be increased through programme such as savings and credit operations.
4. Promote programmes for social dignity for upliftment of Dalit and oppressed social groups, while appropriating national productive resources and opportunities.	<ul style="list-style-type: none"> ◆ Priority to be given for activities that directly relate to the poor by preparing pro-poor budget.
Children	
1. Establish children's rights	<ul style="list-style-type: none"> ◆ All types of exploitation against children to be ended to ensure the rights of children to an education and life without fear. ◆ Awareness programmes to be organized with involvement of NGOs, community-based organizations and civil society. ◆ Children's participation to be encouraged in the operation of children-related programmes.
Women	
1. Make women's participation effective in the formulation, implementation, coordination, monitoring and evaluation of related sectoral policies and women-targeted programmes.	<ul style="list-style-type: none"> ◆ Bring gender issues into the mainstream of national development and make them a common responsibility. ◆ Make efforts to increase participation of women in all social, economic and political sectors.
2. Increase participation of women in projects for poverty alleviation and income generation.	<ul style="list-style-type: none"> ◆ Increase access to employment, occupational technology and resource allocation. ◆ Provide skills-oriented training and self-employment to displaced women and provide access to targeted programmes and micro-credit. ◆ Mainstream women's empowerment programmes incorporating gender issues and women equity by involving local institutions, NGOs and civil society. ◆ Undertake socio-economic development of geographically, socially and economically backward women, including those who are physically challenged or victimized by the insurgency.
3. Increase awareness of gender equity at all groups and levels.	<ul style="list-style-type: none"> ◆ Mobilize NGOs and women-related agencies against gender discriminative attitudes. ◆ Increase awareness, in cooperation with NGOs.
Disabled	
1. Increase access to all types of opportunities including socio-economic security.	<ul style="list-style-type: none"> ◆ Make arrangements to provide basic health care services, education and community-based rehabilitation at all levels.
2. Develop networks for the disabled.	<ul style="list-style-type: none"> ◆ Prepare programmes of economic activities for the disabled. ◆ Develop networks of the disabled at functional levels.
3. Utilize capability, single mindedness, skills and knowledge in different sectors for nation-building.	<ul style="list-style-type: none"> ◆ Develop mental and physical aspects of disabled, arrange programmes of skills development training and provide them with special opportunities for employment. ◆ Develop positive attitudes towards the disabled, raise public awareness on protection and arrange for distribution of materials to the disabled. ◆ Increase participation of the disabled in all programmes regarding the disabled.

Table 2c: Strategic Interventions (Poverty and Employment Sector)

<p>Intervention for increasing income</p> <ul style="list-style-type: none"> ◆ Targeted income-generating activities ◆ Empowerment programmes through vocational training and skills enhancement ◆ Micro-credit programmes ◆ Rural-urban linkage programmes ◆ Crop shifting towards producing high value crop ◆ Promote indigenous skills and products and develop markets for such products. ◆ Training for productivity improvement <p>Intervention for employment generation</p> <ul style="list-style-type: none"> ◆ Targeted employment programmes ◆ Development and construction of infrastructure ◆ Regularization and strengthening of labour market ◆ Skills-enhancement training ◆ Micro-enterprises development programmes for self-employment ◆ Employment guarantee schemes ◆ Entrepreneurship development training 	<ul style="list-style-type: none"> ◆ Encouragement for labour-intensive investment ◆ Re-orientation of local market ◆ Regularization of informal sector activities ◆ Encouragement for private sector involvement ◆ Employment oriented large scale project ◆ Foreign employment/remittance-demand <p>Intervention on social protection</p> <ul style="list-style-type: none"> ◆ Restrengthening programmes for senior citizens, widow, single women, persons with disabilities, youth and children ◆ Employment guarantee programmes ◆ Housing programme for selected marginalized communities ◆ Productive use of remittance ◆ Food security and quality ◆ Cooperative programme ◆ Increased participation of targeted groups in development committees ◆ Effective monitoring and evaluation
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Table 2d: Strategic Interventions (Agriculture sector)

<p>The challenges and constraints outlined above imply that there is the need for focused intervention packages with targeted coverage. Taking this into consideration as well as the recommendations of the MDG Progress Report 2010 and existing policies, interventions have been designed with the following programmatic thrusts.</p> <ul style="list-style-type: none"> ◆ Augmentation of crop and livestock productivity, irrigation facilities ◆ Augmentation of agricultural productivity, food safety and nutrition ◆ Promotion of low-cost sustainable technology ◆ Breeding and seed security ◆ Development and dissemination of low water-intensity and disease/pest-resistant varieties ◆ Enlargement of the range of staple foods, based on regional potentials ◆ Linkages to markets, trade and finance ◆ Infrastructure required for availability, access, utilization and stability of food security at local levels ◆ Creation of off-farm employment opportunities to augment farm income ◆ Improved food safety and nutrition ◆ Restructuring existing programs for increasing productivity ◆ Develop scientific land reform plan and program <p>Following the framework recommended by the UN Millennium Project, interventions have been organized at three levels: farm, community and national. It should be noted that small-scale irrigation cuts across farm and community levels. This arrangement is expected to allow an intensification of programme focus on marginalized groups and areas.</p> <p>(i) Farm-level interventions</p> <p>Interventions in this category are intended to augment crop and livestock productivity, with packages mainly consisting of direct inputs in the form of goods and services most appropriate for productivity enhancement of land farmed by resource-poor smallholders. Suggested packages will pertain to the following.</p> <ul style="list-style-type: none"> ◆ Soil fertility improvement and sustainability through improved seeds/seedlings, chemical and organic fertilizers, and good agricultural practices ◆ Protection of plants/crops through appropriate pesticides and practices ◆ Efficiency of farm operations (pre- and post-harvest handling) through equipment and farm storage ◆ Greater income opportunities through increased and improved livestock holdings 	<ul style="list-style-type: none"> ◆ Genetic improvement of livestock through artificial insemination and improved breeding ◆ Improved animal health through quality veterinary services and appropriate feeding practices ◆ Enhanced livestock-raising practices through improved sheds/shelters and equipment ◆ Improved fisheries and beekeeping practices through improved fish ponds and beehives ◆ Chemical and organic fertilizers and good agricultural practices ◆ Protection of productive land from non-agricultural uses <p>(ii) Community-based interventions</p> <p>Community-based interventions are aimed at providing appropriate services and infrastructure at scale in a cost-effective and inclusive manner. Packages at this level are intended to increase income opportunities through linkages to markets, trade and finance, and through the creation off-farm activities linked to the wider value chain. Community mobilization and creation of social capital through training, awareness-raising, demonstration and infrastructural support are core ingredients of this package. Seven types of interventions have been identified as follows.</p> <ul style="list-style-type: none"> ◆ <i>Community storage</i>: includes community seed banks and produce storage facilities such as cellar storages. ◆ <i>Minor connectivity structures</i>: to enable farmers to overcome critical farm to market connectivity constrictions of a local and minor scale, such as culverts and similar minor structures. Other structures such as ropeways and small bridges are also important, but are included in the costing of the roads sector ◆ <i>Community mobilization</i>: organizing farmers groups into community groups with community centres as a platform for markets, information- and knowledge-sharing, and community interaction. Appropriate infrastructures such as sheds, communication infrastructure, etc. will be provisioned. Moreover, these centres are also intended to be local hubs for farming youth, where people can access and utilize information and communications technology as well as demand-driven enterprise management and skills training. This is expected to enable them to engage in extended off-farm activities, complementing their farm activities. ◆ <i>Microfinance</i>: ensuring access by poor rural households to microcredit for the financing of farm and off-farm activities.
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<ul style="list-style-type: none"> ◆ <i>Micro-insurance</i>: for piloting and scaling up crop and livestock insurance schemes. ◆ <i>Agro-processing</i>: the provision of appropriate machines, equipment and operational skills required for small rural agro-processing activities for farmer/ community groups such as dryers, chilling vats, pulpers, etc., as appropriate. This intervention is intended to both improve efficiency for home consumption and add value for sales to earn income. ◆ <i>Adaptive research/farmer-field schools</i>: to demonstrate research outcomes and involve farmers in participatory action research in farmers fields for participatory learning as well for utilizing farmers' knowledge. Also included in this category is action learning on climate change adaptation and effects mitigation as well as non-conventional conservation technologies such as zero tillage and sustainable rice intensification. <p>(iii) Small-scale irrigation and water management Resource-poor smallholders are deprived of access to irrigation and depend mostly on rainwater. This intervention category—the relevance of which cuts across farm and community levels—is crucial for maximizing productivity from land resources at disposal locally. The following two types of intervention have been identified.</p> <ol style="list-style-type: none"> 1. <i>Conventional small irrigation</i>: this includes small and cooperative farming-based irrigation support, mostly for surface irrigation being implemented under the Ministry of Agriculture and Cooperatives (MOAC). 	<ol style="list-style-type: none"> 2. <i>Non-conventional small-scale irrigation</i>: includes new technology based (NTB) small irrigation support such as treadle-pumps, sprinklers, plastic ponds for rainwater harvesting, etc. <p>(iv) National interventions Interventions at the national level are aimed at providing functional research and extension support, and include the following.</p> <ul style="list-style-type: none"> ◆ National extension interventions: This category of intervention is necessary to build capacity and ensure, among other things, the sustainability of progress achieved by the other interventions and the promotion of low-cost sustainable technology. ◆ National research interventions: National research investment will be substantially scaled up to ensure that sufficient allocation is earmarked for the generation of technology on low-water intensity and disease- and pest-resistant varieties especially for marginal lands; technology on climate change adaptation and mitigation effects; non-conventional conservation technologies; food safety and nutrition; and diversification of food production and consumption to suit local potentials. ◆ Special national campaigns: Special national campaigns are included with the intention of complementing interventions with awareness and sensitization on subjects such as climate change and appropriate food practices.
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Table 2e: Estimated Number of Beneficiaries

Particular	2011	2012	2013	2014	2015	Total
Coverage for livelihood and income-generating programmes (households)	12,000	12,000	12,000	12,000	12,000	60,000
Skills development, entrepreneurship and foreign employment (no.)	467,691	585,699	698,766	877,226	1,045,515	3,674,897
Six-Month Employment Guarantee Scheme for unemployment (growth 3.58 %) (no.)	281,194	291,261	301,688	312,489	323,676	323,676
Raute population (proportion 0.0029)	822	840	859	878	898	4,297
Karnali Zone people aged 60+ (growth 4.81 %)	5,645	5,424	5,212	5,008	4,812	26,101
Dalit women aged 60+ (13.02 % of respective population)	132,217	136,606	141,141	145,827	150,669	706,460
Karnali Zone, 2-child/household (household size 5.44)	43,144	41,457	39,836	38,279	36,782	199,498
Dalit, 2-child/household (12.9 % of respective population)	1,343,765	1,373,866	1,404,640	1,436,104	1,468,273	7,026,649
Senior citizen aged 70+ (growth 3.81 %)	767,763	797,015	827,381	858,905	891,629	4,142,693
Widowed, divorced and separated women aged 60+ (growth 22.14 %)	302,967	370,043	451,971	552,037	674,259	2,351,277
Disabled aged 10+ (growth 10.32 %)	27,631	24,779	22,222	19,929	17,872	112,433
Karnali Zone, 100 days emp household (household size 5.44)	21,572	20,728	19,918	19,139	18,391	99,749
Incentives to pregnant women and medical staff for delivery of babies in health institutions in Mountains (growth 10.53 %)	9,015	9,964	11,013	12,173	13,455	55,620
Incentives to pregnant women and medical staff for delivery of babies in health institutions in Hills (growth 14.53 %)	120,507	138,378	158,899	182,464	209,523	809,771
Incentives to pregnant women and medical staff for delivery of babies in health institutions in Tarai (growth 6.72 %)	104,290	111,299	118,778	126,760	135,278	596,406
Housing for poor family (no.)	1,000	1,000	1,000	1,000	1,000	5,000
Total	2,880,338	3,031,400	3,202,872	3,398,503	3,622,841	16,135,954

Source: Computed from baseline situation (2009/10) of respective various sectors.

Table 2f: Resource Requirement

(in Percentages)

Particular	2011	2012	2013	2014	2015	TYP total	5-year total
Employment and income generation	24.1	24.4	23.1	23.5	22.0	23.8	23.3
Social protection	20.8	19.7	18.9	17.5	16.5	19.7	18.4
Delivery in health institutions	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Food-related security	23.1	20.6	18.6	16.2	14.4	20.6	18.0
Housing for poor	0.8	0.6	0.4	0.3	0.3	0.6	0.4
Pension, allowance and gratuity	30.6	34.2	38.5	42.0	46.4	34.8	39.4

Table 2g: Transport Subsidy and Supply

Quantitative Targets for Supply Management	2011	2012	2013	2014	2015
Edible grain Production ('000 MT)	5,341	5,433	5,528	5,623	5,721
Requirement ('000 MT)	5,488	5,593	5,697	5,802	5,908
Food safety ('000 MT) (3-month stock)	1,372	1,398	1,424	1,451	1,477
Mountains food requirement ('000 MT)	338	341	344	348	351
Transport needs 50 % ('000 MT)	169	171	172	174	176
Population in Mountains (Number)	1,760,991	1,776,734	1,793,294	1,810,590	1,828,563
Average distance to transport (Km)	12,000	12,000	12,000	12,000	12,000
Transport rate per km/t (NRs)	4.94	4.94	4.94	4.94	4.94
Supply of iodized salt (in 16 mountainous districts)	15,000	15,000	15,000	15,000	15,000
Transport subsidy for food grain (NRs millions)	10,021.6	10,111.2	10,205.4	10,303.9	10,406.1
Transport subsidy for iodized salt (NRs millions)	889.2	889.2	889.2	889.2	889.2
Total transport subsidy (NRs in millions)	10,910.8	11,000.4	11,094.6	11,193.1	11,295.3

Table 2h: Resource Availability as per Budget 2010/11

(NRs in million)

Particular	2011	2012	2013	2014	2015	TYP total	5-year total
Employment and income generation	10,917	11,883	11,179	11,313	11,449	33,979	56,741
Social security	8,948	9,502	10,029	10,618	11,241	28,479	50,339
Delivery in health institutions	783	820	873	921	972	2,476	4,370
Food-related security	2,325	1,550	78	14	3	3,953	3,970
Housing	607	622	816	945	1,096	2,045	4,086
Pension, allowance and gratuity	14,840	18,150	22,262	27,266	33,396	55,252	115,914
Total (NRs million)	38,420	42,527	45,237	51,078	58,156	126,185	235,419

Note: Based on projected annual growth during TYP period.

Table 2i: Resource Availability as per Budget 2010/11

(in percentage)

Particular	2011	2012	2013	2014	2015	TYP total	5-year total
Employment and income generation	28.4	27.9	24.7	22.1	19.7	26.9	24.1
Social security	23.3	22.3	22.2	20.8	19.3	22.6	21.4
Incentives for delivery cases	2.0	1.9	1.9	1.8	1.7	2.0	1.9
Food related security	6.1	3.6	0.2	0.0	0.0	3.1	1.7
Housing	1.6	1.5	1.8	1.9	1.9	1.6	1.7
Pension, allowance and gratuity	38.6	42.7	49.2	53.4	57.4	43.8	49.2
Total (NRs in million)	38,420	42,527	45,237	51,078	58,156	126,185	235,419

Note: Based on projected annual growth during TYP period.

Table 2j: Government Resources*(NRs in million)*

Particular	2011	2012	2013	2014	2015	TYP total	5-year total
Employment and income generation	2,610	7,296	7,977	8,721	9,535	17,882	36,138
Social security	8,948	9,502	10,029	10,586	11,174	28,479	50,240
Incentives for delivery cases	2	3	4	4	4	9	17
Food related security	0	0	0	0	0	0	0
Housing	607	622	816	945	1,096	2,045	4,086
Pension	14,840	18,150	22,262	27,266	33,396	55,252	115,914
Total	27,008	35,573	41,087	47,523	55,205	103,668	206,395

Note: Based on projected annual growth during TYP period.

Table 2k: Government Source for Resources*(in percentage)*

Particular	2011	2012	2013	2014**	2015**	TYP total	5-year total
Employment and income generation	9.7	20.5	19.4	18.4	17.3	17.3	17.5
Social security	33.1	26.7	24.4	22.3	20.2	27.5	24.3
Incentives for delivery cases	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Food related security	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Housing	2.3	1.8	2.0	2.0	2.0	2.0	2.0
Pension	55.0	51.0	54.2	57.4	60.5	53.3	56.2
Total (NRs million)	27,008	35,573	41,087	47,523	55,205	103,668	206,395

Note: * In order to avoid double counting, the estimates do not include the provision of expenditure provision of other thematic areas such as water and sanitation, road, education, agriculture, hydropower, gender and health (except incentives for delivery cases) etc. made in Mid-Term Expenditure Framework, 2010, NPC. ** Based on projected annual growth during TYP period.



UNIVERSAL PRIMARY EDUCATION

MDG 2: ACHIEVE UNIVERSAL PRIMARY EDUCATION

Table 3a: Projections on Pre-primary Education Requirements

(in number)

Indicator	2011	2012	2013	2014	2015
Total teachers	43,641	48,979	54,511	60,243	66,181
New teachers	6,458	6,807	7,168	7,539	7,923
Material and teaching guides	1,178,310	1,322,434	1,471,804	1,626,570	1,786,888
Classrooms	11,297	15,562	22,418	35,111	66,181
Classrooms to be built per year	3,116	4,576	7,304	13,395	32,394
Latrines/toilets	1,412	1,945	2,802	4,389	8,273
Latrines to build each year	390	572	913	1,674	4,049

Table 3b: Primary Education Requirements

(in number)

Particulars	2011	2012	2013	2014	2015
No. of total teachers	15,415	22,610	33,148	48,575	71,149
No. of new teachers	5,218	7,647	11,201	16,398	23,997
No. of staff rooms	6,540	7,157	7,877	8,744	9,837
Staff rooms to build by year	543	617	720	867	1,093
No. of non-teaching staffs	3,854	5,653	8,287	12,144	17,787
No. of new non-teachers	1,305	1,912	2,800	4,100	5,999
Material and guides	8,038,636	8,044,643	8,049,881	8,055,564	8,063,500
Classrooms requirements	32,700	35,786	39,385	43,721	49,185
Classrooms to be build per year	7,618	8,454	9,506	10,895	12,842
No. of latrines/toilets	6,540	7,157	7,877	8,744	9,837
Latrines to build each year	1,524	1,691	1,901	2,179	2,568
No. of total other rooms required	3,924	4,294	4,726	5,247	5,902
Other rooms to build by year	914	1,014	1,141	1,307	1,541

Table 3c: Literacy, Adult and Non-formal Education Requirements

(in number)

Particular	2011	2012	2013	2014	2015
Total adult enrolment	1,313,218	1,347,223	1,382,403	1,418,804	1,456,471
Male	617,446	623,621	629,857	636,155	642,517
Female	695,772	723,603	752,547	782,648	813,954
# Total teachers required	54,963	60,047	65,606	71,685	78,332
Supervisory staff(literacy)	6,726	7,763	8,935	10,258	11,750
Learning materials	1,827,222	2,210,684	2,674,803	3,236,582	3,916,616
Teaching materials	109,926	120,095	131,213	143,370	156,665

Table 3d: Strategic Interventions (Education Sector)

Intervention	(Sub)Sector
Type I: For improvement in primary education (NER, survival rate and efficiency)	
1 Increase coverage of pre-school programs/early childhood development (ECD) to improve access and completion rate of primary education.	Education
2 Identify the location of unreach population and assess their needs; identify the socio economic conditions hindering the full participation of these groups at school.	Education
3 Ensure the schooling facilities within a walking distance by constructing rural roads and trails	Transport
4 Increase access to improve primary/basic and secondary schools as well as adult literacy programmes through (i) provision of infrastructure; (ii) management of teachers, (iii) training to teachers; (iv) provision of learning materials; (v) reforms in curriculum and curricular materials; (vi) strengthening schools based management; and (vii) demand-side interventions to encourage enrolment and ensure retention of children in school.	Education
5 Make a provision of financial and non-financial incentives to ensure supply and retention of quality teachers in the rural setting.	Education/ Finance
6 Undertake curriculum reforms taking local specificities and life skill related needs into account and emphasize ICT development in order to encourage parents to send their children to school.	Education
7 Provide demand-side incentives such as scholarships to increase enrolment for students of targeted communities.	Education/ Finance
8 Provide mid day meal, dresses, educational materials, text books and other incentives to students of targeted groups (poor families or depleting ethnicities such as Raute and Chepang) in order to increase their enrolment, retention, and learning.	Education
9 Implementation of alternative/flexible schooling/out school programmes for children who drop out the schools for reasons that may not be commonly addressed and to address the needs of the marginalized children; revisit per child funding system and process;	Education
10 Undertake teacher redeployment with a view to ensure the number of teachers in a school to maintain the desired student/teacher ratio.	Education
11 Improvement of curriculum, curricular materials, text materials and continuous assessment system at primary level and reform in school examination at all level to reduce drop- out rates before completing the primary cycle.	Education
12 Implementation of the awareness programme, for the improvement in the status of social inclusion, among school authorities, teachers, parents and local level stake holders to improve enrolment status of the children of all communities especially from disadvantaged groups.	Education
13 Implementation of capacity development programmes to school supervisors and resource persons as an incentive in order to ensure regular inspection of schools and teachers performance.	Education
14 Implement appropriate measures to bring out-of-school children and drop out children into schools in collaboration with non-governmental organizations and civil societies and community level local organizations.	Education
15 Undertake appropriate interventions such as facilities of mobile schools for the high mountain mobile population that moves to different places in different seasons.	Education
16 Improve child friendly teaching learning environment. Provide additional support to primary school children whose mother tongue is not Nepali and introduce mother tongue as a medium of instruction – introduction of multilingual education at primary level.	Education
17 Prevent and treat communicable disease to reduce adverse impact on children's enrolment, teacher attrition and attendance.	Health
18 Expand the Early Childhood Development Programmes (ECDP) in the area including the pocket area of most vulnerable and disadvantaged communities by upgrading the qualifications of facilitators and some sort of additional supports to ECD centres.	Education
19 Improve access to water supply to make children free from fetching water allowing them to attend school.	Water and Sanitation
20 Provide girls' toilets in schools to encourage their enrolment and completion.	Education
21 Implement new and effective scholarship and incentive packages, especially for girls and children from disadvantaged groups.	Education/ Finance
22 Improve access to electric power to save time in collecting fuel wood thus facilitating school attendance.	Energy
23 Implement different measures to reduce absenteeism of teachers in collaboration with teachers' professional organizations. Develop capacity of school management committee through orientation and training, and strengthen monitoring mechanism to improve the student teacher interactions in the classrooms.	Education

Intervention	(Sub)Sector
24 Encapsulate/integrate various teachers training for developing effective teaching-learning situation; focus on life skill education	Education
25 Provision of incentives and additional grants to school for the management of teachers on the basis of un-served students (based on per capita scheme), incentives to schools for recruiting female teachers, teachers from disadvantaged and differently able communities and retention of quality teachers in the rural area.	Education/ Finance
Type II: General	
26 Ensure better access to tertiary education to provide incentives to complete primary/basic and secondary education. Provision of quality tertiary education is necessary to ensure supply of quality teachers at lower levels.	Education
27 Raise rural household income through increase in agricultural productivity so that school attendance of the children from poor households may increase.	Agriculture
28 Undertake parental education program through advocacy, awareness raising and other motivational programs for the parents to attract them towards schools and their children's education/learning.	Education
29 Encourage secondary education amongst women to push up the age of marriage, lower fertility rates and improve child care practices. And, promote secondary education to increase the age of marriage, contraception use, and access to prenatal care and safe delivery, all of which reduce maternal mortality.	Education/ Gender
30 Promote technical education to increase supply of trained workers, who are essential in designing and managing water supply and sewage infrastructure.	Education/ Water
31 Provide incentives to traditional institutions/schools to promote them for the use of National Curriculum framework including national curriculum and national examinations and education system.	Education/ Finance
32 Undertake the capacity development of individual, institutional and systemic in a way to ensure the timely delivery of services with quality manner.	Education
33 Undertake the school improvement planning (SIP) process at the school level and strengthen the capacity of school stakeholders to undertake the social audit and schools' self assessment in an effective way.	Education
34 Strengthen the data management system at levels of education system and promote the use of data in planning and decision making by aiming effective utilization of scarce resources and focusing on results.	Education
35 Provide support to schools based on number of students to ensure the transparent allocation of resources and undertake activities to promote performance of schools.	Education
36 Conduct social mobilization and School Enrolment Campaign to reach the marginalized groups for awareness raising and empowering to people to articulate their demands.	Education
37 Coordinate educational activities at all levels in intra and enter education sector	Education
Type III: Non-formal education and adult literacy	
38 Continuation of national literacy campaign (functional and community literacy) to ensure that all citizens be literate, at least having minimum specified level of ability to read and write.	Education
39 Raise the literacy level which may subsequently contribute towards better management of schools and children's learning. This will also leads to the better management of nutritional needs, farm production and health status of family members.	Education
40 Increase training in technical, managerial, agricultural extension and marketing areas for women to increase income-generating opportunities in agriculture, fisheries, industry, business, arts and crafts. Provide vocational education and entrepreneurship development training.	Education/ Agriculture
41 Link adult literacy programs to increase awareness about the causes and prevention of child mortality, family planning practice, HIV/AIDS and improve child care practices. Undertake educational interventions and literacy programs to increase awareness on health related issues and also for making adult education programme functional and relevant in the context of life skill education needs.	Health
42 Effective Implementation of post literacy support programme through the development of Community Learning Centres (CLCs) at village levels for institutionalized provisions of literacy and post activities.	Education
43 Implementation of Market Oriented Skill Training (MOST) and livelihood training programme focusing on 15-24 age group and supporting by income generating activities after training.	Education
44 Development and implementation of a linkage programme between formal and non formal education to support children and youths who are potential drop-out or out of school, both drop-outs and non- enrolled.	Education
45 Implement the flexible learning approach to respond to diverse needs and to address learners' individual pace of learning.	Education
46 Re-enforce post literacy support programme	Education

ANNEX 4

GENDER EQUALITY AND WOMEN'S EMPOWERMENT

MDG 3: PROMOTE GENDER EQUALITY AND EMPOWER WOMEN

Table 4a: Strategic Interventions (Gender equality and Women's empowerment)

<p>A set of strategic and policies interventions are proposed: (i) building the essential capabilities of right-holders; (ii) enhancing socio-economic and political opportunities; (iii) promoting and protecting women's rights to security to end violence against women and girls; and (iv) addressing systemic issues.</p>	<ul style="list-style-type: none"> ◆ Continue incentives for girls in increasing their access to and quality of education; ◆ Incentives and reservation for women in education, training, employment opportunities and income generating activities with increased resources
<p>Building essential capabilities</p> <ul style="list-style-type: none"> ◆ Building of awareness, sensitization and increasing capability of right-holders to know about and effectively claim their share of development, and enhance their capabilities through education and better health conditions ◆ Awareness-raising among rural women and men on: gender equality and girls' education; and general as well as reproductive health issues 	<p>Promoting women's right to security to end violence against women and girl</p> <ul style="list-style-type: none"> ◆ Drafting of new/revised legislation ◆ Sensitization and awareness against gender-based violence. ◆ Training for judiciary/police officers in gender issues and handling gender-based violence ◆ Establishment of temporary shelters/service centres for victims of violence ◆ More widespread trafficking checkpoints in collaboration with NGOs and women police cells ◆ Promote and protect women's rights to security in order to end violence against women and girls ◆ Develop capability of right-holders to claim effectively their share of development ◆ Strengthen institutional mechanism and information management ◆ Develop enabling environment for home-based workers ◆ Establishment of database through research on gender-based violence and dissemination of information
<p>Enhancing socio-economic and political opportunities</p> <ul style="list-style-type: none"> ◆ Drafting and/or revision of legislation for property and inheritance rights, political and economic participation ◆ Increase of vocational technical and leadership trainings to secondary/higher secondary and out-of-school girls ◆ Preparation classes for women at the district level for local/foreign employment ◆ Preparation classes for women for public service entrance examination ◆ Provision of child care centres for working/studying women ◆ Training in mobilization, leadership and group dynamics from local to central levels and training for women candidates for elections ◆ Sensitization and awareness for parliamentarians, policy-makers, training implementers and institutional actors on policy and legal reforms and their effective implementation and also in enhancing socio-economic and political opportunities. 	<p>Addressing systemic issues</p> <ul style="list-style-type: none"> ◆ Institutional capacity development of MOWCSW through additional financial and human resources ◆ Systemic support to gender mainstreaming—strengthening of gender units in planning section of all ministries ◆ Targeted programs for single women, widow, Dalit women and marginalized communities ◆ Gender mainstreaming in planning, implementation, monitoring and evaluation.

Policy strategies

- ◆ Scale-up of targeted interventions that have yielded positive results
- ◆ Calculation of women's contributions to the economy in national accounts, including hours of unpaid domestic, community and family care work
- ◆ Compulsory gender analysis of programmes/projects and a gender-responsive budgeting process
- ◆ Performance evaluation of sectoral ministries, local bodies and NGOs in relation to gender equality and women's empowerment
- ◆ Policy and legal reforms as well as institutional set-ups to implement provision for at least 33-percent representation of women in policy and decision-making process at all levels
- ◆ Strong institutional mechanisms and capable human resources to end all kinds of violence against women and girls including trafficking
- ◆ Gender management information system for close monitoring of legal and policy reforms and implementation processes
- ◆ Expansion of the Women's Development Programme of the Ministry of Women, Children and Social Welfare (MOWCSW) to all VDCs
- ◆ Targeted programmes for empowerment of women from marginalized groups including Dalit, Adivasi Janajati, Madhesi, Muslim, and single women
- ◆ Improve collaborative efforts among government, non-government and private-sectors to integrate a gender perspective at all levels



HEALTH SERVICES

MDG 4: REDUCE CHILD MORTALITY

MDG 5: IMPROVE MATERNAL HEALTH

MDG 6: COMBAT HIV AIDS, MALARIA AND OTHER DISEASES

Table 5a: Strategic Interventions (Child Health)

<p>Following list of interventions has been identified for further action:</p> <ul style="list-style-type: none"> ◆ Carry out maintenance activities at scale for CBIMCI, maintaining the quality of the ongoing programme and focusing on nutrition components. ◆ Reinforce interventions to encourage clean delivery, newborn resuscitation, prevention of hypothermia, kangaroo mother care, antibiotics for infection, breastfeeding, hygiene education and antenatal interventions. Thus there is need to expand the CBNCP to new districts with some minor modification in strategy (some activities need to be merged into safe motherhood and CBIMCI programmes). ◆ Promote and raise awareness for implementation of the CBNCP at both health facility and community levels with advocacy from the National Health Education, Information and Communication Centre (NHEICC). ◆ Manage and strengthen the proper functioning of cold-chain capacity in all 75 districts, including the construction of new cold rooms, the repair and maintenance of existing ones, and the disposal of un-repairable equipment. ◆ Equip health workers with skills on vaccine management and cold-chain maintenance through refresher training. 	<ul style="list-style-type: none"> ◆ Strengthen and scale up the immunization programme, aiming at reaching universal coverage of eligible children. Expand the immunization programme to schools in coordination with the Ministry of Education. ◆ Fill vacant posts for Village Health Workers (VHWs) and create posts in municipality areas. It is also important to control frequent transfer and deputation of staffs, and implement other appropriate measures for boosting staffs morale. ◆ Adopt and implement integrated micro-planning for maternal and child health. ◆ Establish and expand public health clinics in the wards of Municipalities including neonatal services. ◆ Strengthen the monitoring and supervision of child health programmes. Similarly, reporting of services needs to be made mandatory for all health institutions, both public and private. ◆ Local resources need to be mobilized, with a set of guidelines and directives to allocate some portion towards achieving the MDGs related to child health. ◆ Partnerships with the community, non-State actors and the private sector need to be strengthened and continued for achieving MDG 4. ◆ Analyse the feasibility of introducing new vaccines (typhoid, rota virus and hepatitis A). ◆ Strengthen service delivery sites in health facilities and activities to create demand for newborn care. ◆ Strengthen the monitoring and supervision system.
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Table 5b: Strategic Interventions (Maternal Health)

<p>Following list of interventions has been identified for further action:</p> <ul style="list-style-type: none"> ◆ Revamp family planning as an integral part of reproductive health services. To address unmet need for contraception, all health posts need to provide at least five methods of family planning and seven methods from all district hospitals. Strengthen integrated family planning services in hospitals. ◆ Provide training on family planning methods to health workers ◆ Initiate adolescent-focused programmes on sexual and reproductive health. ◆ Strengthen tracking of pregnant women. Improve counselling and awareness programmes to encourage delivery at health facilities. ◆ Ensuring availability of human resources. Increase the number of SBAs and promote institutional delivery. ◆ Strengthen the capacity of FCHVs in maternal and reproductive health. 	<ul style="list-style-type: none"> ◆ Establish birthing centres in all health posts and selected sub health posts. ◆ Strengthen and expand BEOC/CEOC sites ◆ Emphasize continuum of care (ANC, delivery care and PNC). ◆ Strengthen referral systems from the community to CEOC sites. ◆ Initiate obstetric ultrasound programme for maternal health in rural areas. ◆ Strengthen safe abortion service sites in highly populated areas. ◆ Scale up screening and operation services for uterine prolapse in rural areas. Screen for cervical cancer. ◆ Develop and implement programmes to reduce gender-based violence. ◆ Continue demand-side financing for improving maternal health. ◆ Establish a system to ensure that private and non-government health facilities provide information on maternal health services for the HMIS.
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Table 5c: Strategic Interventions (HIV AIDS)

<p>The following interventions have been identified:</p> <ul style="list-style-type: none"> ◆ Establish a mechanism to provide continuous services to identified HIV-positive people. ◆ Strengthen DACCs to coordinate the district-level response. ◆ Integrate HIV-related services such as VCT and STI testing with reproductive health, primary health care and TB services. ◆ Promote effective VCT services throughout the country. ◆ Integrate the PMTCT programme with the safe motherhood programme. ◆ Accelerate the focus on comprehensive condom programming. 	<ul style="list-style-type: none"> ◆ Strengthen the sentinel surveillance system through a multi-sectoral approach. ◆ Enhance the quality assurance system for HIV-related tests. ◆ Provide an adequate supply of ARVs for needy people. ◆ Scale up HIV prevention programmes, especially among IDUs, FSWs, CSWs and MSM. ◆ Develop strategy for CABA and introduce essential service package ◆ Make special efforts to educate migrant workers about preventing and treating HIV infection. ◆ Integrate HIV and AIDS programmes into the national health system.
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Table 5d: Strategic Interventions (Malaria)

<p>The following interventions have been identified:</p> <ul style="list-style-type: none"> ◆ Plan scale-up of the programme with broader community participation and also in the spirit of meaningful public-private partnerships. ◆ Re-stratify malaria-risk areas of the country, especially in view of climate change. ◆ Raise awareness in rural communities on the threats from mosquito breeding and how to control it at the local level. 	<ul style="list-style-type: none"> ◆ Strengthen the surveillance system to respond promptly to disease outbreaks. ◆ Monitor the effectiveness insecticides regularly. ◆ Distribute LLINs and complement this with stronger BCC. ◆ Develop a vector-control strategy.
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Table 5e: Strategic Interventions (TB)

<p>The following interventions have been identified:</p> <ul style="list-style-type: none"> ◆ Establish a tertiary care chest hospital at the national level ◆ Open a chest unit in each zonal and regional hospital ◆ Provide adequate human resources for chest units in zonal and regional hospitals. 	<ul style="list-style-type: none"> ◆ Establish MDR TB hostels at the regional level. ◆ Provide culture and drug susceptibility testing facilities at the regional level. ◆ Continue providing travel costs to MDR TB patients. ◆ Continue free health services to TB patients, and provide travel costs to MDR TB patients.
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Table 5f: Human resources required for meeting MDGs on health

Human Resource	2011	2012	2013	2014	2015
Medical doctors	1,145	1,477	1,909	2,169	2,448
Technical officers	128	195	285	338	387
Administrative officers	73	105	148	174	199
Nursing officers	131	445	875	1,118	1,321
Nurses	1,345	1,874	2,581	3,003	3,418
Auxiliary Nurse/Midwives	1,993	5,564	12,244	17,062	20,478
Paramedical staff	5,707	6,549	7,616	8,322	9,202
Administrative assistant	2,925	3,378	3,956	4,336	4,800
Total	13,447	19,587	29,614	36,522	42,253

Table 5g: Physical infrastructure required (new construction)

Health Facility	2011	2012	2013	2014	2015	Total
Health posts	400	400	400	400	400	2,000
Primary health care centres	4	4	6	8	4	26
Regional hospitals	1	0	0	0	0	1
Central hospital	0	1	0	0	0	1
Total	405	405	406	408	404	2,028

Note: Adapted from MoHP (2007) Maintenance Strategy for Infrastructures in the Health Sector.

Table 5h: Physical infrastructure resources required (reconstruction)

Health Facility	2011	2012	2013	2014	2015	Total
Health posts	20	20	30	22	10	102
Primary health care centres	5	6	10	8	4	33
District hospitals	8	8	10	10	7	43
Zonal hospitals	1	2	3	3	2	11
Total	34	36	53	43	23	189

Note: Adapted from MoHP (2007) Maintenance Strategy for Infrastructures in the Health Sector.



ENVIRONMENTAL SUSTAINABILITY

MDG 7: ENSURE ENVIRONMENTAL SUSTAINABILITY

Table 6a: Access of households, institutions, and transport and agriculture sectors to energy services

Particular	2010	2013	2015
Electricity lighting			
No. of households with access	2,857,387	3,559,664	4,012,210
Access (%)	56	65	70
Electricity other end-uses			
No. of households having access	253,955	329,504	402,412
Access (%)	5.0	6.0	7.0
No. of health centres/hospitals having access	878	1,090	1,254
Access (%)	19.9	24.7	28.4
No. of educational institutions having access	14,912	18,854	22,055
Access (%)	30	33	35
No. of markets/community centres having access	48	60	68
Access (%)	48	56	61
No. of government institutions having access	5,803	7,165	7,988
Access (%)	60	71	78
No. of other institutions having access	14,508	18,523	21,327
Access (%)	30	36	40
No. small and micro-industry having access	2,964	3,934	4,748
Access (%)	30	32	34
Liquid fuel end-uses			
No. of other agriculture uses having access	11,384	16,656	19,775
Access (%)	54	65	70
No. of rural transport systems having access	37,727	53,841	61,803
Access (%)	70	85	90
Cooking/heating			
No. of households having access	820,034	1,041,184	1,191,679
Access (%)	16	19	21
No. of households having access to solar water heating	101,867	137,723	143,230
Access (%)	2	2	2
No. of agriculture pump sets having access	4,686	13,268	32,223
Access (%)	5	6	10

Source: Estimates of thematic group

Table 6b: MDG energy needs by end-use (in GJ)

Particular	2010	2013	2015
Households cooking/heating	5,122,756	6,494,233	7,383,550
Households electrical lighting	1,693,832	2,319,406	2,610,906
Households other electrical end-uses	182,848	265,008	326,862
Health centres/hospitals	948	1,297	1,498
Educational institutions	16,105	22,553	26,517
Markets/community centres	52	72	82
Government institutions	6,267	8,502	9,461
Other institutions	15,669	22,229	25,610
Small and micro-industry - Electricity	35,853	53,561	64,931
Small and micro-industry - Heating	544,654	124,986	221,457
Agricultural pump sets	320,703	580,878	888,952
Other agricultural uses	282,549	413,399	490,812
Rural transport	1,615,470	2,285,381	2,668,156

Table 6c: Strategic Interventions (Environmental Sustainability)

Energy	Environment
<ul style="list-style-type: none"> ◆ Develop incentive policy for large scale hydropower projects and made effective so that both internal and external investment could be encouraged to increase production of hydro-energy ◆ Provide enabling environment for community production and distribution of electricity ◆ Develop medium-sized hydropower projects with high potential to supply rural areas and local industries by mobilising private and public capital ◆ Encourage micro-hydro generation with amendment in existing subsidy policy ◆ Encourage private sector to develop small hydropower projects for rural electrification ◆ Initiate people's hydro programs as envisaged in TYP. Provide extra incentives to build 'people's hydro' in line with government policy. Continue existing renewable energy programs ◆ Promote grid-interactive solar energy systems in urban areas ◆ Continue provision of subsidy to poor, Dalit, ethnic groups and conflict victims to make biogas affordable ◆ Use funds generated from Clean Development Mechanism to provide differentiated subsidies ◆ Make off-peak electricity tariff of isolated schemes affordable for cooking mainly in urban areas ◆ Replace increasing relying on fossil fuels like LPG for cooking and other purposes by hydro power ◆ For promoting cooking and heating with clean energy, encourage and expand the biogas programme. ◆ Promote use of power-efficient appliances for energy conservation ◆ Make bio-briquettes popular and affordable for cooking and space-heating ◆ Make improved cooking stoves appropriate for all regions and all family sizes ◆ Promote solar driers/cookers in high mountains and solar cookers in the Tarai ◆ Encourage productive end-uses for micro-hydro ◆ Encourage climate-proofing energy technologies ◆ Electrify farming areas of the Tarai for pumping water ◆ Promote wind energy in viable areas of the Tarai so that groundwater can be pumped ◆ Encourage community electrification for the distribution of electricity ◆ Research and development for bio-fuel. 	<p>Environment</p> <p>Reduced exposure to environmental health impacts</p> <ul style="list-style-type: none"> ◆ Periodic revisions and enforcement of air quality standards ◆ Safe chemical storage and disposal ◆ Waste collection, recycling and composting schemes ◆ Laboratory accreditation for standard analysis and monitoring (Environment Protection Act, provides provisions for accreditation) ◆ Enhancement and enforcement of vehicle standards ◆ Research and development on impacts of pollutants on human health ◆ Protection of forest and plantation ◆ Establish Maintenance Revolving Fund and final disposal facilities in all municipalities ◆ Adopt PPP model in waste collection and management; introduce climate change adaptive planning ◆ Updating and dissemination of information <p>Improved livelihoods (including ecosystem services)</p> <ul style="list-style-type: none"> ◆ Facilitation of forestry user groups ◆ Biodiversity conservation programmes ◆ Medicinal plant development programmes ◆ Livelihood forestry programmes ◆ REDD and carbon financing and benefitting from CDM <p>Reduction in vulnerability through improved capacity and investment for disaster management and climate change</p> <ul style="list-style-type: none"> ◆ Assess impacts of climate change and develop adaptation strategy <p>Governance, institutions, capacity and systemic issues (not already covered)</p> <ul style="list-style-type: none"> ◆ Community-based awareness raising and capacity building programmes ◆ Enhancement of environment educational curricula ◆ Identification of appropriate environment indicators related to key national priorities ◆ Implementation of MEAs in particular those related to species conservation, sustainable use and benefit sharing, regulation of species and their products trade and climate change ◆ Implementation of Climate Change Policy, 2011 including NAPA, climate-resilience programmes and promoting the adoption of low carbon development path

- ◆ CDM capacity enhancement and promotional programme
 - ◆ Enhancement of activities to address the impacts of climate change in the mountains
 - ◆ Research and development such as impacts of climate change, technology development and transfer, loss and gain from climate change by partnering with academe, research institutions and civil society engaged in research and development
 - ◆ Focus on community forest management, utilisation and livelihood enhancement
 - ◆ Measures to control overuse of pesticides
- Water and sanitation**
- ◆ Implement water supply and sanitation programmes to provide access to all by 2017
 - ◆ Water supply services through developing and maintaining existing point sources such as small springs (*kuwa*) and dug well, tube-wells and borings, particularly in the Tarai and inner Tarai
 - ◆ Execute appropriate technology-based water supply schemes to provide immediate outputs
 - ◆ Maintain and rehabilitate old and damaged water supply schemes
 - ◆ Improve water quality in accordance with drinking water quality standards and National Policy on Water Supply and Sanitation
- ◆ Water table recharging in Kathmandu valley, prioritize schemes that will provide immediate outputs
 - ◆ Quality improvement in accordance with drinking water quality standards
 - ◆ Gradual improvement of service standards as outlined in the TYP
 - ◆ Promotion and extension of sanitation facilities in rural and urban areas and strengthening of institutional capability
 - ◆ Rainwater harvesting in the monsoon especially where other conventional water sources are not available
 - ◆ Repair, rehabilitation and reconstruction of non-functional schemes to bring them into operating condition
 - ◆ Policy, legal and institutional reform
 - ◆ Water supply services through private connections, particularly in urban and semi-urban areas, models and also to some extent in rural areas, based on the need and willingness to pay
 - ◆ Introduction of public private partnership (PPP), built, own, operate and transfer (BOOT) and community cost sharing
 - ◆ Prepare and implement National Sanitation Master Plan
 - ◆ Establish Solid Waste Management system in all municipalities based on minimum standard set by Solid Waste Management and Resource Management Centre (SWMRMC)



ROAD INFRASTRUCTURE

Table 7a: Key Interventions and Programmes

Key interventions	Key programmes
<p>1a. To construct, expand and standardize strategic road network including express ways for better mobility of people and flow of goods and for boosting economic activities and growth (from regional to national to international level) [SRN]*</p> <p>1b. To develop and manage expansion and widening of existing roads, including bypasses/ring roads and elevated roads, for reducing urban traffic congestion and efficient operation of urban economic activities [URN]*</p>	<p>East–West Highway, postal roads, Mid-Hills East–West Highway and north–south highways/trade and transit including Asian Highways, trunk/ expressways, feeder roads and links to district headquarters; upgrading, widening and improvement of urban roads for economic growth and reducing traffic congestion</p>
<p>2. To develop roads to support development of other infrastructures and sectors [SRN/LRN]*</p>	<p>Hydropower, tourism, areas of economic importance/ industry, trade, major market centres/interurban linkages, irrigation, agriculture, health and education, etc.</p>
<p>3. To develop and manage local road networks, and trails and suspension bridges to increase/ improve accessibility of local people to basic services, resources and opportunities, including help to reduce poverty/enhancement of livelihoods, adopting decentralized and sustainable development concepts [LRN, trail bridge, trails]</p>	<p>Accesses to agriculture, market service centres, rural areas, communities etc.; supplementary infrastructures, employment opportunities and other social empowerment activities</p>
<p>4. To develop and manage alternative modes of transport [SRN/LRN]</p>	<p>Alternative modes of transport such as airways, railways, waterways, ropeways, cable car, etc.</p>
<p>5. To lower transportation costs, providing reliable and safe transport services by managing road assets sustainably, including a planned road maintenance system [SRN/LRN]</p>	<p>Manage road and bridge assets including implementing a planned maintenance system for SRN, LRN, trail bridges/trails</p>
<p>6. To actively promote public–private partnerships, adopting PPP/BOT/BOOT* model as appropriate for roads and other mode of transport development and management [SRN/LRN]</p>	<p>To promote and encourage participation of private sector in development, construction, maintenance and management (BOT/BOOT, PPP models in road subsector)</p>
<p>7. To strengthen and enhance institutional capacity of sectoral agencies for delivery in accordance with market economy, decentralization and governance systems [SRN and LRN]</p>	<p>Human resources management, organizational development, institutional strengthening, promotion of research and development, road safety and furniture, appropriate technology, local resource utilization, pollution and environment management, social safeguards, cross-cutting issues etc.</p>

Notes: * SRN = strategic road network; URN = urban road network; LRN = local road network; PPP = public–private partnership; BOT = Build-Operate-Transfer; BOOT = Build-Operate-Own-Transfer.

Table 7b: Strategic Road Network

Intervention	2011	2012	2013	2014	2015	3-year cumulative	5-year cumulative
Major intervention							
Improvement/widening (km)	95	100	110	125	135	305	565
Periodic (Ash/SSD*)							
Surface dressing/sealing (km)	673.7	952	11,18.6	1,155.8	1,225.2	2,744	5,125
Asphalt overlay (km)	126.3	348	381.4	381.4	381.4	856	1,619
Upgrading (directly BT*) (km)	1,075.1	1,118	1,187.5	1,187.5	1,187.5	3,380.6	5,755.6
Upgrading (GR*) (km)	270	395	385	390	420	1,050	1,860
New construction (ER*) (km)	396	470	450	450	450	1,316	2,216
Bridge construction/rehabilitation (no.)	65	70	75	120	110	210	440
General intervention							
Routine maintenance (km)	8,300	8,696	9,166	9,616	10,066	9,166	10,066
Recurrent maintenance (km)	8,300	8,570	8,965	9,350	9,740	8,965	9,740
Emergency maintenance (km)	8,300	8,696	9,166	9,616	10,066	9,166	10,066
Backlog maintenance (km)	190	190	190	200	200	570	970
Bridge minor maintenance and study (no.)	1,400	1,465	1,535	1,610	1,730	1,535	1,730
Other modes of transport projects (no.)	-	5	8	12	15	13	40

Note: * Ash/SSD = Asphalt/Single Surface Dressing; BT = blacktop; GR = gravelled road; ER = earthen road.

Table 7c: Local Road Network

Particular	2011	2012	2013 cumulative	3-year	2014	2015 cumulative	5-year
A1. Roads							
1. Construction of new roads (earthen) (km)	493	600	600	1,693	625	625	2,943
2. Rehabilitation/improvement and upgrading							
2.1 Rehabilitation of earthen roads (km)	361	698	691	1,750	610	610	2,970
2.2 Upgrading of earthen to gravel roads (km)	555	1,050	1,075	2,680	1,075	1,075	4,830
2.3 Upgrading of gravel to paved roads (km)	91	189	192	472	182	182	836
3. Maintenance							
3.1 Routine (km)	14,293	14,786	15,386	15,386	15,986	16,611	16,611
3.2 Recurrent (km)	13,814	14,369	15,419	15,419	16,494	17,569	17,569
3.3 Periodic (km)	810	1,095	1,345	3,250	1,625	1,860	6,735
3.4 Emergency (km)	14,293	14,786	15,386	15,386	15,986	16,611	16,611
A2. Culverts and bridges							
4.1 Construction of motorable bridges (no.)	29	39	41	109	42	42	193
4.2 Construction of culverts/causeways	384	394	396	1,174	398	405	1,977
A3. Trails and other infrastructures							
5. Construction of trail bridges (no.)	400	505	510	1,415	515	520	2,450
6. Major maintenance of trail bridges (no.)	50	60	110	220	130	135	485
7. Upgrading/maintenance of trails (km)	150	210	260	620	265	270	1,155
8. Other modes of transport schemes (ropeways, tuin, pheri, etc.) (no.)	5	10	15	30	18	21	69

Table 7d: Unit cost for strategic road network

S.N	Description	Cost (NRs in '000)
1	Improvement/widening (per km)	8,300
2	Rehabilitation (per km)	9,500
3	Periodic (Ash/SSD)	
3.1	Surface dressing/sealing (per km)	2,000
3.2	Asphalt overlay (per km)	6,200
4	Upgrading (directly BT) (per km)	7,500
5	Upgrading (GR) (per km)	1,500
6	Upgrading (mixed type) (per km)	4,500
7	New construction (ER) (per km)	12,500
8	Bridge construction and rehabilitation (excl. Koshi Bridge)	40,000
9	Routine maintenance (per km)	46
10	Recurrent maintenance (per km)	65
11	Specific maintenance (per km)	110
12	Emergency maintenance (per km)	4
13	Backlog maintenance (per km)	8,000
14	Bridge minor maintenance and study (1,400 pieces = 49,548.8 m)	5,275 per m
15	Other modes of transport project	5,000

Note: * Ash/SSD = Asphalt/Single Surface Dressing; BT = blacktop; GR = gravelled road; ER = earthen road.

Table 7e: Unit cost for local road network

Particular	Cost (NRs in '000)
A1. Roads	
1. Construction of new roads (earthen) (per km)	6,700
2. Rehabilitation/improvement and upgrading	
2.1 Rehabilitation/improvement of earthen roads (per km)	3,500
2.2 Upgrading of earthen to gravel roads (per km)	1,500
2.3 Upgrading of gravel to paved roads (per km)	2,500
3. Maintenance	
3.1 Routine (per km)	40
3.2 Recurrent (per km)	50
3.3 Periodic (per km)	1,200
3.4 Emergency (per km)	1
A2. Culverts and bridges	
4.1 Construction of motorable bridges	25,000
4.2 Construction of culverts/causeways	2,500
A3. Trails and other infrastructures	
5. Construction of trail bridges	5,000
6. Major maintenance of trail bridges	1,200
7. Upgrading/maintenance of trails (per km)	150
8. Other modes of transport schemes (ropeways, <i>tuin</i> , <i>pheri</i> , etc.)	2,000

Table 7f: Capital Budget for Strategic Road Network

Particular	3-year cumulative (NRs in '000)	5-year cumulative (NRs in '000)
Major intervention		
Improvement/widening	2,531,500	4,689,500
Periodic (Ash/SSD*)		
Surface dressing/sealing	5,488,600	10,250,600
Asphalt overlay	5,305,340	10,034,700
Upgrading (directly BT*)	25,354,500	43,167,000
Upgrading (GR*)	1,575,000	2,790,000
New construction (ER*)	16,450,000	27,700,000
Bridge construction and rehabilitation	8,400,000	17,600,000
General intervention		
Routine maintenance	1,203,452	2,108,824
Recurrent maintenance	1,679,275	2,920,125
Emergency maintenance	104,648	183,376
Backlog maintenance	4,560,000	7,760,000
Bridge minor maintenance and study	23,210	40,829
Other modes of transport projects	65,000	200,000
Institutional strengthening (organization development, human resources development, monitoring and evaluation, management information system, guidelines /directives /manuals, planning (sectoral, PIP), programming and budgeting, research and development, etc.)	3,637,026	6,472,248
Project preparation (feasibility, road safety, detail design and documentation and supervision), baseline studies, audit, monitoring and evaluation, impact assessment	7,274,053	12,944,495
Cross-cutting, pollution/ environmental, road safety, gender equality, social inclusion and economic development and advocacy, employment generation and sustainability	5,091,837	9,061,147
Miscellaneous/overheads/contingencies	3,637,026	6,472,248
Total	92,380,467	164,395,091

Note: * Ash/SSD = Asphalt/Single Surface Dressing; BT = blacktop; GR = gravelled road; ER = earthen road.

Table 7g: Capital Budget for Local Road Network

Particular	3-year cumulative (NRs '000)	5-year cumulative (NRs '000)
A1. Roads		
1. Construction of new roads (earthen) (km)	11,343,100	19,718,100
2. Rehabilitation/improvement and upgrading		
2.1 Rehabilitation/improvement of earthen roads (km)	6,125,000	10,395,000
2.2 Upgrading of earthen to gravel roads (km)	4,020,000	7,245,000
2.3 Upgrading of gravel to paved roads (km)	1,180,000	2,090,000
3. Maintenance		
3.1 Routine (km)	1,778,600	3,082,480
3.2 Recurrent (km)	2,180,100	3,883,250
3.3 Periodic (km)	3,900,000	8,082,000
3.4 Emergency (km)	44,465	77,062
A2. Culverts and bridges		
4.1 Construction of motorable bridges (no.)	2,725,000	4,825,000
4.2 Construction of culverts/causeways (no.)	2,935,000	4,942,500
A3. Trails and other infrastructures		
5. Construction of trail bridges (no.)	7,075,000	12,250,000
6. Major maintenance of trail bridges (no.)	264,000	582,000
7. Upgrading/maintenance of trails (km)	93,000	173,250
8. Other modes of transport schemes (ropeways, <i>tuin</i> , <i>pheri</i> , (no.)	60,000	138,000
9. Supplementary infrastructure (community infrastructure/ buildings, market sheds, bus stops/sheds, etc.)	2,186,163	3,874,182
Institutional strengthening Organization development, human resources development, monitoring and evaluation, management information system, guidelines /directives /manuals, planning (sectoral, PIP), programming and budgeting, research and development, etc.	2,186,163	3,874,182
Project preparation Feasibility, road safety, detail design and documentation and supervision), baseline studies, audit, monitoring and evaluation, impact assessment	3,497,861	6,198,691
Cross-cutting Pollution/ environmental, road safety, gender equality, social inclusion and economic development and advocacy, employment generation and sustainability	2,623,396	4,649,019
Miscellaneous/overheads/contingencies	2,186,163	3,874,182
Total	56,403,012	99,953,898



THEMATIC MEETINGS AND PARTICIPANTS

Thematic Group: Poverty /Employment/Social Protection Sector Feb 2, 2010

1. Mr. Pushpa Lal Shakya, Joint Secretary, NPC Secretariat
2. Mr. Baikuntha Aryal, Joint Secretary, OPMS
3. Mr. Prabhat Kumar Singh, Senior Division Chemical Engineer, MOPPW
4. Mr. Khadga Bahadur Rana, Under Secretary, MOWCSW
5. Mr. Rabi Shanker Sainju, Program Director, NPCS
6. Mr. Suresh Paudel, Under Secretary, MOF
7. Mr. Lok Bahadur Khatri, Under Secretary, MOTCA
8. Mr. Ram Sharan Kharel, Deputy Director, NRB
9. Mr. Kamal Paudel, Statistics Officer, NPCS
10. Mr. Raju Prasad Paudel, Planning Officer, NPCS
11. Mr. Sandeep Nath Upreti, Portfolio Manager, PAF
12. Mr. Basu Lamichhane, Officer, Rural Macro Finance Development Ltd.
13. Dr. Rajendra Prasad Shrestha, Consultant, SPMC-NPC

Thematic Group: Gender Sector June 6, 2010

1. Mr. Ratna Kaji Bajracharya, Joint Secretary, MOWCSW
2. Mr. Khadga Bahadur Rana, Under Secretary, MOWCSW
3. Mr. Bijaya N. Manandhar, Under Secretary, MOWCSW
4. Mr. Surya Shrestha, Under Secretary, MOWCSW
5. Mr. Sharada Pandey, Senior Public Health Administrator, MOHP
6. Mr. Gaja Bahadur Rana, Under Secretary, MOWCSW
7. Mr. Bharat Sharma, Statistical Officer, MOWCSW
8. Ms. Sunita Nepal, Section Officer, MOWCSW
9. Mr. Bharat Subedi, Planning Officer, NPCS
10. Ms. Mithu Thapa, Section Officer, MOWCSW
11. Mr. Bhim Koirala, Section Officer, MOWCSW
12. Dr. Hari Pradhan, NPM, SPMC-NPC/UNDP
13. Dr. Govind Nepal, Consultant, SPMC-NPC

Thematic Group: Education Sector Feb 4, 2010

1. Dr. Lava Dev Awasthi, Joint Secretary, MOE
2. Mr. Diwakar Dhungel, Under Secretary, MOE
3. Mr. Depak Sharma, Under Secretary, MOE
4. Mr. Hari Prasad Lamsal, Deputy Director, Department of Education
5. Mr. Bal Ram Timilsina, Deputy Director, Department of Education
6. Mr. Gopal Krishna Shrestha, Director, CTEVT
7. Ms. Devi Pandey (Khatri), Section Officer, MOE
8. Ms. Meena Regmi (Paudel), Officer, MOE
9. Mr. Nawaraj Rijal, Section Officer, MOE
10. Ms. Rama Aryal, Section Officer, MOE
11. Mr. Ramesh Raj Gautam, Section Officer, MOF
12. Mr. Nakul Baniya, Section Officer, MOE
13. Ms. Rama Nepal, Technical Assistant, MOE
14. Mr. Krishna Gopal Maharjan, Office Assistant, MOE
15. Dr. Chandra Lal Shrestha, Consultant, SPMC-NPC
16. Ms. Shrada Rayamajhi, Intern, SPMC-NPC

Thematic Group: Road Sector Dec 27, 2009 and March 19, 2010

1. Mr. Hari Prasad Sharma, Joint Secretary, MOPPW
2. Mr. Gajendra Kumar Thakur, Joint Secretary, MOPPW
3. Mr. Ram Kumar Lamsal, DG, Department of Road, MOPPW
4. Mr. Hari Om Shreewastav, DDG, Department of Road, MOPPW
5. Mr. Dhruva Raj Regmi, DDG, Department of Road, MOPPW
6. Mr. Hari Prasad Dhakal, DDG, Department of Road, MOPPW
7. Mr. Madhav Kumar Karki, SE, Department of Road, MOPPW
8. Mr. Guru Prasad Dhakal, SE, MOPPW
9. Mr. Mukti Gautam, SDE, MOPPW
10. Mr. Jeevan K.C, SDE, MOPPW
11. Mr. Suraj Sigdel, SDE, Department of Road, MOPPW
12. Mr. Dilli Raman Niraula, SDE Department of Road, MOPPW
13. Mr. Radha Krishna Pradhan, Program Director, NPCS
14. Mr. Sagar Ghimire, Road Board Nepal
15. Mr. Deepak Nath Chalise, Executive Director, Road Fund
16. Mr. Shaligram Devkota, Engineer, DOLIDAR
17. Mr. Dila Ram Panthi, Planning Officer, NPCS
18. Mr. Lal Krishna K.C, Consultant, SPMC-NPC

Thematic Group: Environment Sector

July 23, 2010

1. Ms. Meena Khanal, Joint Secretary, Ministry of Environment
2. Mr. Hari Prasad Ghimire, Under Secretary, Ministry of Environment
3. Ms. Indra Kumari Mandhar, Senior Division Chemist, Department of Hydrology and Metrology
4. Ms. Neera Pradhan, Under Secretary, Ministry of Forest and Soil Conservations
5. Mr. Ramesh Adhikari, Section Officer, Ministry of Environment
6. Ms. Ritu Pantha, Statistics Officer, Ministry of Environment
7. Dr. Madan Koirala, Consultant, SPMC-NPC
8. Dr. Govind Nepal, Consultant, SPMC-NPC
9. Dr. Hari Pradhan, NPM, SPMC-NPC

Thematic Group: Health Sector

1. Dr. Laxmi Raj Pathak, Chief, PPICD, MOHP
2. Mr. Surya Pd. Acharya, Joint Secretary, MOHP
3. Dr. Babu Ram Marasini, Sr. Health Adviser, MOHP
4. Mr. Kabi Raj Khanal, Under Secretary, PPICD, MOHP
5. Dr. Rajendra Kumar B.C, Consultant, SPMC-NPC
6. Ms. Bina Pokharel, Senior Programme Coordinator, UNAIDS
7. Ms. Kalpana Shrestha, DIDIBAHINI
8. Ms. Pramilla Bakhati, Section Officer, MOE
9. Ms. Shanta Pant, Section Officer, MOE
10. Mr. Mohan P. Maraseni, Section Officer, MOLD

Thematic Group: Energy Sector

June 14, 2010

1. Mr. Pushpa Lal Shakya, Joint Secretary, NPCS
2. Mr. Sriranjjan Lacoul, Joint Secretary, Ministry of Energy
3. Mr. Sagar Acharya, Program Director, NPCS
4. Mr. Surendra Rajbhandari, Director, NEA
5. Mr. Sundar Shayam Shrestha, Superintending Engineer, DOED
6. Mr. Kalpa Mohan Soti, SDE, Ministry of Energy
7. Mr. Purushottam Acharya, SDE, Ministry of Energy
8. Mr. Bharat Subedi, Planning Officer, NPCS
9. Mr. Keshar Bahadur Pandit, Planning Officer, NPCS
10. Mr. Kamal Paudel, Statistics Officer, NPCS
11. Dr. Govind Nepal, Consultant, SPMC-NPC
12. Dr. Hari Pradhan, NPM, SPMC-NPC

Thematic Group: Water and Sanitation Sector

Dec 24, 2009

1. Mr. Hari Prasad Sharma, Joint Secretary, MOPPW
2. Mr. Deepak Puri, SDE, Water Supply and Sanitation, MOPPW
3. Mr. Rajeev Ghimire, SDE, MOPPW
4. Mr. Bishwambhar Man Shrestha, SDE, DoUDBC, MOPPW
5. Mr. Bharat Raj Sharma, Statistics Officer, MOWCSW
6. Mr. Prakash Dahal, Planning Officer, NPCS
7. Dr. Dinesh Nath Chalise, Consultant, SPMC-NPC

Thematic Group: Local Infrastructure and Agriculture Road Department Sector

1. Mr. Dhan Bahadur Tamang, DG, LIARD
2. Mr. Bhupendra Bahadur Basnet, DDG, LIARD
3. Mr. Bhim Upadhaya, DDG, LIARD
4. Mr. Niraj Shah, SDE, LIARD
5. Mr. Jeevan Kumar Shrestha, SDE, LIARD
6. Mr. Ram Krishna Sapkota, SDE, LIARD
7. Mr. Mani Ram Gelal, SDE, LIARD
8. Mr. Sushil Chandra Tiwari, SDE, LIARD
9. Mr. Sunil Das, SDE, LIARD
10. Mr. Prakash Thapa, SDE, LIARD
11. Mr. Thakur Raj Pant, SDE, LIARD
12. Mr. Ganga Bahadur Basnet, SDE, LIARD
13. Mr. Raj Kumar Goita, SDE, LIARD
14. Mr. Som Raj Timilsina, SDE, LIARD
15. Mr. Jeevan K.C, SDE, MOPPW
16. Mr. Purushottam Nepal, Under Secretary, MLD
17. Mr. Gaya Prasad Ulak, Engineer, Dolidar
18. Mr. Akhanda Sharma, Engineer, LIARD
19. Mr. Shekhar Pokharel, Engineer, RAIDP, PCU
20. Mr. Baikuntha Aryal, Engineer, RAEDP, PCU
21. Mr. Prakash Chaudhari, Engineer, SBD
22. Mr. Gauri Kumar Shrestha, Engineer, Dolidar
23. Mr. Buddha Ratna Tuladhar, RAIDP, PCU
24. Mr. Bharat Kumar Shakya, Section Officer, LDARP
25. Mr. Shiva Chandra Kantha, TBSU, HELVETAS
26. Mr. Dhruva Bandhu Aryal, Under Secretary, NPCS
27. Mr. Lal Krishna K.C, Consultant, SPMC-NPC

Thematic Group: Agriculture and Food Security Sector

Aug 1, 2010

1. Dr. Purushottam P. Manali, Joint Secretary, MOAC
2. Mr. Fulgen Pradhan, Joint Secretary, MOAC
3. Mr. Uttam K. Bhattarai, Joint Secretary, MOAC
4. Mr. Sudarshan P. Dhakal, Registrar, Dept of Corporation
5. Mr. A.N. Mishra, Acting DG, DFTRC
6. Mr. Bishnu Pd. Aryal, DDG, DOA
7. Mr. Nar Bahadur Rajwar, DDG, DLS
8. Mr. Bishnu P. Ghimire, Senior Agri. Economist, Dept of Corporation
9. Dr. Bhartenda Mishra, Executive Director, NARC
10. Dr. Tek Gurung, Director, NARC
11. Mr. Biju Kumar Shrestha, Program Director, NPCS
12. Mr. Mahendra N. Paudel, Sr. Agri. Economist, MOAC
13. Mr. Kanchan Raj Pandey, Sr. Agri. Economist, DOA
14. Mr. Shyam Pd. Poudyal, Programme Director, DLS/DLSTE
15. Mr. Shashi R. Shakya, Sr. Agri. Economist, DLS
16. Mr. Pramod Kumar Shrestha, ISDE, MOI
17. Mr. Sunil Nath Lohani, Sr. Agri. Economist, MOAC
18. Mr. Shankar Pd. Sah, Sr. Agri. Economist, MOAC
19. Mr. Surya Pd. Pandey, Sr. Livestock Dev officer, MOAC
20. Mr. Mandip Rai, Agri. Economist, MOAC
21. Mr. Subham Shivakoti, Sr. Plant Quarantine Officer, DOA
22. Mr. Huma Bokkhim, Under Secretary, MOAC
23. Mr. Hasta Bdr. Bista, Sr. Agri. Economist, MOAC
24. Dr. N.P. Adhikari, Director, NARC
25. Mr. Sunat Kumar Dhungel, Agri. Economist, MOAC
26. Ms. Bindira Adhikari, Agri. Economist, MOAC
27. Mr. Bholu Prasad Chapagai, Section Officer, MOAC
28. Dr. Govind Nepal, Consultant, SPMC-NPC
29. Mr. Madhav Kishor Karkee, Consultant, SPMC-NPC
30. Dr. Hari Pradhan, NPM, SPMC-NPC



Government of Nepal
National Planning Commission
Singha Durbar
Kathmandu, Nepal
Tel: 977-1-4211629
Website: www.npc.gov.np



United Nations Development Programme
United Nations House
Pulchowk, Lalitpur
Tel: 977-1-5523200
PO Box 107
Kathmandu, Nepal
Website: www.un.org.np
www.undp.org.np