MILLENIUM DEVELOPMENT GOALS IN KENYA

NEEDS & COSTS

This Report has been prepared by the Ministry of Planning and National Development, Courtesy of the UNDP, Kenya, and the Government of Finland

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Foreword

Kenya,like the rest of Africa, Kenya recognises that the MDGs offer a great opportunity to address human welfare in the whole world and especially in the developing world. The adoption of the Millennium Declaration and the Millennium Development Goals (MDGs) by the United Nations Assembly in September 2000 was a laudable initiative by the international community to fight poverty, accelerate human development, and facilitate the gradual, but more effective integration of the developing world, especially Africa, into the global economy. The re-affirmation of the MDGs in subsequent international conferences was an additional indication of the commitment of the international community to attack poverty and inequality, and to end the marginalisation and exclusion of the poor and disadvantaged.

In Africa, the challenges of eradicating poverty, of achieving rapid and sustainable socio-economic development, and integrating the continent into the mainstream of the world economy have been increasingly taken seriously by the top echelon of the African leadership as evidenced by some of the recent important development initiatives and measures taken, such as the establishment of the African Union and the adoption of the New Partnership for Africa's Development (NEPAD) as the strategic programme of the Union whose effective implementation would bolster Africa's efforts towards meeting the MDGs and hence claiming the 21st Century for its people.

In recognition of the special needs of Africa for poverty reduction and accelerated human development, the Millennium Declaration called on UN Member States to support the consolidation of democracy in Africa and assist Africans in their struggle for lasting peace, poverty eradication and sustainable development. These states were to take special measures to address the challenges of poverty eradication and sustainable development in Africa, including debt cancellation, improved market access, enhanced Official Development Assistance (ODA) and increased flows of Foreign Direct Investment, and transfers of technology. Africa was to be assisted in building up capacity to tackle the spread of HIV/AIDS and other infectious diseases. Further measures were to be put in place to encourage and sustain regional and sub-regional mechanisms for preventing conflict, promoting political stability and ensuring a reliable flow of resources for peacekeeping operations on the continent. Indeed, this recognition and the commitment of the international community to the special development needs of Africa, coupled with Africa's own development initiatives, raised hopes of achieving the MDGs on the continent by 2015.

However, studies have revealed that while the proportion of people living in extreme poverty in Africa, excluding North Africa, increased from 44.6 per cent in 1990 to 46.5 per cent in 2001, the world's developing countries as a whole experienced a reduction in extreme poverty from 27.9 per cent to 21.3 per cent over the same period. In Kenya, as at 2003, 56 per cent of the population was still living below the poverty line with a projection that at the current trend, 65.9 per cent of the Kenyan population would be living below the poverty line by 2015.

On the other hand, Africa experienced positive progress towards realizing the goal of universal primary education where the net enrolment rate increased from 54% in 1990 to over 60% in 2002. During this same period, Kenya recorded a decline in the net enrolment rate from 80% in 1990 to 74% in 2000 mainly due to the cost sharing policy. However, this situation was reversed when the government introduced a free primary education policy and at the current trend Kenya is likely to achieve this goal by the target date. Kenya is likely to achieve the goal on gender parity by 2015 since the enrolment, retention, completion and progression rates are almost equal. The trends generally show that Kenya is capable of achieving the target on primary and secondary education. However, the main problem is in tertiary institutions where the ratio of the enrolment of girls to that of boys continues to be low.

For child and maternal mortality goals, current trends indicate that the majority of African countries are seriously off track in the pursuit of the achievement of these goals by 2015. In Kenya, there has been a reduction in infant mortality rate during the period 1960-1990 from more than 100 deaths per 1,000 live births to about 60 deaths per 1,000 live births. Unfortunately, this trend reversed for the last decade and infant mortality increased to reach 71 during 1993-1998. Maternal mortality stood at 590 deaths per 100,000 live births during the period 1989-1998, which is still high.

HIV/AIDS is still deepening and spreading poverty in African countries. The continent accounts for 2.3 million or 74.2% of 3.1 million AIDS deaths reported in the world in 2004. The global HIV/AIDS prevalence rate is estimated at 1 per cent while the average for Africa is 8.5 per cent. In Kenya, the national HIV/AIDS prevalence doubled from 5.1% to 10.4% between 1990 and 1995 and peaked at 13.4% in 2000 before declining to 10.6% in 2002. The current trend indicates a decline in HIV/AIDS prevalence due to massive campaign against the scourge.

The target to halve the proportion of Africa's population without access to safe drinking water remains a daunting challenge, with about 300 million people or 54% of the continent's population not currently having access to safe drinking water. In Kenya access to improved water sources at a national level was only 48% in 2000.

This glance at MDGs in Africa clearly indicates that Africa has not made sufficient progress towards meeting the MDGs by the target date of 2015. The Report to the UN Secretary General states that "most countries in Africa are far off track to achieve most or all of the goals". This calls for the continents' re-examination in terms of the strategies to put in place to make significant progress towards achieving these goals. Africa's development Agenda must, starting now, be made more MDGs-friendly. The issues of peace and security, and governance as well as other constraints on Africa's development have to be urgently and adequately addressed at the national, regional and continental levels if Africa is to make progress towards realizing the MDGs. A lasting solution to the destructive and recurrent conflicts in Africa must be found. It is encouraging that through AU African leaders have made peace and security one of its priorities and they, individually and collectively, between 2000 and 2004, took far-reaching and bold initiatives to promote peace and security on the continent. These include the establishment of a continental peace and security architecture, incorporating the Peace and Security Council of the African Union (PSC).

Africa also needs to institute measures to realize good governance to rid herself of unwarranted conflicts and political instability. Most of the conflicts and political instability which have had disastrous consequences for poverty eradication and human development have been largely due to inequitable distribution of national and natural resources, human rights violation, absence of the rule of law, corruption, lack of transparency, accountability and responsive institutions, lack of democracy and a framework for an all inclusive and representative government.

It is encouraging that most of the African countries through NEPAD and African Peer Review Mechanism (APRM) have made significant improvements towards realizing good governance. More important also is that the African countries which have not ratified the African Union Convention Against Corruption, which provides for legislative measures to prevent and punish acts of corruption, non-transparent tendering

procedures, and non-declaration of assets by public officials should do so. Kenya has so far implemented this.

Africa also needs to focus on social and economic policies that are effective and directly addressing the MDGs. Central to the achievement of the MDGs in Africa is the attainment of MDG1, which concerns the reduction of extreme poverty by 2015. Consequently, African countries need effective country-based poverty reduction strategies that can sustain a long-term growth rate of over 7% annually to ensure poverty reduction and sustainable development.

The financing of the MDGs in Africa still remains a big challenge. As at end of 2003, only 5 of the 23 OECD largest donors had attained the target of 0.7% of Gross National Product as Official Development Assistance. If the donor countries would have delivered on the global ODA commitment, aid would be US$165 billion a year, which is about three times the current level and above the current estimates of what is needed to achieve the MDGs. At the Monterrey Conference, donors promised an increase of US$18.5 billion per annum in aid yet between 2002 and 2003, aid increased by less than US$2 billion. The Millennium Declaration also required the international community to support Africa through increased Foreign Direct Investment, a fairer trading system, and debt cancellation, yet to date there are no significant improvements to honour this call.
The achievement of the MDGs requires that the assumptions behind the MDGs agenda must hold. In this regard, achieving MDGs requires actual implementation of the commitments. Both parties must live up to the challenge bestowed upon them during the declaration. It therefore behoves us, both rich and poor nations, to meet our respective obligations in the bargain.

If this is done, however far off track Africa could be towards meeting the MDGs, there is still hope that Africa can meet the goals. Africa is a wealthy continent. All Africa needs is to put in place MDGs-friendly policies and programmes as well as adequate donor support and the continent will deliver on these goals.

Mwai Kibaki, CGH, MP
President of Kenya

Preface

After decades of social, political and economic difficulties, there is new determination at national, regional and global levels to set the world economies, particularly those of the developing world, on the course of progress. African countries, Kenya included, subscribed to the Millennium Declaration with a strong conviction that the future of our societies will be more promising if strong partnerships are built around mobilizing resources and instituting policy measures to implement the MDGs. Nationally, regionally and globally, efforts are being made to provide an MDGs-friendly policy framework because nations have realized that the MDGs are too important to be allowed to fail anywhere in the world.

Evidence arising from the Needs Assessment Study in Kenya indicates that Kenya has great potential to meet these goals. Significant progress has been made towards achieving goals 2 (Achieve Universal Primary Education) and 6 (Combat HIV/AIDS, Malaria and Other Diseases). As for the rest of the goals, the government will need to scale-up efforts in order to implement the goals beyond the current pace. This means that the government will have to meet a number of challenges by 2015 before realizing these goals. These challenges vary from goal to goal and range from policy and institutional reforms to increased funding towards the goals. With the current growth of 4.3%, which is about half of the desired growth of 7% in order to effectively fund the MDGs-related programmes, the government has a great challenge to formulate sound social, economic and political policy reforms that can push the economy to grow at this (desired) level.

Similarly, with an annual estimate of US$ 6.1 billion in expenditure to implement MDGs, it will require serious mobilization of resources and re-orientating the budget to tightly focus the MDGs programmes. It also requires adequate policy realignment to provide a conducive policy and institutional framework to implement the MDGs.

However, with the current government's commitment to the course of pursuing MDGs-based development agenda, and with the implementation of innovative measures to address MDGs at all levels, for example through such funds as Local Authority Transfer Funds (LATF), Constituency Development Fund (CDF) and other constituency-based funds and the emerging fiscal discipline, there is all the hope that if this is sustained, the government will meet most, if not all, of these goals by 2015.

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Acknowledgements

This report is a response by the Government to the need to document the full range of investment efforts required to achieve the Millennium Development Goals. It is a move towards gauging the Government's endeavours to meet the MDGs against the realities of what it would take to realise the goals. The report has been prepared by the Government of Kenya, with support from the United Nations Development Programme and the United Nations Country team in Kenya, under the leadership of the Ministry of Planning and National Development. The consultation process leading to the report was steered by the National MDG Focal Point, Ministry of Planning and National Development, and involved many partners drawn from government departments, KIPPRA, UN Agencies, The Millennium Project MDG Centre, various experts, Civil Society Organizations and the Private Sector. The consultancy team received invaluable technical assistance from the Millennium Project based in New York.

The report benefited from useful comments from a number of key stakeholders brought together through various national and sector-specific stakeholders' workshops. The information, statistics and comments used to finalize this report were provided by various government technical departments, Central Bureau of Statistics, UN Agencies, the Millennium Project (provided the model), the World Bank, the IMF Country Office, Kenya, and other development partners. This Support and contribution is duly acknowledged.

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ACRONYMS AND ABBREVIATIONS

ABE	Adult Basic Education
AGOA	African Growth Opportunity Act
AI	Artificial Insemination
Aids/AIDS	Acquired Immune Deficiency (or Immunodeficiency Syndrome)
ARI	Accute Respiratory Infection
ARV(s)	Antiretroviral(s)
ASAL	Arid and Semi-Arid Lands
AQ	Amodiaquine
CBOs	Community Based Organizations
CBS	Central Bureau of Statistics
CEDAW	Convention on the Elimination of All Forms of Discrimination Against Women
CDF	Constituency Development Fund
CEWs	Community Extension Workers
CMR	Child Mortality Rate
CPP	Core Poverty Programme
CPR	Contraceptive Prevalence Care

CRC	Convention on the Rights of the Child
CSOs	Civil Society Organizations
DARE	District Aids and Reproductive Health
DEOs	District Education Officers
DHMT	District Health Management Teams
DOMC	Division of Malaria Control
DOTS	Directly Observed Treatment Short (Course)
ECDE	Early Childhood Development and Education
EMCA	Environmental Management Coordination Act
EMIS	Educational Management Information Systems
EPI	Expanded Immunization Programme
ERS	Economic Recovery Strategy
FD	Forest Department
FGM	Female Genital Mutilation
FPE	Free Primary Education
FTCs	Farmer Training Centres
GDF	Global Drug Facility
GDP	Gross Domestic Product
GER	Gross Enrolment Rates
GFCF	Gross Fixed Capital Formation
GITIM	Government Information Technology Investment Management
GJLOS	Governance, Justice, Law and Order Sector
GPA	General Purpose Account
HIV	Human Immunodeficiency Virus
HSSP	Health Sector Strategy Plan
ICPD	International Conference on Population & Development
ICT	Information and Communication Technology
IEC	Information, Education and Communication
IFMS	Integrated Financial Management System
IMCI	Integrated Management of Childhood Illnesses
IMR	Infant Mortality Rate
IP	Investment Programme
IPPD	Integrated Payroll and Personnel Database
ITDG	Intermediate Technology Development Group
ITNs	Insecticide treated (bed) nets
IWRM	Integrated Financial Management System

KCPE	Kenya Certificate of Primary Education
KCSE	Kenya Certificate of Secondary Education
KDHS	Kenya Demographic and Health Survey
KEFRI	Kenya Forestry Research Institute
KENF	Kenya National Environment Fund
KenGen	Kenya Electricity Generating Company
KENSUP	Kenya slum Upgrading Programme
KEPI	Kenya Expanded Programme of Immunization
KEWI	Kenya Water Institute
KIE	Kenya Institute of Education
KIPPRA	Kenya Institute for Public Policy Research and Analysis
KNEF	Kenya National Environment Fund
KPLC	Kenya Power and Lighting Company
KWS	Kenya Wildlife Service
LLINs	Long Lasting Impregnated Nets
LPG	Liquefied Petroleum Gas
LATF	Local Authority Transfer funds
MDGs	Millenium Development Goals
MED	Monitoring and Evaluation Department
MENR	Ministry of Environment and Natural Resources
MGSc&SS	Ministry of Gender Sports and Social Services
MoA	Ministry of Agriculture
MOES&T	Ministry of Education, Science and Technology
MOU	Memorandum of Understanding
MTEF	Medium Term Expenditure Framework
NACC	National Aids Control Council
NARC	National Rainbow Coalition
NASCOP	National Aid and STI Control Programme
NRS	National Reproductive Health Services
NSC	National Steering Committee
NCAPD	National Coordinating Agency for Population Development
NCPD	National Council for Population and Development
NEMA	National Environmental Management Agency
NFS	Non-Formal Schools
NMS	National Malaria Strategy
NPAN	National Plan of Action for Nutrition
NSC	National Steering Committee

NSHIS	National Social Health Insurance Scheme
NTBs	Non-tariff Barriers
ODA	Overseas Development Assistance
OECD	Organization for Economic Cooperation and Development
ORT	Oral Rehydration Therapy
PEM	Public Expenditure Management
PETS	Public Expenditure Tracking Systems
PPD	Public Procurement Directorate
PRSP	Poverty Reduction Strategy Paper
PSP	Private Sector Participation
RAES	Rural Afforestation Extension Programme
RBM	Roll-back Malaria
REA	Rural Electrification Authority
REP	Rural Electrification Programme
ROM	Results Oriented Management
RMFL	Road Maintenance Levy Fund
SMCs	School Management Committees
SNA	System of National Accounts
SP	Sulphadoxine Pyrimethemine
STI	Sexually Transmitted Infections
TB	Tuberculosis
TIVET	Technical, Industrial, Vocational and Entrepreneurship Training
TTCs	Teachers Training Colleges
UGLs	Units on Gender Issues
UN	United Nations
UNICEF	United Nations Children's Fund
UPE	Universal Primary Education
VCT	Voluntary Counselling and Testing
VIP	Ventilated Improved Pit
WHO	World Health Organization
WSS	Water and Sanitation Sector
WTO	World Trade Organization
WUAS	Water User Associations

EXECUTIVE SUMMARY

THE MILLENNIUM DEVELOPMENT GOALS

INTRODUCTION

The world's concern about the human condition in the 21st Century is voiced in the **Millenium Declaration**, which calls on governments to put in place actions that will lead to noticeable improvements in the human condition by 2015. The dream of making significant differences in human well being by 2015 is given concrete expression in the **Millenium Development Goals** (MDGs): a set of quantified and time-bound targets for reducing poverty by 2015.

The MDGs give governments a common framework for structuring policies and practices. The framework facilitates speed and efficiency in complying with the MDG spirit in planning, budgeting and monitoring at the national level. The MDGs also bring clarity to the shared and individual roles and responsibilities of key actors: of Governments to achieve or enable the achievement of goals and targets; of the network of international organizations to marshal their resources and expertise in the most strategic and efficient way possible to support and sustain the efforts of partners at the global and country levels; and of citizens, civil society organizations (CSOs) and the private sector to engage fully in tremendously improving human conditions by 2015.

The first major MDGs-related activity in Kenya took place in September 2002 when the first national stakeholders' workshop on the Millennium Development Goals was held. The workshop led to the establishment of a national MDGs Task Force to spearhead the MDG campaign and prepare the first status report on MDGs in Kenya. The MDG Progress Report for Kenya was officially launched in July 2003. The report clearly brought to the fore the fact that under the current resource constraints and policy environment, Kenya is unlikely to achieve the MDGs, even if the potential exists.

To align policy with the MDGs, the Government set out a three-stage planning process. First is to conduct a needs assessment that compares the current situation with MDG targets and identifies the combination of public investments that would enable the country to achieve the MDGs by 2015. The second stage will involve the development of a long-term (10-12 year) policy plan for achieving the MDGs. The third stage will be the review of the medium-term strategies, and specifically the Economic Recovery Strategy (ERS), to be in line with the MDG-based long-term plan.

Kenya fitted well into the needs assessment process when it was selected in 2002 by the UN Secretary-General to be one of the four African countries to pilot the implementation of the Millennium Project. [The others are Ghana, Senegal and Ethiopia]. Consultants were commissioned to undertake needs assessment studies on hunger, education, gender, child health, maternal health, HIV/AIDS and malaria, environment, water, energy and slum improvement. This report on the Needs Assessment and Costing Study is one of the key outputs from this process.

LOOKING AHEAD: CHALLENGES IN ACHIEVING THE MDGs

Kenya's inter-censual population growth rate declined from 3.9% per annum during 1969-79 to 2.5% during 1989-2000. The country's population is characterized by high mortality rates, low and declining life expectancy, increasing fertility rates (from 4.7 children per woman in 1995-1998 to 4.8 in 2000-2003), high infant mortality and death rates, and declining population growth rates which could be attributed to the HIV/AIDS pandemic. The population in absolute poverty was estimated at 56% in 2000.

Infant mortality in 2003 was 77 per 1000 live births, while under-five mortality was 115 per 1000 live births. Only 40% of the births are being delivered in a health facility. Maternal mortality was estimated at 414 per 100,000 live births. Only an estimated 4% of women sleep under insecticide-treated nets. Marked improvements were recorded on HIV/AIDS, with prevalence rate in 2003 being 6.7%, down from 14% reported two years earlier. However, only 15% are visiting VCT centres, although in some areas the VCT centers have been established up to village level. About 20,000 HIV/AIDS infected people are using ARV.

In 2003, net enrolment in primary school education increased to 104% from 93% in 2002. The net enrolment for girls is, however, lower than the overall mean and there are huge regional disparities, with North Eastern province registering the lowest.

Access to safe water is currently estimated at 89.7% in urban areas and 43.5% in rural areas, or a national average of about 57%. In addition, about 81% of the population has access to safe sanitary means, with 94.8% in urban areas and 76.6% in the rural areas. However, the access to safe water supply and sanitation varies greatly from region to region and with considerable disparities within regions.

During the 1990s, investments in water resource management declined significantly, thereby reducing the ability to increase the percentage of the population with access to potable water. There has also been pressure on environmental goods and services, especially the forest resources, which threatens the sustainable development of the country.

Slums are a physical and spatial manifestation of urban poverty and generally regarded as eyesores and potential areas of insecurity. The rapid growth of urban centers has been accompanied with myriad challenges whose cumulative effects has been creation of pockets of urban poverty and general lowering of living standards among the majority of urban dwellers, most of whom live in slums.

A number of reform measures have been undertaken on the environment sector but there is no recent data to show that area under forest cover has changed, access to water and energy services has improved, or life in the slums is now better. However, there is anecdotal evidence to show that the ongoing reforms are bearing fruit. These reforms include the ongoing privatisation of water services in Nairobi, Kisumu, Nakuru, Nyeri, Eldoret and Meru and establishment of water sector management bodies; the institutional and legal reforms in the energy sector are leading to more regular power supply; and the National Environmental Management Authority (NEMA) has designed and is enforcing environmental legislation and standardization.

Apart from lack of resources, there are a number of issues that the Kenyan society, and the Government in particular, should focus on, the main ones being governance, security and absorptive capacity. The IP-ERS recognized one of the key impediments to economic and social development as poor economic governance e.g. enforcement of credible contracts, and efficiency and effectiveness of public administration systems. Other issues include the procurement system, public expenditure management, and a low absorptive capacity especially of the development budget.

THE MACROECONOMIC SETTING

The Kenyan economy has been characterized by stagnation in economic growth in the last two decades. Between 1997 and 2002 the economy grew by an annual average rate of only 1.5%, below the population growth estimated at 2.5% per annum. The failure to drastically improve the country's investment and savings record threatens the recovery effort, since no meaningful growth can take place without adequate capital accumulation. In the period 2000-2002, the average domestic savings rate was 13.1%. Public gross fixed capital formation (GFCF) as a percentage of GDP was 2.01% in 2003. Despite the signs of economic recovery, the growth of the economy is far below the necessary growth rate of about 7% needed to support implementation of MDG-related activities within the remaining decade to 2015.

The core objectives of the NARC Government's development agenda are to restore economic growth and reduce poverty through employment and wealth creation, as articulated in the ERS. The ERS is built around four pillars, namely, restoration of economic growth within the context of a sustainable macroeconomic framework, strengthening the institutions of governance, restoration and expansion of the infrastructure, and investing in the human capital

of the poor. The ERS has also equity and socio-economic agenda focusing on reducing inequalities in access to productive resources and basic goods and services. The other agenda of the economic recovery plan is promotion of sustainable management of resources on which the very poor depend such as land, water, and forests. To implement the ERS, an investment programme (IP-ERS) was formulated taking into account views of development partners, the private sector and other stakeholders.

The macroeconomic framework emphasises a stable macroeconomic environment characterized by low inflation, declining fiscal imbalances, declining net domestic borrowing, and healthy balance of payments. In addition, the IP-ERS called for policy measures to address the issues of domestic savings and investment, improving accountability in the use of public resources, and restructuring and refocusing public spending toward priority activities.

There has been an increase in Government revenue in the recent years, from Kshs. 194,507 in 2001/02 to Kshs 255,087 million in 2003/04. Actual expenditures rose from 24.5% of GDP in 2001/02 to an estimated 27.2% of GDP in 2004/05; recurrent expenditures declined from 21.8% of GDP to 21.3% of GDP with development expenditure increasing from 2.7% of GDP to 5.9% of GDP over the same period. Whereas most expenditure components (wages and salaries and interest payments) have declined over the period, expenditures on pensions declined from an average of 4.2% of GDP in 2001/02 to 3.8% in 2002/03, before increasing again to an estimated 4.1% of GDP in 2004/05. Allocations to operations and maintenance have increased continuously from 5.9% in 2001/02 to 6.5% of GDP in 2004/05.

MDG 1: ERADICATING EXTREME POVERTY AND HUNGER

The main objective of Target 2 of the MDG-1 on Poverty and Hunger MDG is to reduce the population who suffer from hunger by half by the year 2015. Between 1963 and 1982, agriculture GDP recorded high growth rates of 4% and above per annum but declined significantly thereafter to reach around 1% in the last one and half decades. The factors that impacted negatively on agricultural growth included: (a) mismanagement of farmer support institutions that affected the areas of marketing, credit, seeds, and farm inputs; (b) dumping of agricultural commodities, such as dairy, maize, and sugar in the local market; (c) depreciation of the Kenya shilling resulted in large increases in the cost of imported agricultural inputs; (d) reduction in donor support reduced resources available for investment in agriculture; and (f) decline in budgetary allocation to the agricultural sector.

The government has formulated two strategy papers relevant to food security/hunger reduction: the ERS and the Strategy for Revitalization of Agriculture (SRA) 2004-2014. The SRA estimated annual budget of KShs 13.5 billion (US$ 168.75 million) is based on the traditional activities and budget lines of the Ministries of Agriculture and Livestock and Fisheries, namely, research, extension, credit and rural development. It does not address other programmes of hunger reducing actions envisaged in the Hunger MDG such as school feeding programmes and food-for-work, hence the need to provide additional resources to supplement the budget in SRA.

The strategies to increase agricultural productivity include investing in soil health (mineral fertilizer, organic manure and soil conservation), small-scale water management (smallholder irrigation, livestock water), improved seed, agricultural extension (gradually moving away from actual delivery of extension messages to a supervisor/facilitator to other providers), and agricultural research.

The interventions for rural income generation include storage, livestock (smallholder dairy livestock keepers, and pastoralists), credit and rural financial services, farmer associations and community-based farmer training centres, food/cash for work programmes (use of labour intensive methods for development of infrastructure), and development of smallholder markets (catalysing the formation of producer and processor groups, market promotion and development e.g. encouragement of value adding, on-farm storage, and processing).

The nutrition interventions include children under five years, school meals, pregnant women and lactating mothers, supplemental feeding for vulnerable groups, elderly people, emergency feeding assistance (to support emergency situations such as drought, floods, fires and internal displacement), and capacity building for food security and nutrition (including development of a nutrition policy that is not embedded in food policy).

To achieve the hunger reduction Goal, the Government will meet the cost of infrastructure, farmer support services and social welfare programmes; while smallholders will pay for materials and services directly benefiting them, such as fertilizers, improved seed, AI and credit. Government should ensure farmer access to inputs and services at affordable rates. Out of the total investment, farmers will pay $966 million (12%) and the government $7,285 (88%).

MDG 2: ACHIEVING UNIVERSAL PRIMARY EDUCATION

The Millennium Development Goal on education is to ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary

schooling. Apart from Universal Primary Education (UPE), Goal 3 aims to eliminate gender disparity in primary and secondary education by 2005 and at all levels of education by 2015.

The introduction of FPE in January 2003 has led to significant educational achievements. Enrolments in public primary schools increased significantly from 5.9 million in 2002 to 6.9 million in 2003; representing a Gross Enrolment Rate (GER) of 99% (102% girls; 97% boys). Despite this performance, primary education continues to experience a number of challenges, such as overstretched facilities, overcrowding in schools (especially those in urban slums and ASAL areas), high pupil-teacher ratios, high cost of equipment for children with special needs, diminished support by communities, gender and regional disparities, increased number of orphans in and out of school as a result of HIV/AIDS, poor management, and internal inefficiency that negatively impacts on access, equity and quality. In addition, most parents are under the impression that it is the Government's exclusive responsibility to provide all the necessary resources to support the primary education sub-sector.

In order to address the above challenges, the Government is already undertaking certain measures such as providing additional support to low-cost boarding schools in ASALs; providing special capitation grants for special education; providing support to NFS institutions offering the primary school curriculum in slum areas; mobilizing resources from development partners in support of the FPE initiative; and improving school health and nutrition in collaboration with the Ministry of Health.

The current heavy investment that is borne, to a large extent, by the Government alone, calls for a review to ensure collaboration and partnership with other stakeholders. In view of the large public finances required for basic education, there is need for increased participation by the private sector in the provision and expansion of education, particularly at the secondary, TIVET and university levels.

The new programmes proposed are mainly in support of primary level education aimed at improving quality, equity and access. At the same time, there is need for support for ECDE and secondary level education in order to respond to the increased numbers going into primary level from ECDE level and coming from primary education to secondary. In order to cope with the expected enrolments at secondary school level due to the FPE initiative, and Government's policy of increasing transition rates from primary to secondary, there will be need for enhanced public funding in secondary education, and for the Government to fund investments that have previously been the responsibility of the non-government sector.

Other proposed investment programmes will entail investing in crosscutting issues such as HIV/AIDS, capacity building, quality assurance and standards, ICT, and monitoring and evaluation. Under HIV/AIDS, the activities will include sensitising students, teachers and the community and an education support programme for HIV/AIDS orphans.

MDG 3: GENDER EQUALITY & EMPOWERMENT OF WOMEN

The Millennium Development Declaration commits member countries to promote gender equality and the empowerment of women as effective ways to combat poverty, hunger and disease and to stimulate development that is truly sustainable. The national development framework puts the key pillars as investment in the agricultural sector and heavy reliance on the private sector within a liberalized market. Those sectors dominated by women and the poor are at the periphery of the economy and have meagre investment resources.

Gross gender inequalities persist due to prevailing discriminatory practices, leading to inequality in opportunities, wage/employment, ownership of property, and access to education and training. Overall, women continue to have less access to social services and productive resources than men. Women remain vastly underrepresented in parliament and local authorities and account for 8.3% of the seats in the National Assembly. In the recent past, the Government has appointed women to key positions, but this is still below expectations. There are also large wage gaps and only a small proportion can be explained by gender differences in education, work experience or job characteristics.

The success of reproductive health policies was reflected in fertility declines from a total fertility rate of 8.0 children in 1977 to 4.7 children at the turn of the century. However, there has been an increase in infant, child and maternal mortality in the last one and half decades. The earlier gains are being eroded, leading to increased fertility and reduced life expectancy for both males and females. Other challenges facing women include:

Box 1.1:Some challenges facing women

- Increasing maternal mortality in the last decade, due to inadequacies and/or deficiencies in implementation of reproductive healthcare e.g. only about 42% of pregnant women have births attended to by skilled personnel, and adolescents and youth lack appropriate information and services to respond to their reproductive health needs.
- High prevalence of HIV/AIDS and the associated burden on women due to their multiple roles as mothers, heads of households, as providers of care in the family, and in the community in general.
- Low enrolment and high drop out rates in schools for girls due to customary

The Government has put in place strategies to address most of the challenges above. For instance, marked progress has been made in increasing women's participation in leadership and decision-making (e.g. in Parliament, the public service including the judiciary, the police force and the local authorities). The free primary education programme has also accorded equal educational opportunities to boys and girls, resulting in almost gender parity in primary school enrolment. The Ministry of Justice and Constitutional Affairs has included gender in its strategic plan under the Governance, Justice, Law and Order Sector (GJLOS) Reform Programme to make the formal justice system more accessible to the poor and women and strengthen informal/traditional justice system, including removing gender discriminatory aspects and strengthening linkages and crossover between the two systems. The National Plan of Action for Elimination of Female Circumcision, launched by the Ministry of Health, will assist in the implementation of the provision in the Children's Act outlawing female genital mutilation (FGM).

A wide range of interventions, coverage targets and costs has been proposed and fall under the five main categories: (a) social mobilization, awareness creation and sensitisation; (b) institutional strengthening and programme implementation; (c) lobbying and advocacy for gender sensitisation; (d) building coalitions and mobilizing support for policy development, law reform, enactment and implementation; and (e) research, information, monitoring and reporting. The strategies for mobilizing necessary resources should focus on increased budgetary allocations to the Ministry responsible for gender, budgetary allocations in the sector Ministries towards activities for mainstreaming gender within sectors, and the balance from international development partners as part of their commitment to the Millennium Declaration. Most Kenyan households are experiencing abject poverty, whose prevalence is higher among women, and should not therefore shoulder a big burden in the implementation of the recommended actions.

MDG 4: REDUCING CHILD MORTALITY

Goal 4 aims at reducing child mortality and the target is to "reduce by two-thirds, between 1990 and 2015, the under five mortality rate". Infant and childhood mortality declined rapidly in Kenya between the 1970s and the 1990s. But diarrhoea and the six target infectious diseases are still leading causes of disability and death among children. Immunization rates slipped in Kenya during the late 1990s. Children aged 12-23 months receiving full vaccination against vaccine preventable diseases fell from 65% in 1998 to 60% in 2003. The majority of these deaths result from five diseases – acute respiratory infections, diarrhoea, measles, malaria, and malnutrition. To reduce these unnecessary child deaths, the Government implemented the Integrated Management of Childhood Illnesses (IMCI) strategy, which combines better management of childhood illness with nutrition, immunization, maternal health, and other health programmes.

The major challenge in reduction of child mortality is the continued increase in mortality rates since the 1990s in all regions of the country. There is inequity in access to health care services while the cost of accessing health care is high especially for the poor. The opportunity is that the Ministry of Health is endeavouring to strengthen programmes that are currently supporting child health. These include Kenya Expanded Programme of Immunization (KEPI), Control of Diarrhoeal Diseases and Acute Respiratory Infections, Nutrition, STI/HIV/AIDS, and Malaria.

Effective low cost interventions available can prevent at least 2/3 of child deaths. Some of these interventions are preventive such as breastfeeding, use of insecticide-treated materials, complementary feeding, zinc and vitamin A supplementation, improved delivery procedures, and immunization. The curative aspects include treatments such as oral rehydration therapy, antibiotics for sepsis and pneumonia, anti-malarials and newborn resuscitation. In addition, lack of improvement in child health indicators may be attributed to the risk of mother-to-child HIV transmission coupled with other contextual HIV/AIDS and poverty synergies. The key child health service is therefore to scale up IMCI to cover all areas.

The costing package comprises seven different components: maternal health, child health, HIV/AIDs prevention and care, malaria prevention and care, TB treatment, and the health systems. The total cost for intervention and treatment for children in the period 2005-2015 is approximately US$ 274,698,176 (includes intervention, treatment and personnel costs). These costs however exclude the rehabilitation of the facility structures and construction of new ones, research and training. The interventions for both maternal and child health are essential and should not be financed by user fees as this discourages the poor from accessing the required services. The investments must therefore come from the public spending and/or other donor funding.

MDG 5: IMPROVING MATERNAL HEALTH

Target 6 of the Millennium Development Goal 5 states that a three quarter reduction in maternal deaths should be achieved by 2015. The measurement for this reduction is the maternal mortality ratio and the proportion of births attended to by skilled health personnel.

It is estimated that maternal mortality per 100,000 was 414 in 2003. Approximately 14,700 women of reproductive age die each year due to pregnancy-related complications; while between 294,000 and 441,000 suffer from disabilities caused by complications during pregnancy and childbirth.

There is need to address challenges related to direct obstetric causes of maternal mortality such as haemorrhage, sepsis, complications arising from unsafe abortion, eclampsia, etc and indirect obstetric causes such as malaria, anaemia, TB and HIV/AIDS. Maternal deaths can also be prevented with existing health knowledge and technology. Women and their families and communities need to be able to recognize the symptoms of complications and have access to medical care when complications arise.

Addressing the needs of the adolescents will be quite challenging since majority of the cases arise from this group. Adolescent mothers have more elevated risk to experience premature labour, miscarriage and still birth and are four times more likely to die from pregnancy-related causes. Programmes therefore need to also pay attention to reproductive services to young people. Key targets are providing education, stopping FGM, and promoting education and communications about the benefits of delaying onset of marriage and childbirth.

Gender roles significantly affect maternity care. When complications of pregnancy and childbirth develop, women are often not able to make decisions about their care. This places male family and other community members as decision makers. In addition, increased medical coverage of deliveries, through additional skilled staff and service points, are basic requirements for improving delivery care. Reliable supply lines and staff retraining programmes are also critical. There is also need to improve post-abortion care.

The required cost between 2005 and 2010 would be US$ 36,167,263. There is need for more accelerated investment in the initial years so as to meet the target.

MDG 6: COMBATING HIV/AIDS, MALARIA AND OTHER DISEASES

Tuberculosis, HIV/AIDS and malaria are the leading causes of morbidity and mortality in Kenya. The three diseases also have a disproportionate impact on women and children. For women, this is mainly due to underlying socio-cultural factors such as the burden of household responsibilities they have to bear, including care for the sick.

PART 1: HIV/AIDS

The target is to have halted by 2015 and began to reverse the spread of HIV/ AIDS. According to National AIDS Control Council, there are more than 3 million people currently infected with HIV/AIDS; and more than 2 million have so far died of AIDS-related complications, leaving behind over 1.5 million orphans. Several millions of children are living with parents who are ill, often becoming the primary care givers for their parents, young siblings and other dependants. Over 60% of those infected live in the rural areas where the socio-economic conditions are worsening due to poverty and unemployment. This has strained the already inadequate and ill-equipped health facilities with over 50% of public hospital beds being occupied by patients with HIV/AIDS related infections.

Kenya launched a National HIV/AIDS Strategic Plan 2000-2005 in December 2000, mainly focusing on behaviour change. The establishment of the National Aids Control Council (NACC) in the Office of the President and NASCOP in Ministry of Health provided the national institutional framework for liaison and coordination of activities to combat HIV/AIDS. The establishment of Constituency HIV/AIDS Committees has added yet another layer in the fight against the pandemic.

For the health sector to effectively respond to the pandemic there is need for more resources to be channelled to innovative interventions such as expanding early diagnosis and including counselling on behaviour change to reduce the spread of HIV. Though most people in Kenya are aware of the nature and transmission of HIV/AIDS, the challenge has been to translate this awareness into preventive behaviour among the sexually active and high-risk populations.

The needs assessment include prevention, care and treatment, and orphan support. The prevention interventions include youth intervention, public sector condom provision, condom social marketing, mass media coverage, blood safety, safe injections, STI management, voluntary counselling and testing, prevention of mother to child transmission, universal precautions (health facilities and personnel), orphan care and support, and policy/administration/research/M&E. The variables for care and treatment model are care, palliative care, diagnostic testing, treatment of opportunistic diseases, prophylaxis for opportunistic infections, laboratory tests for ARV therapy, antiretroviral therapy, training, and nutritional support.

The total cost is estimated to be about US$ 7,823,481,000. Out of this 71% goes to provision of Care and Treatment while the rest (29%) goes to Prevention of HIV/AIDS. More than half (54%) of the resources required for Care and Treatment goes to provision of antiretroviral drugs while 23% is taken up by laboratory tests. Laboratories should also be provided and equipped with the necessary equipments to monitor the patients on ARVs treatment. The costs of prevention include youth programmes in secondary and primary schools, and training of teachers; and youth programmes to encourage behavioural change.

PART 2: MALARIA

Out of Kenya's population of over 30 million, 70% (20 million people) live in malaria prone areas and are at risk of infection. Each year, an estimated 6,000 pregnant women suffer from malaria-associated anaemia, 4,000 babies are born with low birth weight as a result of maternal anaemia and 34,000 children below the age of five years die from malaria.

The overall goal of the National Malaria Strategy (NMS) is to reduce the level of malaria infection and consequent deaths in Kenya by 30% of the current levels (2001) by the year 2006 and to sustain that improved level of control to 2010. Four strategic approaches outlined in the NMS, including the use of insecticide-treated nets by at-risk communities, are consistent with MDG targets. These are further refined by the target of 60% of the at-risk population will sleep under nets and at least 50% of these nets will be regularly treated with insecticides.

The Kenya Government adopted the Roll-Back Malaria (RBM) strategies for its burden of disease. These strategies are clinical management by providing effective and prompt treatment of cases; management of malaria and anaemia in pregnancy; vector control using insecticide-treated nets and other methods; and epidemic preparedness and response. If there is consistent achievement of targets for 2006 and 2010 as intended, the chances for meeting the malaria target for 2015 remain high. It is envisaged therefore that scaling up of current activities will be of great importance.

Government policy with regard to pregnant women living in malaria prone areas is to ensure access to: (a) two free SP treatment doses, one in the second trimester of pregnancy, one in the third trimester, or other prophylactic drug regimen which may evolve; and (b) effective community-based communication to encourage prompt treatment for fever.

The Global Fund for HIV/AIDS, TB and Malaria control has tentatively approved the 4th round application for Kenya, which includes the distribution of over 3 million Long Lasting Impregnated Nets (LLINs) as part of an integrated immunization campaign beginning August 2005. To tackle the problem of low re-treatment rates,

LLINS will be introduced in order to achieve meaningful reduction in malaria morbidity and mortality in Kenya. The campaign combines increased coverage of ITNs and measles campaign.

Malaria costing has been calculated based on the Global Fund Model (in addition the August 2005 integrated campaign cost projections have been added). The resource requirements for scaling up ITNs are projected to increase from US$ 21,682,078 in 2005, 25,135,473 in 2010, and 28,963,453 in 2015. The cost of carrying out the integrated campaign in August 2005 is estimated at US$ 17,083,629.81, distributed between purchase of ITNs for distribution to selected districts (15,033,266.83), distribution of ITNs/logistics (1,670,362.98), monitoring and evaluation of ITN coverage and use (320,000.00), and social mobilization and IEC materials (60,000.00). This cost is part of the overall ITN requirements.

PART 3: TUBERCULOSIS

Kenya is experiencing a generalized TB epidemic that still affects the young economically productive age groups (15-44 year age group). In recent times, TB cases have more than doubled, mainly due to the impact of the HIV/AIDS pandemic. In 2003, a total 96,000 TB cases of all forms were notified compared to 82,000 in the previous year.

The Millennium Development Goal for tuberculosis relate to reduction in prevalence and death rates associated with tuberculosis. One way of doing this is through targeting TB patients co-infected with HIV to have increased access to ARVs. Such efforts should also seek to improve case detection and treatment success rates for infectious TB cases through Directly Observed Treatment Short Course (DOTS) and expansion initiatives such as decentralization of TB services including community TB care.

The Ministry of Health is implementing internationally recommended TB DOTS Strategy for TB control countrywide. It is also actively pursuing the WHO/UNAIDS "3 by 5" Initiative to contribute to reducing HIV/AIDS related morbidity and mortality. The bulk of TB control services are provided through the public sector. The Ministry of Health has continued to provide most of the resources including approximately 25% of all anti-TB drugs. Overall, the TB control strategies appear consistent with the target of the MDGs. With these initiatives in place, the concern is not whether the country has the framework necessary for putting in motion activities that will meet the MDG targets for TB but rather the availability of necessary resources and logistics to translate intention to action.

The cost for TB interventions includes human resources, infrastructure and equipment, training, commodities and products, planning and administration, and monitoring and evaluation. The resource requirements for ARVs are under

HIV/AIDS, although availability of ARVs is likely to reduce the risk of contracting opportunistic infections like TB. Based on these interventions, assumptions have been made that initially the cost will be high but will decrease after 2010 due to increased awareness coverage and availability of drugs.

The Ministry of Health has, through the NLTP, a current medium term strategic plan for TB that is being implemented. The Global Fund has provided additional funds that complement the funds from the government and other partners thereby substantially improving the financing to control TB in Kenya. New funding (including to finance gaps identified after earlier rounds) is being negotiated from Global Fund to allow scaling up of activities countrywide to include hard to reach districts. The projected funding requirements for HIV/AIDS are US$ 6,684,981,000, 415,024,447 for malaria, and 55,404,979 for tuberculosis.

PART 4: STRENGTHENING SERVICE DELIVERY SYSTEMS

The MDGs do not specifically deal with strengthening of health systems. Yet past experience with development programmes in the health sector shows that while it is technically possible to deliver interventions vertically, the successful scale-up and utilization of a broad range of health interventions requires a functioning health system. The main components of a functioning health system include health human resources (including clinical and administrative staff) and infrastructure; and management capacity in the system.

The country has a total of 4,421 health facilities (500 hospitals, 611 health centers and 3,310 sub-centers/dispensaries). Of these facilities, the government is the largest provider of health care. This means that each health facility serves 6,887 people, while the hospital to population ratio is 1:60,000. There are 57,208 registered medical personnel. The ratio of medical personnel to 100,000 people is 188.2. Only 25% of Kenyans have access to health facilities within 8 kilometres. Health expenditure in rural areas account for 30% of the government spending on health while urban areas account for 70%, yet only 20% of Kenyans live in urban areas.

Quality of care is low particularly in government-run facilities because of lack of supplies/stocks. The government's annual budget for health is approximately KShs 24.4 billion of which about 10% is spent on drugs. Government per capita expenditure on health care declined in real terms from US $10 in the 1980s to around US$ 3 in 2003/2004. The utilization of the health facilities is low probably due to high cost of health care coupled with poverty and the effect of user fees.

MDG 7: ENSURING ENVIRONMENTAL SUSTAINABILITY

Goal 7 of the MDGs on ensuring environmental sustainability has two components: to integrate principles of sustainable development into country policies and

programmes, and to reverse the loss of environmental resources. While the first component can be addressed by an intervention on policy and legislation, the second component entails several interventions that target root causes. For example, two broad root causes responsible for loss of environmental resources are those related to population and its over-exploitation of resources; and those related to irresponsible behaviour that result in discharge of pollutants into the environment. In order to address the root causes responsible for loss of environmental resources, Target 9 must be implemented in concert to existing synergies with the other MDG Goals and Targets.

Interventions and their targets are organized around five thematic problem areas: developing a participatory national environment framework, fisheries and other aquatic ecosystems, forests and other terrestrial ecosystems, wildlife, and community actions in market-based development.

The interventions under the National Environment Framework include putting in place an effective policy and legal framework for the conservation and management of the environment and natural resources; developing a national environmental accounting and valuation system with a view to integrating environmental considerations with the national planning process; and environmental management and enforcement of guidelines, regulations and standards.

The interventions on fisheries target the environmental aspects of fisheries and aquatic ecosystems (fresh water inland lakes, river systems, wetlands and the Indian Ocean). The four sets of interventions include ensuring sustainable utilization of aquatic products; monitoring of pollution and restocking depleted lakes and rivers with fish; active and positive community participation in the management and conservation of Kenya's fisheries and other aquatic ecosystems; and to restore the biological functions of degraded fisheries and other aquatic ecosystems.

To forestall land degradation, there is need for communities themselves to bear the establishment and management costs, while the Forest Department's (FD's) role will be to facilitate and support development and effective and efficient functioning of markets for on-farm wood and non-wood products. This is also closely related to interventions on promoting on-farm tree establishment and management, and forests and other terrestrial ecosystems (management and conservation of indigenous forests, forest plantations, forest research and wildlife management beyond ministerial and departmental boundaries).

The needs assessment is comprised of two types of interventions: those whose cost and implementation is to be met by the private sector, and those whose implementation resources are sought. A gross total of KShs 138.9 billion is needed for the period 2005-15, which distributed equally result in an annual investment of KShs 7 billion starting 2005 and peaking to KShs 11.3 billion in 2015.

Although the budgeted resources are large, some of the interventions will not require financing from the central government, for example, on-farm tree planting. More than 50% of the budgeted resources will come from the communities (in the case of on-farm tree planting), private sector, civil society, development partners, and an innovative arrangement that will see the Ministries commit resources for environmental sustainability.

PART 1: WATER AND SANITATION SERVICES

A target for Millennium Development Goal 7 on environmental sustainability is "to halve by 2015 the proportion of people without sustainable access to safe drinking water and sanitation services". Access to safe water is currently estimated at 89.7% in urban areas and 43.5% in rural areas, or a national average of about 57%. In addition, about 81% of the population has access to safe sanitary means, with 94.8% in urban areas and 76.6% in the rural areas. However, access to safe water supply and sanitation varies greatly from region to region and with considerable disparities within regions. To achieve the MDGs in the water and sanitation sector, the people without access to safe water and improved sanitation need to be halved, which translates to 80% nationwide coverage of safe water supply (urban 96% and rural 66%) and 96% coverage of improved sanitation (urban 96% and rural 89%).

The interventions adopted from the Millennium Project Model include (a) water supply access through household connections, public stand posts, boreholes with hand pumps, rainwater collection (roof catchments), and protected dug wells; and (b) sanitation access through conventional sewerage, septic tank, pour flush toilet, ventilated improved pit latrine, and improved pit latrine. In addition to the MDG generic interventions, the country interventions proposed include capacity building at Kenya Water Institute (KEWI), operationalization of water sector institutional reforms, catchments conservation and management, flood mitigation and management, increase of freshwater storage capacity, strengthening of hydrological monitoring network, ASAL development and land reclamation, water for food production (irrigation), and public awareness campaigns on efficient water use, catchments conservation and sanitation.

It has been estimated that the country needs KShs 236.878 billion (US$ 3.0 billion) by 2015 to meet the MDG for provision of water and sanitation services. This estimate has been generated from the MDG Model with the generic interventions adopted for the country (KShs. 65.33 billion) and the country-specific interventions amounting to KShs 171.548 billion. The average annual investment on the MDG Model interventions during 2005-2015 will be about KSh. 5.94 billion.

PART 2: LIVING CONDITIONS FOR SLUM DWELLERS

Goal 7, Target 11, sets to achieve significant improvements in the lives of slum dwellers while deterring new slum formation. The process of urbanization in Kenya is still an evolving phenomenon. However, it has proceeded at a tremendous pace over the past four decades, especially after political independence in 1963. By 1999, the proportion of the urban population had increased to 34.5%, and is expected to increase to 50% by the year 2015.

The evolution of policies and interventions dealing with informal settlements in Kenya fits in four stages, namely: provision of minimum services, extension of tenure security and physical upgrading, recognition of the legitimate role of low income settlers and other stakeholders in urban development, and lately the formulation of a comprehensive national slum upgrading programme under the Kenya Slum Upgrading Programme (KENSUP).

The Upgrading entails causing systematic improvement of living and working conditions for people in slums and informal settlements with minimal displacement. It involves securing land tenure, rehabilitation of existing housing structures, development of housing where necessary, planning and provision of social and physical infrastructure, and improving livelihoods through income generating activities. Due to acute prevalence of the HIV/AIDS, addressing the pandemic is also a crucial element in the settlement improvement process. Initially the programme is to cover the towns of Nairobi, Mombasa, Kisumu and Mavoko, and generally will entail participatory planning and implementation.

The National Housing Policy proposes the facilitation by the Government of the delivery of 150,000 housing units per year for the next five years in order to adequately address the acute shortage of housing in urban areas. The quality of a further 300,000 housing units will be improved annually to address poor housing conditions in the rural areas.

Out of the 150,000 units in urban areas, 45,000 (30%) may be met under the upgrading of slums and informal settlements. The new household formations between 2005 and 2015 are estimated at 615,288, or about 60,000 per annum. When this is added to the 150,000 housing required to clear the current backlog, the aggregate housing need for urban housing over the next 10 years is 210,000 housing units annually. Given the 30% target set in the National Housing Development Programme, the annual requirements for slum upgrading is 63,000 per year. The estimated average cost per housing unit during 2005-2015 is KSh 340,575, taking into account inflation.

PART 3: THE ENERGY SECTOR

The MDGs cannot be achieved without provision of sustainable, affordable and appropriate energy at all times. Indeed, supply of adequate and affordable types of energy for growth and development is the central theme of the Government's energy policy. The proposed interventions include biomass energy (fuel wood supply strategies, charcoal conservation strategies mainly through improved cookstoves), petroleum products, electricity, promoting mini-hydros, biogas, and institution strengthening to promote sustainable energy supply (coordination of different authorities on energy, energy research and development).

Total energy investment amounts to Ksh 771,586.8 million over the 10-year period. However, the model presented for the MDGs is not adequate for analysing energy requirements as it is not responsive to key variables in assessing energy needs e.g. agro-ecological zones particularly in the use of biomass, the proportion of people using particular energy, and the mix of energy used by households under varying income levels and season of the year. It is therefore recommended that a model capturing all the major energy types, biomass, electricity and petroleum products be developed urgently for local use and applied for future planning.

MDG 8: GLOBAL PARTNERSHIPS AND OTHER REQUIREMENTS

There are some thematic areas that did not form part of the needs assessment studies under the MDG project, but are important and constitute the framework crucial to the achievement of the Millennium Development Goals. Broadly, they include infrastructure, service delivery mechanisms and governance (especially public expenditure management), science and technology, trade and industry, the international trade and aid environment, and security.

Kenya has a large road network of about 195,000 km long, about 6% of which is paved. A significant part of the network has fallen into disrepair and neglect during the past decade. Funding for the maintenance of classified road network has been through the Road Maintenance Levy Fund (RMFL) and Roads 2000 programme, which has been inadequate. About 150,000 km of road would require upgrading or reconstruction annually until the entire network is in a maintainable condition.

The ERS estimates that about KShs 19 billion is required to reduce the share of classified roads in poor condition from 43% to 20%. This is equivalent to KShs 220 billion over the period 2005-2015, which is a conservative estimate based on current budget constraints. Additional funding would be desirable to upgrade heavily trafficked unpaved roads. Other measures the government is taking include updating the roads design manual to include the latest technology in both design and construction. This can be applied in, for example, the recently proposed concrete pavement construction, which is more durable and less costly to maintain.

It is estimated that the road sector requires at least KShs 45 billion to rehabilitate classified roads to maintainable standards. It is only after that state has been achieved that about KShs 9.4 billion may be sufficient for normal maintenance. Capital investments are estimated at least KShs 19 billion per annum. The rail transport requires KShs 18 billion to rehabilitate the system countrywide, while KShs 1.7 billion is required annually to rehabilitate airports and improve their security systems. The improvement and maintenance of maritime transport is estimated to cost Kshs 3 billion per annum. The construction and rehabilitation of jetties at the Kenyan coast and inland lakes is estimated to cost KShs 1.7 billion.

The expansion of the information and telecommunication services that includes e-government and other priority projects is estimated to cost KShs 8 billion annually while the improvement of the weather monitoring capabilities and early warning systems will cost KShs 7 billion per year. Trade, tourism and industry activities are likely to cost KShs 8.5 billion annually.

The Government enacted two major pieces of anti-corruption legislation: The Anti-Corruption and Economic Crimes Act, 2003 and the Public Officer Ethics Act, 2003. The Public Audit Act, 2003, has been enacted, while other instruments such as the Public Procurement and Disposal Bill, 2003, the Privatization Bill, 2004, and the Government Financial Management Bill, 2003 are at various stages of debate in Parliament.

The Government launched a "Strategy for Performance Improvement in the Public Service", in April 2002. The objective of this reform area is to introduce Results Oriented Management (ROM) in the public service with an aim of improving quality, efficiency and effectiveness of services and performance on a continuous basis. This involves undertaking service delivery surveys in ministries/departments; developing service delivery standards, benchmarks and charters; introducing annual work plans, and work improvement teams; reviewing staff performance appraisal; and introducing merit-based promotion and performance contracts in the public service.

Other measures have included the establishment control and management of the payroll, introduction of information technology in the public service, and decentralization. In an effort to control and arrest payroll fraud, the Government has developed the Integrated Payroll and Personnel Database (IPPD) system. There have also been measures to deepen fiscal decentralization.

In addition, changes to the Parliament's Standing Orders made in 1997 established departmental committees, and required that these committees review legislation. By 2001, the initiative for policy change had shifted to Parliament's committees. These Committees are playing an increasing role in instilling discipline in the management of public affairs, and have the capacity to prevent mismanagement of public funds before it happens and thus are useful in the fight against corruption.

SUMMARY OF PROPOSED INTERVENTIONS AND THEIR ESTIMATED COSTS

Table 1: Summary of costs of achieving the millennium development goals (us$ million)

Interventions	Annual Expenditure	2005-2015
HUNGER		
Agricultural Productivity	291	3,201
Rural Income Generation	195	2,143
Nutrition Interventions	248	2,729
Capacity Building	41	451
SUB-TOTAL	854	8,525
EDUCATION		
ECDE	3.3	37
Primary Education and Mobile Schools	109.1	1201
Secondary Education	51.4	566
Adult Basic Education	4.3	47
HIV/AIDS	29.1	320
Special Education	7.4	81
Capacity Building	8.7	95
Quality Assurance and Standards	5.9	65
Non-Formal Schools	0.4	4
School Feeding, Health and Nutrition	18.7	206
Monitoring and Evaluation	0.1	1
Administrative and Teachers Costs	122.5	1347
SUB-TOTAL	360.9	3,969
GENDER		
Mobilization	18.5	203
Institutional Strengthening	52.3	575
Lobbying and Advocacy	24.1	265
Build Coalitions and Mobilize Support	62.5	687
Research, Information & Monitoring	26.1	287
SUB-TOTAL	183.4	2017
MATERNAL CHILD HEALTH AND HEALTH SYSTEMS		
Maternal Health Care	5.9	65.2
Child health (includes intervention, treatment and personnel costs)	25.0	274.7
SUB-TOTAL	30.9	339.9

HIV/AIDS, MALARIA AND OTHER DISEASES		
Care And Treatment Of HIV/AIDS	506.1	5,567.5
HIV/AIDS Prevention	205.1	2,255.9
Malaria Treatment, Prevention & Administration	37.7	415.0
TB (Treatment, Prevention, Facilities & Administration)	5.4	59.6
SUB-TOTAL	754.4	8,298
ENVIRONMENT		
National environment framework	1.6	18
Fisheries and Other Aquatic Ecosystems	2.6	29
Community incentives in land degradation	35.0	385
Forests and other terrestrial ecosystems	35.6	392
Wildlife management and conservation	10.8	119
SUB-TOTAL	85.7	943
ENERGY		
Administrative Strategies	97.2	1,069.5
Fuelwood Supply Strategies	28.7	315.3
Charcoal Conservation Strategies	17.8	195.7
Petroleum Products	203.9	2,243.3
Electricity	271.7	2,988.5
New and Renewable Energy	257.5	2,832.5
SUB-TOTAL	876.8	9,644.8
WATER & SANITATION (Excluding costs not in the MDG Model)		
Provision of Rural Water	15.1	166.0
Provision of Urban Water	34.3	377.0
Provision of Rural Sanitation	4.4	48.6
Provision of Urban Sanitation	17.2	189.6
Waste Water Treatment	1.7	18.8
Hygiene Education	1.5	16.6
SUB-TOTAL	74.2	816.6
SLUMS IMPROVEMENT		
Enabling Environment for Accessing Land & secure Tenure	1.1	12.5
Upgrading and Deterring New Formations	893.2	9,825.0
Integrated Urban Planning	6.8	75.0
Capacity Building for Stakeholder Participation	5.0	55.0
Integrated Communication Framework	1.1	12.5
SUB-TOTAL	907.2	9,980.0
MDG – OTHER ENABLING SECTORS		

Roads	917.0	10,087.5
Railways	225.0	2,475.0
Maritime Transport	37.5	412.5
Jetties	25.0	275.0
Information and Communication	100.0	1,100.0
Meteorology	87.5	962.5
Trade and Industry	106.3	1,168.8
SUB-TOTAL	1,498.3	16,481.3
GRAND TOTAL	**5,546.7**	**61,014.6**

CHAPTER 1

INTRODUCTION

1.1 Kenya and Its People

1.1.1 Geography

Kenya is situated in the Eastern part of the African continent. The country lies between 5 degrees north and 5 degrees south latitude and between 24 and 31 degrees east longitude. It is almost bisected by the equator. Ethiopia and Sudan border it to the North; Uganda to the West; Tanzania to the South; Somalia to the northeast; and Indian Ocean to the southeast. The coastline is about 536 kilometres.

The total land area is about 582,650 km^2 of which 569,250 km^2 constitutes dry land while water takes the rest of about 13,400 km^2. Approximately 80% of the land area is arid or semi-arid, and only 20% is arable.

The country has diverse physical features, which are a major source of tourist attraction. These include: vast plains which are home to world famous game parks and reserves; the Great Rift Valley, which runs north to south and whose floor has provided potential for geothermal power generation; Mount Kenya, the second highest mountain in Africa at about 5,199m above sea level; Lake Victoria, the largest freshwater lake on the continent supporting a major fishing industry in the East Africa region; Lake Nakuru, a major tourist attraction because of its flamingos; Lake Magadi, famous for its soda ash; and a number of major rivers, including Sondu-Miriu, Tana and Athi, which generate the hydropower resources of the country; Yala, Nzoia and Mara, the major feeders into Lake Victoria.

The disparity in rainfall amounts and distribution has a significant effect on the country's capacity for economic production. Many parts of the country cannot produce adequate food from rain-fed agriculture, and are therefore exposed to

frequent hunger. The arid and semi-arid lands depend mainly on livestock production; which is frequently adversely affected by drought.

1.1.2 Demographic and Poverty Situation

Currently, the country's population is about 32 million people, 75-80% of whom live in the rural areas. The population distribution varies from 230 persons per km^2 in high potential areas to 3 persons per km^2 in arid areas. Only about 20% consists of high to medium potential agricultural land, and supports 80% of the population. The remaining 20% of the population lives in the 80% of the land, which is arid and semi-arid.

Kenya is faced with a high dependency burden, with over 50% of the population below 15 years of age. This has resulted in high dependence ratios placing high demands on social services such as primary education and health care. However, the inter-censal population growth rate declined from 3.9% per annum during 1969-79 to 2.9% during 1989-99. The country's population is characterized by high mortality rates, low and declining life expectancy, slightly increased fertility rates (from 4.7 children per woman in 1995-1998 to 4.8 in 2000-2003), high infant mortality and death rates, and declining population growth rates (which could be attributed to the HIV/AIDS pandemic). All these reflect the enormous challenges to be expected in achieving the MDGs.

The population in absolute poverty was estimated to be 44.7% in 1992, 52% in 1997, and 56% by 2002.

1.1.3 Political Governance

For administration purposes, the country is divided into eight provinces, namely, Central, Coast, Eastern, Nairobi, North Eastern, Nyanza, Rift Valley and Western. These provinces are further sub-divided into districts and divisions. The country has one national assembly with 210 elected and 12 nominated Members of Parliament (MPs).

Kenya has an active multi-party democracy with a growing number of political pressure groups in the areas of human rights ,labour unions and religious groups, non-governmental organizations(NGOs) and international organizations, among others. The challenge is to translate this political space into a positive environment that would contribute to human development.

1.2 Macroeconomic Situation

1.2.1 Introduction

The Kenyan economy has been characterized by stagnation in economic growth in the last two decades. Between 1997 and 2002 the economy grew by an annual average rate of only 1.5%, below the population growth estimated at 2.5% per annum, thus leading to a decline in per capita incomes. Among the key reasons for the economic decline:

Box.1.1: Reasons for Kenya's economic decline

- Weak implementation capacity in the public service leading to a completion rate as low as 3% for major development projects;
- Low levels of donor inflows such that between 1997 and 2003, the annual per capita average was US $ 0.75, compared to Sub-Saharan Africa ODA average of US$ 20. Declining ODA was occasioned by donor perceptions that Kenya was a reluctant reformer and that the governance situation was worsening. This decline in ODA levels seriously affected the pace of development in the country, as the development budget was highly dependent on external support;
- Exogenous shocks, including droughts and deteriorating external environment. In 2000 and 2004, Kenya suffered severe droughts and famine that hampered the performance of the productive sectors, particularly agriculture and manufacturing. Due to the decline in food production, budgetary resources were diverted to famine relief, thus interrupting the development momentum. Another external shock that has affected the country, like most other developing countries, is deterioration in the terms of trade, which is as a result of falling international prices of primary exports, while prices of imported raw materials and machinery increased. Kenya's terms of trade worsened by 21% in the last seven years;
- Poor governance and perceived weak commitment to the reform agenda led to the loss of business and investor confidence, which led to low private sector

The decline in economic growth coupled with increasing inequality in the distribution of income has led to a rise in poverty levels such that currently about 17 million Kenyans or 57% of the population live below the poverty line. With 500,000 job seekers entering the job market every year, while only about 80,000 formal sector jobs have been created in the last six years, unemployment rates continue to rise. The NARC Government's Economic Recovery Strategy (ERS) is built around four pillars, namely, restoration of economic growth within the context of a sustainable macroeconomic framework, strengthening the institutions of governance, restoration and expansion of the infrastructure, and investing in the human capital of the poor. To implement the ERS, an investment programme (IP-ERS) was formulated taking into account views of development partners, the private sector and other stakeholders.

1.2.2 Real Economy Developments

The macroeconomic framework articulated in the IP-ERS emphasises a stable macroeconomic environment characterized by low inflation, declining fiscal imbalances, declining net domestic borrowing, and healthy balance of payments. In addition, the IP-ERS called for policy measures to address the issues of domestic savings and investment, improving accountability in the use of public resources, and restructuring and refocusing public spending toward priority activities.

The first implementation year of the ERS was 2003 while June 2005 will represent the halfway point of the 5-year programme. The year 2005 therefore in many ways represents the critical year for implementation of the ERS and stocktaking of initial achievements. Table 1.1 presents the major macroeconomic targets of the IP-ERS for the period 2003 to 2005.

Table 1.1: Key macroeconomic targets in the ip-ers for 2003-2005

	2002(actual)	2003(actual)	2004(actual)	2005 (target)
GDP growth (% real)	0.4	2.8	4.3	3.7
Investments (% of GDP)	16.3	17.4	18.2	23.3
Investment volume growth (%)	-6.4	-7.5	8.1	18.5
Savings (% of GDP)	13.6	14.9	15.7	17.6
Export growth (volume, % annual)	6.7	22.4	13.1	9.9
Import volume growth (volume, % annual)	-14.6	22.7	24.5	9.3
Inflation (%)	2.0	9.8	11.6	3.5

Source: IP-ERS Progress Report, Economic Survey 2005

The key issues emerging from the above table include:

Box 1.2:Issues in IP-ERS' macroeconomic targets

- The IP-ERS envisioned economic growth rising from 1.1% in 2002 to 3.7% in 2005, hence year-on-year growth needs to rise by at least 1 percentage point per year;
- Rapid improvement in both investments and savings are essential for ensuring the growth remains sustainable;
- Export growth need to be fairly rapid to ensure the balance of payments remain sustainable; and Inflation is to be maintained at low levels, hence the importance of macroeconomic stability.

1.2.3 Trends in Budgetary Performance 2001/02 – 2003/04

Revenues: Total government revenue has been increasing over the years. During the fiscal years 2001/02 to 2003/04, total revenue collected was Kshs. 194,507, 210,750, and 255,087 million, respectively. The Government revenue for 2003/2004 was above the target by Kshs. 13,122 million, mainly due to improved

revenue collection measures. Ordinary revenue collection amounted to Kshs. 226,478 million against a target of Kshs. 215,534 million, resulting in an over collection of Kshs. 10,944 million. Notable improvements were in Import Duty, Income Tax, Vat, and other Revenues. However Excise Duty and Investment Revenue collection were below the target during the period under review. Estimates of revenues and grants over 2001/02 to 2004/05 are provided in Table 1.2.

Table 1.2: Revenue and grants, 2001/02 - 2004/05

	2001/02	2002/03	2003/04*	2004/05**
Total revenue (Kshs Million)	194,507	210,750.3	255,087	268,493
Revenue/GDP (%)	**21.13**	**20.52**	**21.99**	**20.72**
Grants (Kshs Million)	6,823.00	15,142.00	15,794.00	30,114.00
Grant/GDP (%)	**0.74**	**1.47**	**1.36**	**2.32**

**Provisional figures*
*** 2004/05 Budget Estimates*

Expenditure: Actual expenditures rose from 24.5% of GDP in 2001/02 to an estimated 27.2% of GDP in 2004/05; recurrent expenditures declined from 21.8% of GDP to 21.3% of GDP with development expenditure increasing from 2.7% of GDP to 5.9% of GDP over the same period. This indicates that the much needed expenditure restructuring has begun. However, recurrent expenditures have remained high. Whereas most expenditure components (wages and salaries and interest payments) have declined over the period, expenditures on pensions have been rising. Expenditures on pensions declined from an average of 4.2% of GDP in 2001/02 to 3.8% in 2002/03, before increasing again to an estimated 4.1% of GDP in 2004/05. Allocations to operations and maintenance have increased continuously from 5.9% of GDP in 2001/02 to 6.5% of GDP in 2004/05.

Development expenditure as proportion of total expenditures increased from 11.5% in 2001/02 to 21.9% in 2004/05, implying that the ratio of recurrent to total expenditures declined from 88.95% to 78.24%. Notably, expenditures on wages and salaries declined from 34.4% to 29.3% of total expenditures over the same period. Table 1.3 summarises the expenditures for the financial years 2001/2002 to 2004/2005.

Table 1.3: Expenditures(including the payment) 2001/02 - 2004/05

	2001/02	2002/03	2003/04	2004/05
Total Expenditures (Kshs Millions)	225,760	264,144	282,187	352,528
Total Expenditures to GDP (%)	24.5	25.7	24.3	27.2
Recurrent Expenditures (Kshs Millions)*	200,807	220,618	244,476	275,821
Recurrent Expenditures to GDP (%)	21.8	21.5	21.1	21.3
Development Expenditures (Kshs Millions)	24,953	43,526	37,711	76,707
Development Expenditures to GDP (%)	2.7	4.2	3.3	5.9

The total Government Expenditure and Net Lending for the 2003/04 financial year was Kshs. 282,187 million, against a target of Kshs. 309,440 million. This was below the target by Kshs. 27,253 million and is mainly attributed to low disbursement of external funds especially those meant for capital-related expenditures. Recurrent expenditure amounted to Kshs. 244,476 million against a target of Kshs. 253,897 million. This shortfall was mainly due to low expenditures recorded in Domestic Interest (by Kshs. 4,402 million), Pensions (by 455 million), Wages and Salaries (by 1,436 million), and Operations and Maintenance (by 3,488 million).

1.2.4 Deficit, Financing and Public Debt

Government's fiscal policy has concentrated on reducing the overall deficit. In particular, the fiscal policy prescribes a deficit strategy that allows increases in net external borrowing in order to allow for net repayment of domestic debt. This was mainly to allow reduction in domestic borrowing, hence allow the expansion of credit to the private sector. Essentially, overall deficit (including grants) was targeted in the 2004/05-06/07 fiscal strategy paper to rise from 2.38% of GDP in 2001/02 to 3.55% in 2004/05. Net external financing was to rise from a net outflow of Kshs. 12.9 billion in 2001/02 to a net inflow of 27.7 billion in 2004/05. Equally, net domestic financing was to decline from Kshs. 47.3 billion in 2001/02 to Kshs. 15.2 billion in 2004/05. It is estimated that the overall budget deficit (including grants) as a proportion of GDP will be about 4.2% in 2004/05. Net foreign financing was worse than targeted with only Kshs.12.8 billion being realized, while the targeted decline in net domestic borrowing, however, fell below target by Kshs. 17.2 billion over the same period. Table 1.4 summarises the deficit, financing, and public debt position for the financial years 2001/2002 to 2004/2005.

Table 1.4: Deficit, financing and public debt (2001/02-2004/05)

	2001/02	2002/03	2003/04	2004/05
Deficit before grants (commitment basis)	-31,253.0	-53,393.7	-27,100.0	-84,034.9
Deficit before grants/GDP (%)	-3.4	-5.2	-2.3	-6.5
Overall Deficit (Revenue + Grants-Exp.)	-24,430.0	-38,251.7	-11,306.0	-53,920.9
Overall Deficit/GDP %	-2.7	-3.7	-1.0	-4.2
Net foreign financing	-15,613.0	-9,339.5	-5,232.6	12,785.0
As % of GDP	-1.70	-0.91	-0.45	0.99
Net domestic financing	44,835.0	45,830.3	21,844.8	32,406.8
As % of GDP	4.98	4.42	1.36	3.00
Total debt/GDP (%)	62.98	60.42	53.70	51.98
Total External Debt to GDP (%)	40.95	36.30	31.63	29.94
Total Domestic Debt to GDP (%)	22.03	24.12	22.07	22.03

Government debt has declined consistently from a high of 62.98% of GDP in 2001/02 to an estimate of 51.98% in 2004/05 fiscal year. Both domestic and external debt declined over the period. After domestic debt rose from 22% of GDP in 2001/02 to 24.1% of GDP in 2002/03, it declined thereafter reaching an estimate of 22% of GDP by 2004/05. External debt on the other hand declined continuously from 40.95% in 2001/02 to an estimate of 29.9% in 2004/05. The decline in external debt in 2004/05 was precipitated by lower receipts of balance of payments support than projected.

1.2.5 Investment and savings

The failure to drastically improve the country's investment and savings record threatens the recovery effort, since no meaningful growth can take place without adequate capital accumulation. In the recent past, the Kenyan economy has not performed well in this regard. For example, in the period 2000-2002, the average domestic savings rate was 13.1%, compared to 13.4% recorded in 2003. Public savings were –0.29 % of GDP in 2003, and it is expected to deteriorate to –0.30% in 2004, even as government continues with its efforts to narrow the budget gap. The private savings deficit, which was –2.79% of GDP in 2003, is expected to stand at 1.65% in 2004. It is expected to turn into a deficit as private investment picks up. Total savings are expected to fall from 13.41% in 2003 to 9.17% in 2004, as domestic savings are not expected to rise significantly.

Low savings undermines investment given that investment is either funded from domestic or foreign sources and adequate foreign resources may not be forthcoming. Not surprisingly therefore, the investment record has not been impressive. Public gross fixed capital formation (GFCF) as a percentage of GDP was 2.01% in 2003. However it is expected to increase to 2.29% in 2004, following implementation of various public projects lined up in the IP-ERS, especially in road construction and completion of stalled projects. Private GFCF is also expected to rise, albeit marginally, estimated to be 11.12% in 2004. This is a slight improvement over 10.92% of GDP recorded in 2003. Total investment is forecast to have increased to 13.41% in 2004, up from 12.93% recorded in 2003.

1.3 The Millennium Development Goals (MDGs)

1.3.1 The MDG Campaign in Kenya

The first major MDGs-related activity in Kenya took place in September 2002 when the first national stakeholders' workshop on the Millennium Development Goals was held. The main objective of the workshop was to seek consensus and promote understanding of the significance of the MDGs, their links to the national planning frameworks, and the mode and frequency of country level reporting.

The workshop led to the establishment of a national MDGs Task Force to spearhead the MDG campaign and prepare the first status report on MDGs in Kenya. Consequently, a MDG Progress Report for Kenya was officially launched in Kenya in July 2003. The MDG Progress Report for Kenya formed a major reference material for subsequent work and MDG campaign in Kenya. The report clearly brought to the fore the fact that under the current resource constraints and policy environment, Kenya is unlikely to achieve the MDGs, even if the potential exists.

1.3.2 MDGs Needs Assessment Studies

This report on the Needs Assessment and Costing Study is one of the key outputs of the Government's efforts to conduct needs assessment studies in order to align policy with the MDGs. The needs assessment will help this country map out an investment path and develop a long-term plan for scaling-up investments to achieve the Goals by 2015. The results from the needs assessment will also be used in the preparation of a long-term plan on MDGs to 2015 that will in turn form the basis for reviewing the ERS and Medium Term Expenditure Framework (MTEF) budgets so as to align them more towards achieving the MDGs.

1.3.3 The Institutional Framework on MDGs

The institutional framework on MDGs consists of three main levels. At the policy level is a National Steering Committee (NSC) chaired by the Head of Public Service and Secretary to the Cabinet. The Permanent Secretary in the Ministry of Planning and National Development is the Convener. The members of the National Steering Committee are Permanent Secretaries in the Ministries implementing MDGs-related activities, representatives from development partners, civil society, and private sector. At the second level is a Technical Committee responsible for the provision of technical oversight to the MDG process, which is chaired by the Permanent Secretary, Ministry of Planning and National Development. The actual work is carried out within the existing Sector Working Groups (SWGs). The national MDG Focal Point at the Ministry of Planning and National Development coordinates the whole process.

1.3.4 Monitoring and Evaluation of MDGs

The monitoring and evaluation (M&E) of the MDGs will be anchored on the new monitoring and evaluation system in the central government system. The current

M&E system is a radical improvement of the previous system, which had weak coordination mechanisms because it was institution based. The new system is a result of a prolonged consultative process, during which a national institutional framework was agreed upon. The system combines a central structure involving line ministries and other central public bodies, and a devolved structure to provide for reporting by the districts. The National M&E Steering Committee, operational since early 2004 and a National Stakeholder Forum act as the oversight bodies for the system. A Monitoring and Evaluation Department (MED), under the Ministry of Planning and National Development, coordinates the M&E system on a national basis. The activities the MED has undertaken include the finalization of priority indicators for reporting to government, stakeholders and development partners on the IP-ERS. The indicators developed include those focusing on MDGs. The first progress report of the IP-ERS was completed recently.

The monitoring of MDGs will also rely on the existing data gathering systems and surveys. The Central Bureau of Statistics (CBS) has an integrated data management system that periodically captures data from various sectors. The CBS also conducts national surveys and censuses to generate data for planning purposes, which includes a significant proportion of MDG-related parameters.

1.3.5 The Challenges Ahead

The achievement of the MDGs poses tremendous challenge if the current status of the economy is anything to go by. Despite the signs of economic recovery, the growth of the economy is far below the necessary growth rate of about 7% needed to support implementation of MDG-related activities within the remaining decade to 2015.

To achieve these goals within the stipulated timeframe, the government needs to move with speed in implementation of macroeconomic policies to accelerate growth and adopt practical strategies for eradication of poverty. To translate these goals into reality, the government is putting in place a stable macroeconomic policy framework that is supportive to growth and poverty alleviation. Such policies include prudent monetary and fiscal policies that ensure low and stable inflation levels; improvement in management and targeting of public resources; sustainable debt management; prudent exchange rate policy; maintaining an optimal level of foreign exchange reserves; tax rationalization and broadening of tax base; promotion of good governance; and prudent foreign policy with emphasis on economic aspects.

1.4 International Environment and Donor Assistance

During the endorsement of the MDGs, countries undertook to take up the task of mobilizing financial resources needed to achieve the goals. However, resources have

remained a constraint among developing countries, which is caused by the fact that development partners do not always honour their commitments. In addition, the existing global financial systems and arrangements for financing development demonstrate the inability of developed countries to adequately address the needs of developing countries. For instance, ODA flows to Africa declined substantially in 1990s. Therefore, there is need to put in place a new framework to create the enabling environment for developing countries to achieve high and sustainable growth. The emphasis of the new framework should be on concessionary financing and greater use of grants. Also, the conditions tied to the release of aid should be realistic, achievable and sufficiently flexible to take into account changing conditions and circumstances.

CHAPTER 2

THE GOAL ON POVERTY AND HUNGER

2.1 Introduction

The main objective of the Hunger MDG is to reduce the population of hungry people by half by the year 2015. To achieve this, Kenya must commit to good governance and development policies based on sound science and scaling-up of best practices while her development partners must commit to much greater financial assistance, access to their markets and expanded knowledge transfer.

The strategy to achieve the Hunger[1] MDG consists of three elements: (a) mobilize political action to end hunger at the global as well as national and local scales; (b) align national policies that restore budgetary priority to agriculture as engine to economic growth, build local infrastructure, empower women, and build human capacity in all sectors involved in hunger-reducing actions; and (c) implement and scale-up proven actions that improve the nutrition of vulnerable groups, raise agricultural productivity in smallholder farms and improve market functions – in ways that create synergy and result in positive transformations.

2.2 Situation Analysis

The root causes of hunger in Kenya are poverty (inability to produce own food and lack of means to access food); unemployment and underemployment; landlessness; vagaries of weather (especially because of dependency on rain-fed agriculture); the maize syndrome (overemphasis on maize which locks people into risky maize-based subsistence agriculture even in areas where maize production is unsuitable); education (especially female education because of its effect on child health and nutrition); inadequate sanitation, health facilities and clean water (effect of common infectious diseases on nutrition and health); and socio-political issues affecting access to food (disempowered groups, especially women, have limited access to food and incomes). The incidence of poverty is estimated at 56% of the population, where 82% of the poor live in the rural areas and 18% in urban areas.

The categories of persons at risk include pregnant women and lactating mothers (1.1 million); children under 5 years (5.3 million); elderly people above 55 years (1.8 million); AIDS orphans (1.8 million); people living with AIDS (2.2

[1]The principal forms of hunger are: (a) **chronic hunger** - constant under-nourishment that results in stunted children and high child mortality due to hunger-related diseases, but not starvation (b) **acute hunger** - severe under-nourishment over a distinct period, reflected in wasting and starvation; and (c) **hidden hunger** - micronutrient and vitamin deficiencies found in vast number of people who would otherwise have access to calories and proteins

million); and people suffering from tuberculosis (32,000), and malaria (6.7 million cases reported each year).

2.2.1 The Policy Environment

The government has formulated two strategy papers relevant to hunger reduction: the ERS and the Strategy for Revitalization of Agriculture (SRA) 2004-2014. ERS presents a broad development framework for reviving the economy, creating jobs and reducing poverty. ERS recognizes agriculture as the critical sector that must be revitalized if the economic recovery objective is to be achieved. The SRA is expected to contribute significantly towards attainment of the following ERS targets: (a) reducing the proportion of the population below the poverty line from 56% in 2000 to 28% by 2010, 10% by 2015 and 0% by 2020; and (b) reducing the proportion of food poor from 48.4% in 2000 to 23.5% in 2010, 10% in 2015, and be eliminated altogether by 2020. Thus, Kenya intends to reduce hunger faster than envisioned in the Hunger MDG.

The main national development objectives of the agricultural sector include ensuring food security (access to adequate and balanced food), increasing rural incomes, creating employment (on-farm and off-farm), support to agro-industries (supply of raw materials to local industries), promoting exports (increasing production, diversification and value-adding), and conservation (natural resource management). The main service delivery systems to the agricultural sector include technology generation (research), technology transfer (extension), facilitating access to credit, facilitating access to inputs, and development of markets.

The food security[2] objective aims at ensuring that as far as possible farm households produce sufficient quantities of food to meet family nutritional requirements and also produce excess foodstuffs to feed non-producers. Increasing rural incomes through production of cash crops, livestock products, raw materials for local agro-industries and export commodities generates cash to raise the quality of life in rural areas. Conservation of natural resources ensures the future productive capacity of agricultural land.

The service delivery systems ensure (a) availability of agricultural production and post-harvest technologies, generated by national, regional and international research institutions; (b) dissemination of information through state extension and other technology transfer institutions (TTIs) in the private, NGO and CBO sectors; (c) facilitating farmers' access to credit and inputs; and (d) and development of markets for farm produce.

[2] Food security is defined as "a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets dietary needs and food preferences for an active and healthy life".

2.2.2 Performance of the Agricultural Sector

Between 1963 and 1982, agriculture GDP recorded high growth rates of 4% and above per annum but declined significantly thereafter to reach around 1% in the last one and half decades. The factors that impacted negatively on agricultural growth included: (a) mismanagement of farmer support institutions that affected the areas of marketing, credit, seeds, and farm inputs; (b) dumping of agricultural commodities in the local market such as dairy, maize, and sugar; (c) suspension of the International Coffee Agreement in 1989 resulted in fall of coffee prices and subsequent drop in production from 129,000 tonnes in 1987 to 48,000 tonnes in 2002; (d) depreciation of the Kenya shilling resulted in large increases in the cost of imported agricultural inputs; (e) reduction in donor support reduced resources available for investment in agriculture; (f) implementation of structural adjustment programmes without proper planning; and (g) decline in budgetary allocation to the agricultural sector. Although the agricultural sector contributes 45% of government revenues, the proportion of government annual budget to the sector has decreased significantly over the last 20 years from a high 13% in 1983 to the current 4%.

The SRA estimated annual budget of KShs 13.5 billion (US$ 168.75 million) is based on the traditional activities and budget lines of the Ministries of Agriculture and Livestock and Fisheries, namely, research, extension, credit and rural development. It does not address other programmes of hunger reducing actions envisaged in the Hunger MDG such as school feeding programmes and food-for-work, hence the need to provide additional resources to supplement the budget in SRA.

Table 2.1: Estimated annual cost of implementing SRA

Budget Line	Budget (KShs billion)	US$ Equivalent (million)
National Extension Fund	3.5	43.75
Credit Seed Fund	3.5	43.75
Rural Development Fund	5.0	62.50
National Research Fund	1.5	18.75
TOTAL	13.5	168.75

Source: Strategy for Revitalizing Agriculture 2004-2014

Total extension staff in agricultural ministries stood at 23,605 in 1983, rose to 40,753 in 1994 and then declined to 26,645 in 2002. As shown in Table 2.2, only 50% of staffs are professionals (certificate, diploma and degree levels); the remaining 50% being support staff. Furthermore, technical departments are staffed at 66% of the authorized establishment, which greatly constrains delivery of technical services.

Table 2.2: Technical and non-technical staff in the agricultural sector by function (2002)

	Total Staff	Degree (technical)	Diploma (technical)	Certificate (technical)	Non-technical	% Non-technical
Extension services	11,253	1,247	1,975	1,561	6,470	57
Disease Control	4,807	472	2,560	18	1,757	47
Other Services	10,585	1,569	3,371	675	4,860	46
Grand Total	26,645	3,288	7,906	2,254	13,087	50

2.2.3 Policy Interventions Supportive to Hunger Reduction

The main government policies for mitigating hunger are (a) raising the productivity of smallholder farmers; (b) providing nutritional assistance to child-bearing women, children and other vulnerable groups; and (c) improving market functions to raise on-farm and off-farm activities.

The above broad policy interventions can be desegregated into eight actions, namely, (a) make agriculture and rural investments a priority; (b) greatly enhance capacity, particularly of professionals and technicians working on agriculture, nutrition and markets; (c) build and improve rural infrastructure; (d) empower women and invest in girls; (e) institute risk-reducing safety nets; (f) provide incentives that promote sustainable natural resource management; (g) strengthen property rights to motivate private investments; and (h) have stable and fair macroeconomic and trade policies that level the playing field.

2.2.3.1 Make agriculture and rural development a priority

The activities envisaged in the SRA include: (a) increasing productivity to lower the per unit cost of production; (b) improving extension services; (c) improving linkages between research, extension and farmers; (d) improving access to financial services and credit; (e) reducing taxes on agriculture; (f) increasing competition in the supply of inputs to reduce costs; (f) market development and orientation in favour of small producers; (h) encouraging growth of agribusiness; and (i) improving regulatory services to ensure quality inputs and products.

2.2.3.2 Build technical capacity in agriculture, food and nutrition

There are approximately 13,000 public sector professionals and technicians working in the field of agriculture, food and nutrition scattered in various ministries and parastatals; equivalent to 33% of the 40,000 that prevailed in 1994.

Another area of concern relates to training of professionals, technicians and farmers. Farmer training at FTCs no longer exists. Certificate training has all but ceased, yet

this is the level of extension staff best suited to interact with small-scale farmers, and should be the source of community extension workers (CEWs) proposed in this study. Training institutions have converted diploma training to degrees courses, a level too high for a predominantly smallholder agriculture. The government should seriously address capacity building to meet the Hunger MDG. The starting point is massive training of professionals and technicians in the field of agriculture, food and nutrition by government, the private sector, NGOs and CBOs.

2.2.3.3 Build and improve rural infrastructure

Kenyan agriculture is serviced by poor trunk and rural access roads. The ministries involved in hunger reduction should (a) advocate for investments in improving roads as much of the road maintenance levy, and taxes on fuel and other economic activities used for building and maintaining roads come from the agricultural sector; and (b) ensure better use of the 80% of county council cess collections that are earmarked for road improvement. Other infrastructure required to improve rural economies are availability of electricity and agricultural water.

2.2.3.4 Empower women

Kenya's gender policy provides for articulation and mainstreaming gender issues in development. The main problem in achieving gender equity is the unwillingness of some communities to change entrenched cultural beliefs e.g. land inheritance by women. Gender disparity is not confined to rural communities; it extends to leadership positions e.g. the small proportion of women elected councillors in local authorities (4.5%) and elected women members of parliament (4.2%). Resolving gender parity must begin from the top.

The SRA interventions in mainstreaming gender issues in agricultural development are to: (a) use the gender policy in the formulation of agricultural development interventions; (b) develop special programmes within local areas for gender empowerment and access to land, credit, inputs, technology, markets and information; and (c) engender new technology development and review old technologies to make them gender appropriate.

2.2.3.5 Invest in youth development especially the girls

The possible interventions for youth development, including girls, are to: (a) expand vocational youth training institutions for youth as future farmers; (b) develop a financial or loan programme targeting the youth to engage in agriculture and related activities; (c) develop appropriate programmes to reduce youth migration and increase their gainful employment in agriculture; and (d) promote and support the private sector to develop rural agro-industries and other enterprises for alternative employment of youth.

2.2.3.6 Reduce the incidence of waterborne and common infectious diseases

Common infectious diseases and water borne diseases such as malaria, tuberculosis, upper respiratory tract infections, diarrhoea and intestinal parasites result in morbidity and reduce the body intake of food even when available. HIV infection has also become a "new variant famine", as people affected by AIDS lack the energy to farm. Most farmers are women, so AIDS reduces their ability to nurture children. All of this has a direct effect on household food security. Adequate nutrition slows down the progress of HIV infection into full-blown AIDS.

2.2.3.7 Increase and diversify incomes

An important way of achieving this is to make markets work for the poor. In most rural areas markets either do not exist or function poorly. Selling is normally at farm gate or roadside and farmers have little or no information on the prevailing commodity prices in major market places. Investment is required in strengthening of farmer groups and associations, market information, rural infrastructure, storage, processing, and capacity building.

2.2.3.8 Restore and conserve the natural assets

Soils, vegetative cover, waterways, and environmental management are essential for sustainable crop, livestock, fisheries, wildlife and biodiversity of the various ecosystems. These resources must therefore be protected for posterity.

2.2.3.9 Strengthen property rights to motivate private investments

Land tenure in Kenya falls under three categories: communal land based on customary rights; Government trust land normally used for public good such as urban and rural settlement, forestry, research, and game reserves; and private land owned by either individual, group of persons or company. Private land owners have title to land either as freehold or leasehold.

Land registration processes should therefore be accelerated, but measures must be taken to protect the interests of small landowners. There have been many incidences where private titling quickly leads to land being transferred to the rich, adding to the growing list of the landless.

A special land policy is required for ASALs. Without irrigation, these areas are only suitable for extensive livestock production and therefore require large tracts of land. In this regard, group titles in marginal areas have proved more successful where common rights have been the norm. The important thing is to institute a process under which the kind of tenure arrangement is defined through dialogue with the land users and, once agreed, the tenurial arrangements should be protected by law.

2.2.3.10 Have a stable and fair macroeconomic and trade policies

There is ample evidence that macroeconomic instability is the main obstacle to agricultural growth. The macroeconomic framework should include: (a) deepening the financial sector, encourage competition and efficiency in order to lower the cost of agricultural services; (b) pursue prudent monetary and fiscal policies to eliminate macroeconomic distortions; (c) maintain a market-driven exchange rate; and (d) intensify supervisory and monitoring functions to ensure sound and efficient management of the financial system.

The interventions required to reduce taxes on agriculture include: (a) review and rationalize all taxes, cesses, fees and other levies charged on agriculture by the central and local authorities; (b) explore possibilities of moving away from taxation in the form of duties and levies on agricultural produce to taxing income; (c) provide tax incentives to encourage agro-industries in the rural areas; and (d) consider introducing land tax to provide a tax base for local authorities and to discourage holding of idle land for speculative purposes.

2.2.3.11 Institute risk reducing safety nets

Target interventions of food-poor population should be complemented by strategic contingency plans. The actions should include (a) contingency budget allocation for disaster rapid response; (b) minimizing procedures and trigger mechanisms; (c) strengthening national disaster response agencies and early warning systems; (d) expansion of preschool and school feeding programmes based on locally sourced foods; (e) exploring modalities of establishing daily feeding programmes for the elderly, the sick and the extremely poor; (f) food and cash for work programmes, focusing on rural road works, small-scale irrigation and other infrastructure to support productivity and income improvements; and (g) easing of procedures for government procurement to support hunger-reducing programmes.

2.3 Interventions and Costs

Analysis of hunger interventions is based on the guidelines given in the Millennium Project's Hunger Costing Model of June 2004. The model covers an 11-year period from 2005-2015 and is made up of three sections: agricultural productivity, rural income generation, and nutrition.

The expected outputs under each section include:

- ***Agricultural productivity:*** All smallholder farms will have been covered by soil conservation; all smallholder-managed irrigation and livestock water projects completed; research and extension services for the smallholders well established; and all smallholders will have had access to fertilizers and improved seed.
- ***Income generation:*** Programmes for intensifying livestock production, credit and rural financial services, and creation of markets for smallholder produce will

have been established and functional. Similarly, capacities for the management of food security, nutrition and rural development will have been accomplished.

- ***Nutrition intervention:*** Following improvements in food access and income level of the poor, food poverty will be greatly reduced, with approximately 90% of persons targeted for nutritional intervention free from hunger. However, there will still be children in schools, the sick and the elderly whose families are unable to take care of, but the number of people requiring intervention will be much lower because families will have access to food and increased incomes. The number of people in need of nutritional intervention is estimated at 4 million by 2015.

2.3.1 Increasing Agricultural Productivity

Agricultural productivity interventions target small-scale farmers with less than 1 ha. There are 2.9 million such farm households in Kenya. The main reason for targeting smallholders is that this category is considered food insecure. In order to reach the hunger MDG, agricultural productivity of smallholder farms must triple. Five interventions identified for agricultural productivity are investing in soil health, improved seeds, small-scale water management, extension services, and agricultural research.

2.3.1.1 Investing in soil health

mineral fertilizer: Crop yields have declined significantly due to soil poverty, best manifested in smallholder maize yields. The soil health programme aims at ameliorating soil fertility through integrating physical, chemical and biological methods. The physical and biological methods include soil erosion control, use of animal and green manure, cover crops, crop rotation, agro-forestry, and integrated crop-livestock production systems.

The 2.9 million smallholders use little or no fertilizers, and the estimated 15% who are able to apply fertilizers do not actually use the recommended amounts because of cash constraints. The major challenge in fertilizer use is therefore affordability, availability, access, and information on usage. Current main users of fertilizer are found in high value crop sub-sectors of tea, sugar, coffee to some extent, and large-scale producers of maize, wheat, and horticulture.

2.3.1.2 Small-scale water management

smallholder irrigation: Kenya relies on rain fed agriculture for production of foodstuffs and other marketed crops. Rainfall is intermittent and unreliable in some years. The area suitable for irrigation is approximately 540,000 ha but only 103,233 ha (19%) is irrigated. The current structure of irrigated agriculture comprises 48,075 ha for smallholders (47%), 42,700 for private commercial farmers (41%), and 12,458 ha Government-managed (12%), making a total of 103,233 ha.

Both government and smallholder managed irrigation programmes settle smallholders on approximately 1.3 ha per family. Experience has shown that

government managed irrigation schemes are inefficient due to management problems. The government is therefore giving high priority to smallholder managed irrigation development. The major cost of irrigation is the development of infrastructure for land levelling and water conveyance. Once completed, farmers become responsible for maintenance through a maintenance levy. The relevant farmer association becomes responsible for produce marketing on contractual arrangements with produce buyers.

Once developed, the remaining 437,000 ha suitable for irrigation will, at the rate of 1.3 ha per household, accommodate 336,000 smallholders. Assuming a family size of five, 1.7 million family members will have a source of livelihood and food security.

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livestock water: Most livestock production is carried out in ASALs where water is scarce during dry seasons. Provision of livestock water is a priority under the Arid Lands Resource Management Project and will involve construction of small water dams, water pans, and boreholes strategically placed in production areas and along livestock routes. This component of small-scale water management has not been costed but available figures indicate an annual estimate of $10 million, equivalent to $110 million over 11 years.

2.3.1.3 Improved seed

Seed systems comprise of certified hybrid and open pollinated varieties, and farmer's own selection from the last harvest. Use of improved small cereals seed (sorghum and millets) and vegetatively propagated material (cassava, Irish and sweet potatoes) is promoted by NGOs, CBOs and research establishments on very limited and localized areas and are therefore not captured in seed statistics. Only data on maize and beans is available.

Smallholders invariably interplant maize and beans. The maize seeding rate is 25 kg per ha at a cost of KShs 2,750 ($34). The corresponding figures for beans are 55 kg per ha at a cost of KShs 4,950 ($69). The inter-planting ratio for maize to beans is 4:1. It is estimated that smallholders will allocate only 0.3 ha of their land to maize and beans, leaving the rest to other crops and pasture. It is also estimated that farmers will recycle seed for a minimum of three years before replenishment. Taking these factors into consideration, the annual demand for improved seed amounts to 5,800 tonnes of maize and 3,190 tonnes of beans, worth $11.6 million per annum, or $128 million for 11 years.

2.3.1.4 Agricultural extension

The performance of the once vibrant state extension has deteriorated in the last decade following retrenchment, natural attrition, freeze on hiring of new staff, and

reduced resources for operations and maintenance. The number of extension service providers declined from 30,000 in mid 1960s to 4,783 in 2002. The cadres of extension staff in contact with the farmer are the diploma and certificate holders, who numbered 3,532 in 2002, or one field extension worker for 820 smallholders. This ratio is grossly inadequate and farmers do not feel the impact of state extension.

Recent studies have shown that alternative extension service systems (e.g. by NGOs and CBOs) cannot perform in the absence of state extension, which they rely upon for support and expertise. There is therefore justification for maintaining some presence of professional state extension workers. There is need to undertake radical reform of public agricultural extension by, for example, (a) moving away from maintaining a permanent presence in every administrative sub-location; (b) gradually moving away from actual delivery of extension messages to a supervisor/facilitator to other providers; (c) funding new initiatives under this strategy, including piloting of a number of recent innovations and best practices in new methods and institutional frameworks for delivering extension services; and (d) instituting a new pluralistic, and demand-driven extension system, as more of the actual delivery of messages will be delivered by players outside the public sector.

To meet the new role of supervisor/facilitator, the human capacity in public extension needs to be superior to that amongst alternative extension providers. Linkages with agricultural research will provide some of the additional human capital required. However, public extension will need replacement graduate staff to be trained in the new approaches as well as retraining of existing staff, and an explicit new design of public agricultural extension in the districts that allow for optimisation of technical capacity and value-added interaction with other partners and clients.

Another innovative way of extension delivery to be promoted is the formation of producer groups and farmer associations to facilitate delivery of extension messages and acquisition of inputs. This strategy compliments the expansion of farmer field school (FFS) extension method being piloted in 25 districts and which will be extended to cover all the 78 districts in Kenya.

The cost of extension is calculated on the basis of policies and approaches described above. The existing 4,700 agricultural professionals in government will serve as trainers of community-based extension workers (CEWs, also known as master farmers) proposed in this study. One CEW will serve 300 smallholder households. CEWs will be selected from the local community, trained in agricultural extension, and will thereafter live within the community. CEWs will be supervised by professional extension workers and be constantly updated on new technologies and innovations.

At the ratio of 1:300 CEW to farm households, approximately 10,000 CEWs will be required to serve the 2.9 million smallholders, and half of the CEWs will be women.

The main cost of the new extension approach is salaries for CEWs. NGOs running similar programmes in rural areas pay CEWs a salary of KShs 5,200 ($65) per month. CEWs will be hired on contractual terms.

Implementation of the envisaged novel extension system will require additional funds. State extension agents will have to be retrained on their new role of supervisor/facilitator of the new emerging extension providers. Formation of farmer groups/associations will foster, strengthen and train farmers to create demand and facilitate delivery of extension, as well as acquisition of farm inputs and access to markets. In addition, extension staff, CEWs, and farmers require constant flow of information on the latest technologies and markets, whose cost is estimated at $43 million per year ($473 million over 11 years).

2.3.1.5 Agricultural research

It is estimated that investment of 1% of agricultural GDP (or $17 million in Kenya case) in research is necessary to support a threefold increase in productivity in the smallholder sector. The required areas of research intervention for the smallholder sector are smallholder technology development, on-farm research and verification, and technology delivery. Analysis shows that research costs amount to $6 per smallholder per year. This translates to $17 million per year, or $187 million for 11 years.

2.3.2 Rural Income Generation Interventions

A major national development objective of the agricultural sector is to increase rural incomes through production of marketable surpluses, high value crop and livestock products, processing to add value, and stimulation of off-farm activities to create employment. Rural income generation will be achieved through several fronts, namely, storage facilities, livestock production, value-added agricultural products, credit, strengthening farmer associations, building market space for smallholders, and food/cash for work for the landless and unemployed.

2.3.2.1 Storage

On-farm storage losses are high, estimated at 30%. Smallholders sell immediately after harvest when there is glut in the market and prices are low. Grain storage will ensure that farm households have sufficient food to last until the next harvest and fetch better prices for their produce later in the year. However, there are sufficient market outlets that pay decent price for food grains (NCPB, grain millers). It is estimated that only 10% of smallholders will require community store facilities.

NGO rural projects show that improved storage facilities can be constructed at community level of one storage point for every 50 smallholders. Consequently, 5,800 community stores are required to cover the 290,000 smallholder households. A

community store costs KShs 100,000 ($1,250). At a rate of 500 stores per year, the annual costs will be $0.6 million, equivalent to $6.6 million over 11 years. Maintenance costs are met from storage charges.

2.3.2.2 Livestock

Most smallholders also rear livestock for income generation. The livestock population comprises of 29 million chickens, 10 million beef cattle, 3 million dairy cattle, 9 million goats, and 300,000 pigs. As with crops, production levels are very low, mainly because of non-use of livestock inputs. The main interventions required are availability of improved breeds, better pastures, livestock feeds, animal husbandry, disease control, and markets for livestock products.

Government policy envisages construction of abattoirs in the major red meat production areas in ASALs to facilitate higher off-take rates. This is an area where private sector is expected to invest, but the required capital is not available and government intervention is justifiable as a public good. Construction and equipping abattoirs is estimated at $3 million per annum, equivalent to $33 million in 11 years.

2.3.2.3 Credit and rural financial services

Kenya's agriculture is served with a range of services of widely varying quality. These services include financial services, marketing services (including product buying, selling, promotion), and processing services. But there are major problems, for example where commodity traders and cooperative societies do not pay farmers, or processors have no capital to replace obsolete equipment and are unable to attract new investment funds. There is therefore a clear need for technical and financial support to agriculture.

The financial services to smallholder agriculture require special mention, as only about 22% (about 638,000) of rural farming households have any form of bank account. Under such environment, the challenge is to design strategies that meet the financial service needs of small-scale producers and pastoralists. There is therefore need for careful study leading to formulation of a policy and administrative mechanisms to implement the programme. The key planks in achieving this are increasing access to financial services, savings as well as credit to smallholder farmers; and availing farmers' access to longer-term investment funds at affordable interest rates.

development of a credit policy: Currently, only a few smallholders have access to credit because existing lending practices favour borrowers with collateral. Experience with micro-finance institutions show that lending to small businesses is feasible and that default rate is very low. There is therefore need to formulate a policy that allows smallholders access to credit, and preparation of guidelines on smallholder lending and dissemination to district level, followed by training on the

mechanisms involved. The credit policy intervention and management is estimated to cost $5 million per year, equivalent to $55 million in 11 years.

annual credit: Annual credit to farmers to enable them to access farm inputs and meet the needs of pastoralists is estimated at KShs 8,000 ($100) per household per year, which will be repayable before the next credit is given. This will therefore become a revolving fund to be repaid and relent in the following year. The total required to reach 3 million households is $30 million over 11 years. Other smallholder credit comprises of long-term borrowing for farm capital development e.g. improved breeds, farm structures and machinery. Demand is estimated at $30 per annum, but loans will be repaid every year and rolled over the next year. The first year $30 million credit should therefore suffice during the 11-year MDG period.

off-farm financial services: The projected increase in agricultural productivity will stimulate off-farm activities such as produce buying and selling, processing of both crop and animal products, processing facilities for livestock and fish products, provision of farm inputs, and fabrication and repair of farm equipment. There is therefore need for technical and financial support for off-farm nascent private sector initiatives for both existing and potential new entrants into agribusiness services.

Development of off-farm service sector will require venture capital and a competitive rural access fund. The venture capital will assist entrepreneurs who wish to invest in processing and marketing of farmer's produce, estimated at $10 million annually. The competitive rural access fund will be advanced to rural finance institutions for on-lending to investors in rural areas at a competitive service charge, estimated to cost $20 million annually. As is the case with annual and longer-term credit, these funds are repayable but, because of the nature of such investments and the risks involved, access to such funds should be double of the annual level suggested to cover the 11-year period.

2.3.2.4 Farmer associations and community centres

farmer associations: There are over 5,000 registered agricultural cooperatives and 3,000 savings and credit cooperatives (SACCOs) supporting over 2.5 million people. Performance of cooperatives declined during the last two decades due to mismanagement of farmers' resources. Cooperatives must be revitalized to better serve their clients. The desired actions are training of farmers on their rights and obligations, enhancing the capacity of cooperative sector leadership on business acumen, and better management of cooperatives.

community centres: Community centres are important facilities for farmers to share experiences, learn new techniques, and gather information on agricultural production and marketing. One community centre adequately serves 600 households, at coverage rate of 2 centres per community extension worker (CEW).

Approximately 5,000 community centres are required throughout the country. Community centres will also double up as farmer training centres (FTCs). Approximately 450 community centres will be constructed annually at a unit cost of KShs 400,000 ($5,000), or an annual cost of $2.3 million, equivalent to $25 million over 11 years.

2.3.2.5 Food/Cash for work programmes

Use of labour intensive methods for development of infrastructure provides an opportunity for absorbing a large number of the unemployed and landless. The Hunger MDG model does not provide for food-for-work in major infrastructure such as major roads and waterworks, but there is justification of including this item for minor works in support of smallholder development. The infrastructure includes access roads to markets, minor irrigation schemes, water for livestock, etc. At a labour rate of $1 per day (which demarcates the poverty threshold) and working for 300 days per year, investment of $36 million per year will generate 120,000 jobs (distributed equally between the unemployed and landless). The total needs for 11 years amount to $396 million.

2.3.2.6 Development of smallholder markets

The strategies to make smallholders access markets include: (a) catalysing the formation of producer and processor groups for acquiring information, inputs and accessing markets; and (b) market promotion and development, encouragement of value adding, on-farm storage, and processing. Development of markets for smallholder farm produce should cover both animal and plant products. The cost of the above interventions is estimated at $1 per household per annum; thus the annual cost will be $3 million, or $33 million over 11 years. The funds will be channelled through self-help groups, CBOs, cooperatives, and commodity producer associations to enable them develop markets for the smallholders they support.

2.3.3 Nutrition Interventions

2.3.3.1 Children under five years

Complementary feeding interventions are aimed at infants aged 7 to 24 months. Out of the over 5.2 million children under 5 years, 1.74 million are stunted and 1.2 million underweight. Estimates show that 23,000 child deaths in year 2000 were associated with severe malnutrition. Interventions for infants and young children should be met through programmes aimed at mothers. For example, protein rich foods (powdered milk and Soya bean derivatives) should be available at health institutions involved in mother and child health education and issued free to destitute families.

Nutrition studies show that the incidence of child malnutrition is very low among households with a dairy cow. An intake of one half litre of milk per child per day would reduce malnutrition. A half litre of unprocessed milk in the rural areas costs $0.10, which works to $36 per child per year. Providing 1.7 million stunted children from poor families with milk will cost $62 million per annum, equivalent to $682 million for 11 years.

2.3.3.2 School meals

School meals intervention applies to pre-primary, primary, and secondary schools in both urban and rural areas. As of 2003, there were 1,204,606 in pre-primary education, 7,208,000 in primary school, and 862,907 in secondary school, making a total of 9,275,513. The School Feeding Programme, which targets mainly the poverty-stricken ASALs, shows that school lunches improve school attendance and performance.

Nutritional stunting (chronic under-nutrition associated with long term deprivation) is widespread in rural (35%) and urban (25%) areas. Students from families that can afford will not require school meals. Based on the proportion of stunted children from poor families, it is estimated that 50% of children in pre-primary (600,000), 10% in primary (720,000), and 5% in secondary schools (43,000) will be availed school lunches.

The standard diet provided in school meals comprises of a mixture of maize and beans at a ratio of 2:1. At current prices, the cost per student works to KShs 5 per student per day ($0.06), assuming 0.25 kg per student per day. Students are in school for about 165 days (excluding weekends and school holidays), and it would therefore cost $10 to feed a student for one year. The annual cost of feeding 1.4 million children works out to $14 million per year, equivalent to $148 million for 11 years. The school meals intervention will be an expansion of the school-feeding programme based on locally sourced foods. This will reduce distribution costs, promote participation of beneficiaries in the management of the programme, and create markets for locally produced food.

2.3.3.3 Pregnant women and lactating mothers

Judged by the number of children below one year, there are over one million expectant and nursing women in any one year. Most of the women in the rural areas suffer from poor health during pregnancy (e.g. anaemia), yet they are involved in agricultural production and household chores. Women will be specifically targeted to access productive resources and technology, and in improving their knowledge of nutrition and childcare through agricultural and health extension. It is estimated that only 10% of expectant and nursing mothers (100,000) will need nutrition intervention. Religious groups and NGOs provide this kind of assistance at a cost of $26 per woman per year. Based on the NGO norm, nutrition intervention for

women is estimated at $2.6 million per annum, equivalent to $28 million over the 11-year period.

2.3.3.4 Supplemental feeding for vulnerable groups

The total number of people afflicted by debilitating diseases is estimated at 6.7 million.Novel ideas on how to enhance productivity of people affected by disease should be implemented e.g. provision of nutritious food and inputs for their own food production. It is estimated that 500,000 sick people and a similar number of orphans will require nutrition intervention, calculated at the rate of $26 per annum proposed for women. Nutrition intervention for vulnerable groups is estimated to cost $26 million per year, equivalent to $286 million for 11 years.

2.3.3.5 Elderly people

There are approximately 1.8 million people over 55 years of age, who are classified as elderly in Kenya. The breakdown of the extended family support system due to urbanization, modernization and poverty has rendered some older persons helpless and sometimes destitute. Due to their vulnerability, they require basic services including medical attention, security, and alleviation from hunger. However, not all elderly people need food assistance. It is estimated that only 10% (180,000) might need assistance at a cost of $50 per annum for high nutrient supplements, equivalent to $9 million or $99 million over 11 years.

2.3.3.6 Emergency feeding assistance

Emergency feeding assistance supports emergency situations such as drought, floods, fires and internal displacement as a result of clashes. In the year 2000, over 5 million people were under famine relief programme and it took famine relief recipients 3 years to recover from the effects of drought. The government, NGOs and donors spend approximately $135 million on food assistance to distressed communities every year. Over 50% of famine relief expenditure is on logistics, hence the high cost of famine relief. The $135 million per annum is retained as a working figure in projecting future needs.

2.3.4 Capacity Building for Food Security and Nutrition

The Government policy on food and nutrition is based on the Sessional Paper No. 2 of 1994 on National Food Policy and the 1994 National Plan of Action for Nutrition (NPAN). However, the implementation of the NPAN has not been encouraging because (a) activities have been implemented on an *ad hoc* basis; (b) there has been inadequate funding for nutrition-related activities; (c) there is lack of a continuous process through which nutrition concerns find their way to the national planning processes; and (d) other policy documents (e.g. the PRSP and the Development Plans) take a limited view of nutrition as an output rather than an input to development.

Capacity building for food security and nutrition is required in various government ministries at headquarters and district level, NGOs and CBOs, religious organizations and the general citizenry. Districts will be the main sources of primary data on food and nutrition, and will eventually be responsible for implementation of interventions. It is proposed that $0.5 million be allocated to each district, bringing the total to $36 million per year. It is also estimated that ministries' headquarters will require $5 million every year to develop capacities of technical staff capable of data collation, statistical analysis, and continuous monitoring and evaluation.

Table 2.3: Summary of costs

Interventions	Annual expenditure (US$ million)	2005-2015 (US $ million)
AGRICULTURAL PRODUCTIVITY		
Investing in Soil Health	73.4	807.4
Water Harvesting and Utilization	146	1,606
Improve Seed	11.6	127.6
Extension Development	43	473
Agricultural Research	17	187
Total for Agricultural Productivity	291	3,201
RURAL INCOME GENERATION		
Storage Facilities	0.6	6.6
Livestock Enterprises	137	1,507
Credit and Rural Financial Services (revolving funds)	95	175
Food/Cash for Work on Agricultural Infrastructure	36	396
Community Centres-cum-Farmer Training Centres	2.3	25.3
Development of Markets for Agricultural Products	3	33
Total for Rural Income Generation	274	2,143
NUTRITION INTERVENTIONS		
Children Aged 0-24 Months (600,000)	22	242
Children Aged 2-5 Years (1.13 million)	40	440
School Meals (1.4 million)	13.5	148
Pregnant Women and Lactating Mothers (100,000)	2.6	29
Supplemental Feeding for orphans and sick (1 million)	26	286
The Elderly (180,000)	9	99
Emergency Food Assistance/Famine Relief (5 million)	135	1,485
Total for Nutrition Intervention	248	2,729
CAPACITY BUILDING		
Capacity Building at Ministry Headquarters	5	55
Capacity Building in Districts including NGOs and CBOs	36	396
Total for Capacity Building	41	451
GRAND TOTAL	**854**	**8,525**

2.4 Investment Plan

The MDG on Hunger is to reduce the number of hungry people by 50% by 2015, but the government has decided to accelerate the process by reducing the percentage of food poor people from 51.4% in 2005 to 23.3% in 2010 and 10% in

2015 and eliminate food poverty altogether by 2020. The resource estimates in the ERS and SRA are not sufficient to meet the targets set by the government in mitigating hunger. An additional $8.3 billion is required in the next 11 years if the set goal for hunger reduction is to be realized. In this connection a Fast Track Action plan has been designed by the Agricultural sector Ministries and the Development Partners called "'Njaa Marufuku Kenya" to be implemented during the rainy seasons of 2005 (see annexe 1B for details).

2.4.1 Cost Sharing Between Government and Beneficiaries

Table 2.4 shows the proportion of costs borne by the government and beneficiaries. The Government will meet the cost of infrastructure, farmer support services and social welfare programmes; while smallholders will pay for materials and services directly benefiting them, such as fertilizers, improved seed, AI and credit. Government should ensure farmer access to inputs and services at affordable rates. Out of the total investment, farmers will pay $966 million (12%) and the government $7,285 (88%).

Table 2.4: Cost sharing between government and beneficiaries

	Annual (US$ million)		2005-2015 (US$ million)	
Interventions	Beneficiaries	Government	Beneficiaries	Government
AGRICULTURAL PRODUCTIVITY				
Investing in Soil Health	73.4	--	807	--
Water Harvesting and Utilization	--	146	--	1,606
Improve Seed	11.6	--	128	--
Extension Development	--	43	--	473
Agricultural Research	--	17	--	187
Total for Agricultural Productivity	85	206	935	2,266
RURAL INCOME GENERATION				
Storage Facilities	0.6	--	7	--
Livestock Enterprises	12	125	132	1,375
Credit and Rural Financial Services	95	--	175	--
Food/Cash for Work	--	36	--	396
Community Centres/FTCs	--	2.3	--	25
Development of Markets	--	3	--	33
Total for Rural Income Generation	107.6	166.3	314	1,829
NUTRITION INTERVENTIONS				
Children Aged 0-24 Months	--	22	--	242
Children Aged 2-5 Years	--	40	--	440
School Meals	--	13.5	--	148
Pregnant Women/Lactating Mothers	--	2.6	--	29
Supplemental Feeding orphans/sick	--	26	--	286
The Elderly	--	9	--	99
Famine Relief	--	135	--	1,485
Total Nutrition Intervention	--	248	0	--
CAPACITY BUILDING				
Capacity Building - Headquarters	--	5	--	55
Capacity Building - Districts	--	36	--	396
Total for Capacity Building	--	41	--	451
GRAND TOTAL	193	661	1,249	7,275

CHAPTER 3

EXPANDING OPPORTUNITIES FOR QUALITY BASIC EDUCATION TO ALL KENYANS

3.1 Introduction

The Millennium Development Goal (MDG) on education is to ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling. The indicators are (a) net enrolment in primary education – boys, girls, (b) proportion of pupils starting grade 1 who reach grade 5 – boys, girls, and (c) literacy rates of 15- to 24-year-olds – women, men. Apart from Universal Primary Education (UPE), Goal 3 on promotion of gender equality and empowering women aims to eliminate gender disparity in primary and secondary education by 2005 and at all levels of education by 2015.

The Government, through the Ministry of Education, Science and Technology (MOES&T) has set six goals in order to achieve EFA by 2015, which are to:

(i) Expand and improve Early Childhood Development and Education (ECDE) by 2010;
(ii) Ensure that all children, particularly girls, have access to and complete quality primary education by 2015;
(iii) Ensure that learning needs of all young people and adults are met through equitable access to appropriate learning and life-skills programmes by 2010;
(iv) Achieve 50% improvement in adult literacy, especially for women and equitable access to basic and continuing education for all adults by 2015;

(v) Eliminate gender disparities in primary and secondary education by 2005, and achieve gender equality in education with focus on ensuring girls' full and equal access to, retention and achievement in basic quality education by 2015; and

(vi) Improve the quality of education and ensure excellence so that measurable outcomes are achieved by all, especially in literacy, numeracy and essential life skills by 2010.

3.2 Situational Analysis

The provision of education and training to all Kenyans is fundamental to the success of the Government's overall development strategy. First, the long-term objective of the Government is to provide every Kenyan with basic quality education and training, including 2 years of pre-primary, 8 years of primary and 4 years of secondary/technical education. Second, development of quality human resource is central to the attainment of national goals for industrial development. Education also aims at enhancing the ability of Kenyans to preserve and utilize the environment for productive gain and sustainable livelihoods. Third, the realization of universal access to basic education and training ensures equitable access to education and training for all children, including disadvantaged and vulnerable groups. Fourth, education is necessary for the development and protection of democratic institutions and human rights.

Since independence in 1963, the number of students enrolled at various levels of education has substantially increased. At the ECDE, enrolment grew from 483,148 children in 1982 to 894,295 children (420,741 girls and 473,554 boys) in 2003. At the primary level, enrolment grew from 891,533 pupils in 1963 to 7.2 million pupils (3.5 million girls and 3.7 million boys) in 2004. Primary school enrolment rates show great disparity across regions and gender, being particularly low among girls in arid and semi-arid regions. In addition, output and quality assessment studies reflect problems of quality in teaching and learning.

Enrolment in secondary education rose from 30,000 students in 1963 to over 862,907 students in 2003. The number of public secondary schools has also increased from 151 at independence to 3,661 today. Based on the 1999 census, a total of 2.8 million boys and girls aged between 14 and 17 years who should have been in secondary school were not enrolled. There is massive emerging pressure to substantially expand total secondary enrolment due to the larger number of students that will be passing through primary school following the introduction of FPE, combined with government's stated policy intent of increasing the transition rate from primary to secondary from the current 54% to 70%. However, despite increased enrolment at the three education sub-sectors, these sub-sectors are still

faced with issues of access, equity and quality, especially the poor access to secondary education.

The proportion of people with special education needs in Kenya is estimated at 10% of the total population, and about 25% of these are children of school-going age. Enrolment in special education is low. Out of a total population of about 750,000 school-going age children with special needs, only an estimated 90,000 have been assessed to establish the nature of their special needs. Of this number, about 26,885 are enrolled in educational programmes. This implies that over 95% of children with special needs are at home. At the tertiary level, the enrolment level of people with special needs is very low. There is need therefore to strengthen mobilization and awareness programmes to eradicate taboos and beliefs associated with disability, as well as develop and implement a flexible curriculum that is child-centred and friendly to this category of learners. In addition, there is an urgent need to make all learning institutions truly inclusive by removing the key barriers.

Total enrolment in public Technical, Industrial, Vocational and Entrepreneurship Training (TIVET) institutions has increased to over 79,000 in 2003. Female enrolment constituted 44% of the total, but there exists serious gender disparities in terms of overall enrolment in science and technology-related professions. The bulk of female students (52.4%) are enrolled in business studies-related courses compared to less than 5% in engineering programmes.

Due to the limited places available in TIVET institutions, only a small proportion of eligible school leavers are absorbed. Every year less than a half of those graduating from the primary schools either join the Youth Polytechnics for artisan training or enrol directly for apprenticeship training within the 'Jua Kali' sector. There is thus a need to develop quality skills development programmes through TIVET institutions that target this group. This will enable them to engage in productive employment in both the formal and informal sectors.

Enrolment and growth in universities have been increasing since the establishment of the University of Nairobi in 1970. The total enrolment in public universities has increased from 3,443 students in 1970 to 58,017 students (18,317 females and 39,700 males) in 2003/04. In private universities, the total enrolment for 2003/04 was 9,541 students (5,128 females and 4,413 males). In the 2003/04 academic year, the total number of those enrolled in public and private universities rose to 67,558. However, despite the rise in enrolments, the transition rate from secondary level to university still remains low, at 12%. Female students constitute 32% of the total enrolment in public universities and 54% in private universities.

The main challenges facing Non-Formal Education (NFE) relate to the low quality of education offered and lack of linkage with the formal education system. The sub-sector has inadequate teaching and learning resources, poor physical facilities and

low prioritisation by Government in terms of budgetary allocations. Following the implementation of FPE in 2003, a total of 1.2 million out-of-school children were absorbed in public schools and 200,000 in NFE centres. This still left 1.5 million children not enrolled in any form of schooling. Many of these children may not opt to enrol in formal primary schools for various reasons, and it is therefore imperative to provide more learning opportunities for the out-of-school children as well as creating a strong linkage with the formal education system.

The teacher-training sub-sector has also grown with an enrolment of 16,794 students (8,515 females and 8,279 males) in the 21 public colleges in 2003, up from 14,316 in 1999. The 8 private training colleges had a combined intake of 2,222 students (1,178 females and 1,044 males) in 2003. The enrolment of female and male students in diploma colleges in 2003 was 935 and 1,185, respectively. However, employment upon graduation from Teacher Training Colleges (TTCs) is not guaranteed, as the number of graduating teachers does not match the established vacancies available in schools.

The 1999 Population and Housing Census estimated that there were 4.2 million illiterate adults in Kenya. Illiteracy manifests itself more dramatically among the poor particularly women who constitute 61% of the total illiterate population. Regional disparities also exist in literacy levels among adults, with women in the Coast and North Eastern provinces showing the lowest literacy levels. Additionally, enrolment in the adult literacy programme has been characterized by declining rates. In 1979 when the national literacy programme was launched, the total enrolment was 415,074. Twenty years later, the total enrolment had dropped to 101,261. The enrolment in 2001 was even lower, at 93,052. Every effort requires to be made to reduce the number of illiterate Kenyans and to ensure that the education offered is of acceptable quality.

Although there is almost near-gender parity in the primary education cycle, the lower scholastic progression rate for girls from primary to secondary education means that the gender ratios are not maintained at the secondary school level. The relatively low access of girls to postsecondary wage employment and tertiary education institutions is largely determined by their performance and the choice of subjects in secondary education (which may be limited by facilities e.g. laboratories). Girls normally do better than boys in English and Swahili, but the boys do better in all the other subjects. In addition, the choice of subjects in secondary school is restricted by their pass rates in various subjects at the end of the primary school cycle. There are other household-based factors that may explain the fate of women after secondary school, but the foundation for what girls become in their adult life appear to lay in their choice of subjects and performance at the end of the secondary school cycle.

3.3 Challenges and Concerns in Education Sector

3.3.1 Free Primary Education

The introduction of FPE in January 2003, following the passing of the Children's Act in 2001, has led to significant educational achievements. Enrolments in public primary schools increased significantly from 5.9 million in 2002 to 6.9 million in 2003 - a 17% increase; representing a Gross Enrolment Rate (GER) of 99% (102% girls; 97% boys). The Government provides funds, through both the School Instructional Management Book Account (SIMBA) and the General Purpose Account (GPA), to procure needs-based materials and improve on some infrastructure, thereby raising the quality of education.

Despite this performance, primary education continues to experience a number of challenges, such as overstretched facilities, overcrowding in schools especially those in urban slums, ASAL areas and pockets of poverty, high pupil-teacher ratios, high cost of special equipment for children with special needs, diminished support by communities, gender and regional disparities, increased number of orphans in and out of school as a result of HIV/AIDS, poor management, and internal inefficiency that negatively impacts on access, equity and quality. In addition, most parents are under the impression that it is the Government's exclusive responsibility to provide all the necessary resources to support the primary education sub-sector. This misunderstanding needs to be addressed.

There is need for a sustained support to FPE programme if the sector is to meet the present challenges. To improve access and retention, there will be need for appropriate teaching and learning environments, suitable furniture, water and sanitation, and improved deployment of teachers to achieve reasonable class sizes. Increasing access has to be directed towards the ASALs and other pockets of poverty e.g. urban slums.

In order to address the above challenges, the Government is already undertaking certain measures such as providing additional support to low-cost boarding schools in ASALs; providing special capitation grants for special education; providing support to NFS institutions offering the primary school curriculum in slum areas; mobilizing resources from development partners in support of the FPE initiative; and improving school health and nutrition in collaboration with the Ministry of Health.

The process of consultation, through the Sector Wide Approach (SWAP) has begun, but there is a need to build on and strengthen this consultation and coordination. There are weaknesses in the areas of sector analysis, policy and planning, and overall system monitoring and evaluation. There is need for closer coordination within the

education sub-sectors in MOES&T, with the various line ministries (such as Finance, Planning and National Development, Labour and Human Resource Development, Health, Water, Local Government and Gender, Sports, Culture and Social Services), and to extend consultations to key stakeholders such as parents, NGOs, CBOs, faith-based organizations and the private sector. It is also essential to strengthen the capacity of school management committees (SMCs), head teachers and District Education Officers (DEOs) for the success of FPE.

3.3.2 Disparities in Education and Training

There has been a marked growth in the general enrolment rates especially at the primary school level due to the introduction of FPE. However, both regional and gender disparities are evident especially in the ASAL districts, pockets of poverty, and urban slums. Primary education also faces challenges in retention, completion and attainment rates. Increasing poverty and the HIV/AIDS pandemic have also resulted in high dropout and low completion rates.

While the primary level participation rates are close to gender parity, there are wide gender gaps at the secondary, TIVET and university levels. There is therefore need for targeted support programmes for girls, fight against retrogressive or discriminative cultural practices, and to embrace affirmative action as a strategy to address existing inequalities affecting females, disadvantaged communities and the disabled. There is need to increase the enrolment of girls at all levels of the education system; boost retention and completion rates for girls; improve performance of girls in national examinations; reduce the gap in participation; improve the performance of girls in mathematics and science in primary and secondary schools; improve awareness and support for girls' education; and provide gender-sensitive teaching and learning materials and resources by creating linkages with Government, publishers, development partners and communities.

3.3.3 Quality and Relevance of Education and Training

The education system is dominated by examination-oriented teaching, where passing examinations is the only benchmark for performance because there is no internal system of monitoring learning achievements at other levels within an education cycle. This implies that there is need to set up internal systems of monitoring learning achievements for primary school children, so that it will be possible to plan for any intervention measures. In addition, performance in KCPE and KCSE has been low over the years, particularly in mathematics and sciences. This is manifested in the low transition rates to secondary and university.

3.3.4 Adult Basic Education (ABE) and Non-Formal Schools (NFS)

The ABE and NFS offer opportunities for those outside the formal school system to benefit from education. One of the benefits of a successful adult education system is that once parents become literate, they will value taking their children to school. However, access and equity in ABE and NFS are characterized by low

participation rates, and regional and gender disparities that arise from a long history of neglect. The quality and relevance of ABE and NFS is affected by lack of a clear policy, a negative image, lack of clear transition mechanisms, inadequate resources, unqualified teachers, lack of teaching and learning materials, lack of quality assurance mechanisms, and uncoordinated large number of service providers.

Currently, there are initiatives by Government that are directed towards providing support to some NFS schools that comply with the Ministry's requirements on accountability. The Government is also selectively providing teachers to ABE programmes and teaching and learning materials have been developed for accelerated learning. Under both NFS and ABE, the Government is carrying out a needs assessment to determine the level of literacy among Kenyans. Finally, the Government has developed a post-literacy curriculum and an accelerated curriculum for those wishing to re-enter the formal education system.

3.3.5 Special Education

Special education has for a long time been provided in special schools, special units attached to regular schools, and more recently through inclusive settings in regular schools. However, special schools and units only cater for children with special needs in the areas of hearing, visual, mental or physical challenge. This leaves out other areas of special needs such as autism, multiple handicapped, specific learning difficulties, and communication disorders.

The main challenges relating to access and equity include lack of clear guidelines on the implementation of an all inclusive education policy, lack of data on children with special needs, and inadequate tools and skills in identification and assessment. The situation is compounded by inappropriate infrastructure, inadequate facilities, and lack of equipment that make it difficult to integrate special education in regular programmes. The sub-sector is also characterized by inadequate capacity among many teachers to handle children with special needs, lack of co-ordination among service providers, inappropriate placement of children with disabilities, inadequate and expensive teaching and learning materials, and inadequate supervision and monitoring of special education programmes.

The Government is currently implementing measures aimed at improving the participation of children with special needs. Under the FPE, additional capitation grants are provided to physically challenged children enrolled in special education institutions and units attached to regular primary schools. In addition, the Government continues to train primary school teachers in special education as well as training teachers at university level in order to improve the national capacity. In order to increase access and improve quality, there is need to:

Box 3. 1:Strategies for improving access to /quality of special education.

- Rehabilitate and strengthen the assessment programme in order to facilitate identification and placement of learners with special needs;
- Integrate special education programmes in all learning and training institutions and ensure that the institutions are responsive to the education of learners with special needs;
- Collaborate with and coordinate other providers of special education;
- Provide instructional materials through the waiving of duty on specialized equipment and materials as well as provide incentives for local production of such equipment as a way of reducing the cost of providing special needs education; and
- Ensure that the national policy comprehensively defines areas of all special needs.

3.3.6 Management of Education and Training

There is a wide range of education and training managers and stakeholders involved in the management of education institutions in Kenya. As a consequence, it is necessary to decentralize some of the functions to the district and school level managers and also clearly separate roles and functions of the various actors in the sector. The Ministry should handle issues relating to policy development, curriculum design, monitoring and evaluation, and quality assurance. Issues relating to day-to-day operations, local supervision and resource mobilization as well as counselling of students and staff should be left to local stakeholders with backstopping services from the Ministry and other national level actors.

3.3.7 Human Resource Development

In order to provide efficient education and training services, the capacity and skills of staff in the various offices and organizations involved should be commensurate with the tasks they perform. Currently, the MOES&T faces various challenges with respect to human resource development and management. In addition, there is no adequate information and skills inventory to guide those who carry out deployment functions. Further, while KESI is charged with the responsibility of training and in-servicing education managers, it does not have adequate human and financial resources to undertake this task effectively. In order to strengthen the capacities of the human resource involved in the discharge of education services, there is need to expedite the decentralization of education services and deploy senior and experienced managers to lower level structures; expand the capacity and programmes of KESI to provide in-service training to all heads of education and training institutions and other personnel involved in the various aspects of institutional management; and ensure that all persons serving as members of school committees and BOGs are exposed to focused training educational institution management.

3.3.8 Teacher Management

The teacher training programmes cater for the development of teachers for pre-primary, primary, secondary, special, vocational and technical education. The primary school teachers are trained to teach all the subjects offered in the primary school curriculum. However, the content is too wide while at the same time acquiring the requisite pedagogical skills. In addition, there is the need for Primary Teacher Education college curriculum to encompass emerging issues such as HIV/AIDS education, drug and substance abuse, among others. The curriculum for this level should place more emphasis on child-centred approaches in teaching so as to enhance both quality and motivation.

3.3.9 Information and Communication Technology

Information and Communication Technology (ICT) skills play a key role in promoting economic development of a country. Against this background, education should be made the natural platform for equipping the nation with ICT skills in order to support a dynamic and sustainable economic growth. To facilitate faster dissemination of ICT skills, there is need to work with other stakeholders in establishing ICT capacities across the country. In turn, this will facilitate the use of education institutions as hubs of ICT dissemination in rural areas.

3.3.10 Cost and Financing Education and Training

The financing of education and training encompasses all financial outlays by central and local Government, the private sector, NGOs, households, communities, and external donors. The average Government spending on education and training, excluding the share by households has ranged between 5% and 7% of GDP. At the national level, the recurrent Government spending on education has been higher than any other social sector spending. In addition, education recurrent budget has risen from 35% of public sector recurrent budget in 2000 to 40% in 2004. There is therefore need to prioritise spending within the sector and to have detailed and rationalized costing of these programmes in line with the resource envelope.

3.4 Proposed Interventions

At present, the main MOES&T spending areas are primary education including teacher salaries that takes about 52% of the total education budget (recurrent plus development), followed by secondary education (about 25%), and the university sub-sector (capitation grants to the universities, and to Higher Loans Board for student loans and bursaries). Thus, the most important part of the projection of costs and resource requirements for education represents the costs of primary and secondary teacher salaries, as these teacher costs together represent about 4.6% of GDP.

The Government should continue to provide capitation grants for instructional materials as well as for general purposes for NFS. The proposed programmes include investment in national NFS coordination, teacher support, and revision of the NFE curriculum. Investment in ABE will entail close collaboration between MOES&T and the Ministry of Gender, Sports, Culture and Social Services (MGSC&SS). Currently, the MGSC&SS plans a series of interventions in ABE, which include advocacy, provision of quality ABE, hiring of part-time teachers, development of an examination system, and networking within ABE.

The proposed investment support programmes for special education will include a national survey in order to determine the children with special needs, and to determine the equipment needs. Other proposed investment programmes will include teacher training in order to handle children with special needs, provision of equipment, teaching and learning materials to resource centres and special institutions, grants to special schools, running costs for resource centres, and capacity building for advocacy and awareness creation.

The MOEST proposes the following quality assurance, control and standards for its programmes:

Box 3.2:MOEST's proposals for quality assurance, control and standards

- Improved school-based supervision whose objective involves organizing subject-based in-service courses with the aim of imparting special skills in methodology;
- Enhanced quality assurance and control, to ensure that learning processes are relevant to the needs of society and achievable with available resources;
- Monitoring and evaluation of MOES&T programmes, to take stock of levels of achievement attained against the objectives. It also entails ensuring quality control of teachers' curriculum delivery, teaching/learning materials, and the school environment;
- Action research on teaching and learning methodologies to improve education standards and performance; the aim is to ensure that teachers use appropriate teaching methods and techniques, correct interpretation of the syllabus, proper preparation and planning, and appropriate mastery of subject matter/content;
- Development of a national accreditation system and a national assessment system for continuous professional development;
- Implementation of Student Achievement Monitoring Programme (SAMP), to facilitate quality improvement by assessing learning outcomes, and the acquisition of minimum learning competences, at each grade level;
- Review of ABE and NFS examinations;
- Establishment of an educational broadcasting channel at KIE;
- Establishment and operationalization of a national assessment system; and
- Adoption of alternative teaching approaches such as multi-grade, double shift and mobile schools in order to enhance access and retention. Multi-grade teaching is suitable in areas with low enrolment and/or few teachers; double shift where enrolments are high and there are limited classrooms; and mobile schools within nomadic communities.

The proposed programmes under ICT and monitoring and evaluation will entail investment in Educational Management Information System (EMIS) and monitoring the whole investment programme to ensure that the set objectives are monitored. The other costs that need to be included are future costs of administering the education and training system and the teachers' salaries both at primary and secondary school levels. These costs are recurrent in nature and constitute a high proportion of total investment in education and training.

3.4 Resource Requirements

In order to achieve EFA by 2015, there will be need for substantial investment in education and training at ECDE level, primary school level, secondary school level, NFS, ABE, special education, HIV/AIDS, capacity building, quality assurance and standards, health and nutrition, school feeding, and monitoring and evaluation. In addition, substantive resource requirements will be required to meet the recurrent costs for administering the investment programme and payment of teachers' salaries. The proposed investment programme entails both enhancement of ongoing initiatives (e.g. FPE) and new initiatives (e.g. capacity building).

Table 3.1: Summary of Indicative Education Costs: 2005/06 – 2014/15 (Million KShs)

Category	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
ECDE	343	478	494	437	180	186	193	200	207	214
Primary Education and Mobile Schools	8,702	9,512	9,390	9,132	9,055	9,372	9,699	10,039	10,390	10,753
Secondary Education	3,206	3,206	3,041	3,041	3,041	6,295	6,515	6,743	6,979	3,206
Adult Basic Education	149	198	298	308	428	443	458	474	491	508
HIV/AIDS	2,699	2,870	2,741	2,469	2,469	2,469	2,469	2,469	2,469	2,469
Special Education	637	648	607	606	606	627	649	672	696	720
Capacity Building	616	682	930	690	722	740	773	793	828	849
Quality Assurance and Standards	870	594	419	434	440	465	475	485	496	507
Non-Formal Schools	46	69	56	18	25	26	27	28	29	29
School Feeding, Health and Nutrition	1,605	1,651	1,651	1,651	1,651	1,651	1,651	1,651	1,651	1,651
Monitoring and Evaluation	12	12	10	10	10	10	11	11	11	12
Administrative and Teachers Costs	9,186	9,507	9,840	10,184	10,541	10,909	11,291	11,687	12,096	12,519
GRAND TOTAL	**28,071**	**29,427**	**29,477**	**28,980**	**29,168**	**33,193**	**34,211**	**35,252**	**36,343**	**33,437**

CHAPTER 4

GENDER EQUALITY AND WOMEN EMPOWERMENT

4.1 Introduction

The Millennium Development Declaration commits member countries to promote gender equality and the empowerment of women as effective ways to combat poverty, hunger and disease and to stimulate development that is truly sustainable.

MDG Goal 3 focuses on women and girls' historical disadvantage and identifies men and boys as strategic allies in transforming the factors causing this disparity. The gender equality goal mainly focuses on eliminating gender disparities in education at primary, secondary and tertiary levels, in addition to adult literacy. The gender goal also incorporates indicators which address persistent gender differences in labour market opportunities, legal rights, and the ability to participate in public life and decision making e.g. the share of women in wage employment in non-agricultural sector and proportion of seats held by women in national parliament.

The concept of empowerment is related to gender equality but distinct from it; empowerment lays in the ability of a woman to control her own destiny. This implies that to be empowered, women must not only have equal capabilities and equal access to resources and opportunities, but must also have the space to use those rights to make choices and decisions provided through leadership opportunities and participation in political institutions.

4.2 Gender Equality and Women Empowerment Profile

Glaring gender gaps exist in access to and control of resources, in economic opportunities and in power and political voice. Overall, women continue to have less access to social services and productive resources than men. Women remain vastly underrepresented in parliament and local authorities and account for 8.3% of the seats in the National Assembly. Girls are less likely to attend school than boys. Even when there is gender parity at lower classes in primary school, girls drop out, often due to unwanted pregnancy, poverty mainly accentuated by deaths of parents due to HIV/AIDS, and very often due to heavy domestic workload. There are also large wage gaps and only a small proportion can be explained by gender differences in education, work experience or job characteristics.

4.2.1 Women and the Economy

Women comprise over 51% of the total population and over half of the labour force. Despite this, their recorded contributions to GDP continue to be minimal.

Most women are still engaged in subsistence and smallholder agricultural production, and the care economy. However, women's labour is not adequately captured or recognized in the system of national accounts, nor rewarded. This also applies to women's household chores such as cooking, fetching firewood, collecting water and care for other family members, including reproductive roles and childcare. The Central Bureau of Statistics (CBS) has recently embarked on developing measures to capture data on women's contribution to GDP into the national accounts, in addition to the regular data on wage employment in both agricultural and industrial sectors and the routine disaggregating of survey data by sex. The CBS is however constrained by its current capacity, insufficient staffing, and lack of skills in gender analysis.

During 1998/1999, the labour force participation rate was higher for males at 84.5% compared to 80% for females. The male labour force participation rates were lower than for females for age groups 15-19 and 20-24, and the reverse was true for all other age groups. This shows that women start working much earlier than males. Although on average the male labour force participation rates have remained higher than those for females, the gap between them is gradually narrowing. The CBS data on wage employment shows that the proportion of women employees in the modern sector has remained stagnant at around 29.5% during 2000-2003. The Government undertook to enhance the participation of women in both labour force and employment. The country has recorded some level of success, but there is a need to increase women's labour force participation rates.

4.2.2 Women and Health

The objectives of Kenya's health policy include the reduction of morbidity and mortality, reduction of fertility, and promotion of primary healthcare. The decentralization of management of health facilities and financial resources to the districts has created an enabling environment for the implementation of healthcare activities including safe motherhood. The success of reproductive health policies was reflected in fertility declines from a total fertility rate of 8.0 children in 1977 to 4.7 children in 1998. However, decline in donor funding led to deterioration of services and shortage of contraceptives. In addition, factors such as non-involvement of men have continued to undermine the family planning programme; while failure to target adolescents and youth has resulted in unwanted pregnancies and the consequent illegal abortions. The earlier gains are being eroded, leading to increased fertility and reduced life expectancy for both males and females. The understaffing and poor quality of health services, coupled with cost-sharing policies, has constrained women from using health services especially in the rural areas.

Maternal mortality has been increasing in the last decade. Maternal mortality is mainly due to inadequacies and/or deficiencies in implementation of reproductive

healthcare. More than half of public health institutions are poorly equipped to handle pregnancy-related complications, while only about 42% of pregnant women have births attended to by skilled personnel. This means that most deliveries take place at home assisted by poorly skilled traditional birth attendants. Adolescents and youth lack appropriate information and services to respond to their reproductive health needs and engage in unprotected sex, experience the highest levels of STIs, unwanted fertility, risk complications in pregnancy and delivery, and are the leading contributors to abortion and abortion-related mortality. To reduce bring down the high maternal mortality, the government has to address several challenges including the need to ensure the availability of adequate maternity services and to address complications caused by unsafe/induced abortion, malaria, and HIV/AIDS, among others.

4.2.3 Women and HIV/AIDS

The HIV/AIDS is a severe health problem in Kenya. Virtually, all aspects of development have felt its impact within households, communities and at the national level. On a positive note, recent information indicates that its prevalence has slightly declined, although it is still higher for women than men. Women are more vulnerable than men to HIV/AIDS both due to biological factors and socio-cultural barriers to women's autonomy such as expectations for a wife to satisfy their husbands on demand; women are not expected to discuss sex or make decisions about sex; ignorance about sex is seen as a sign of purity while too much knowledge is a sign of immorality; women may be pressured into having sex as a sign of love and obedience; woman rarely have a say on whether to use a condom; insistence on condom use invites suspicion of infidelity; violence against women and multiple partners may be culturally acceptable; men tend to seek younger partners to avoid infection; and sex with a virgin is believed to cure AIDS.

4.2.4 Violence Against Women

A nationwide surveys undertaken by Population Communication Africa, in association with the National Council of Women of Kenya during the period 2001/2002 revealed that gender abuse and violence continues to be a widespread phenomenon among Kenyan women and girls. In particular, domestic violence continues to be the most common form of violence in Kenya, with men being the main perpetrators. Physical and sexual assault is most common among young girls particularly at puberty, and is perpetrated by older males within homes and schools. For many adolescent girls and young adult women, further abuse episodes are associated with early marriage, from intimate partners or male relatives. Expectedly, both physical and sexual violence and abuse were commonly reported among the young and vulnerable than older, stronger or more powerful young adults. According to police records, the number of reported cases of rape and attempted rape rose steadily from 1,050 in 1997 to 2308 in 2003. During the same period cases

of assault and battery increased from 10,288 in 1997 to 13,401 cases in 2003. The number of women who sought legal aid from FIDA has also increased in the recent past.

The above trends demonstrate a heightened awareness among the victims as well as the general public that rape and battery are criminal offences which must be reported and punished, resulting from the intensified education and awareness created by the anti-violence crusaders in both government and NGOs.

4.2.5 Education and Training

The national education policy emphasizes the right of every child to education and the duty of the Government and parents to ensure this. The Children's Act (2001) ranks provision of basic education as a basic human right that every Kenyan child should enjoy. The Act promotes equal educational opportunities for both girls and boys through provisions for addressing cultural, religious, and other forms of biases particularly against girls. Education is currently undergoing reform to improve the quality and internal efficiency.

Currently, it is not compulsory for all children to pass through early childhood education institutions in order to qualify for primary school. Although there is low gender disparity in enrolment, the national average enrolment of 35% is low and there are major regional disparities, with ASALs and urban slums recording the lowest enrolment rates. Since the burden of pre-primary education is borne by households, there is higher access by children from non-poor families while poor families (dominated by female-headed households) are at a disadvantage. Despite the free primary education, the children from poor families are denied this foundation to education and hence experience difficulties in coping with primary education.

Primary educational has shown impressive gains in enrolment since independence and currently has achieved near gender parity. There was also a large increase in enrolment due the introduction of free primary education programme in 2003, although this has led to overcrowding and overstretched facilities, teachers and financial resources. However, some regions still have low enrolment and high dropout rates for girls due to customary values, limited infrastructure and amenities especially water and sanitation, and the burden of household responsibilities. Girls also drop out of school on account of pregnancies, early marriages and gender violence within communities and school environments.

In the secondary education sector, the secondary-school age population has been growing more rapidly than enrolment in the secondary education cycle. Boys outnumber girls, though by a small margin, due to limited secondary school opportunities for girls, high cost of education which forces poor parents to invest in boys' education, patriarchal values and practices leading to preference for sons

compared to daughters, dropouts due to pregnancy and early marriage, while HIV/AIDS also force girls to drop out of school to work and care for sick relatives.

The data on enrolment in the polytechnics and technical training institutes shows that the ratio of female enrolment to total has slightly increased from 30.4% in 1997/98 to 39.4% in 2003/04. Although the proportion of female students shows an upward trend, their numbers are still too low, mainly on account of traditional attitudes and practices which discourage girls from enrolling in mathematics and sciences, and limited facilities supporting technical subjects in girls' schools.

Kenya has five public universities with an enrolment of over 52,408 in 2003/2004. The ratio of females has increased from 27.8% in 1995/96 to 30.8% in 2003/04. The relatively lower admissions of female students into universities reflect the cumulative effects of the factors that hinder girls' participation and performance at primary and secondary school levels. The recent decision to put the cut-off points for female students at one point lower than their male counterparts during admission aims to narrow this yawning gender gap.

Total enrolment in private accredited universities has increased from 3,646 in 1997/98 to 8,021 in 2003/04, while their proportion of female students has increased from 50.3% to 54.5% during the same period. It is notable that private universities, which charge higher fees compared to public universities, have slightly higher female students than males.

4.2.6 Women in Power and Decision Making

Over the years the Kenyan women has been grossly underrepresented in both the political and other leadership spheres. In 1998, women constituted only 4.1% of members of parliament, but this has increased to 18 women or 8.3% of the total. Some of the barriers to women's representation in parliament are traditional cultures (which fail to support women leadership), the high costs of mounting election campaigns, lack of campaign and leadership skills, and lack of information. A disconnect within the women's movement also robs them of valuable support from the women constituency.

In the recent past, the Government has appointed women to key positions, but this is still below expectations. As of June 2003, the proportion of women in the judiciary was 36.4%, where most of them are in the rank of the chief magistrate and below. As there are no quotas or policy on affirmative action in this area, the appointment of women to senior positions is the prerogative of appointing authorities, mainly the President.

4.3 The Policy and Legal Environment for Gender Equality and Women Empowerment

4.3.1 Policy Framework

Those economic sectors dominated by women and the poor are at the periphery of the economy and have meagre investment resources. The greatest obstacle in achieving Gender Equality and Women Empowerment is that most of Kenya's development policies and strategies are grounded and rationalized by the paradigm of gender and regional inequalities.

4.3.2 Women and Poverty

The national policy and legislative environment for gender equality has not changed significantly in the last decade. However, the new NARC administration has slightly widened democratic space through (a) ongoing poverty reduction and wealth creation strategies, (b) strengthening institutions of governance and other legislative reform to reduce inequalities and human rights violations, (c) rehabilitation and expansion of physical infrastructure to increase productivity and enhance opportunities for trade and communication, and (d) investment in human capital through free primary education, the proposed National Social Health Insurance Scheme (NSHIS), and prioritising the fight against HIV/AIDS. The Government has made considerable efforts to enhance the welfare of the poor, especially through the ERS and the PRSP. In addition, the preparation of the Medium Term Expenditure Framework (MTEF) includes key Kenyan stakeholders, with women's participation having improved and gender concerns routinely incorporated in sector plans.

4.4 Specific Policies and Legislation Necessary for Gender Equality and Women Empowerment

4.4.1 HIV/AIDS

The relevant policy documents on HIV/AIDS in Kenya recognizes the gender dimensions of the pandemic, especially the rising prevalence rates among women compared to men, and infection among younger women at an earlier age. However, explicit strategies that focused on gender issues in relation to HIV/AIDS were not included in the development policies and programmes until November 2002 when the gender aspects of the pandemic led to the establishment of the Gender and HIV/AIDS Sub-committee of the National AIDS Control Council (NACC) to put in place strategies for mainstreaming gender into the Kenya National HIV/AIDS Strategic Plan.

4.4.2 Adolescent Reproductive Health and Development Policy

This policy was prepared in 2003 and outlines measures to address the concerns about adolescents and youth raised in various international conventions, conferences and instruments regarding poverty and socio-economic development, participation in the labour market, school enrolment and dropout, the family, migration, reproductive health information and services, HIV/AIDS and sexually transmitted infections (STIs), safe motherhood, unsafe abortions, and harmful practices.

4.4.3 Affirmative Action

The Government is implementing some affirmative actions e.g. in admissions of female students to public universities, and allowing girls who drop out of primary and secondary school due to pregnancies to re-enter and complete their education. However, affirmative actions are selectively implemented without a grand plan for gender equity in all facets of human life.

4.4.4 The Budget

The macroeconomic framework adopted by the Government is a pro-growth strategy that focuses on promotion of access to markets through infrastructure provision, credit and employment generation, increased public resources towards poverty reduction, enhanced security of the poor and vulnerable groups, and human capital development. However, there is no sufficient appreciation of the need for application of gender-responsive budgeting. For example, in 2003, 13 ministries failed to make budgetary allocations for gender activities and 10 ministries did not allocate staff to be responsible for gender units. Only the Ministry of Agriculture and Livestock Development had incorporated gender issues into its functions through establishing Gender Equity Mobilization Units. Furthermore, most ministries do not have staff responsible for the Units on Gender Issues (UGIs).

4.4.5 The National Policy on Gender and Development

This draft National Policy on Gender and Development will facilitate the mainstreaming of the needs and concerns of men and women in all areas in the development process. The policy has made several important suggestions in respect of regulatory and institutional reforms that can be undertaken to ensure that obstacles to equitable sustainable development are removed. The policy identifies key forms of discrimination in respect of customary law, the law of succession, and citizenship as well as cultural biases against women perpetuated by the patriarchal social structure of Kenyan communities. This policy needs to be widely disseminated to Kenyans to create awareness and support for implementation.

4.4.6 Women's Participation in Leadership and Decision-making

Marked progress has been made in this area although more still needs to be done. For example, following the 2002 General Elections, the number of women Members of Parliament doubled from 9 in the 1997 elections to 18 in 2002. This achievement was not confined to the National Assembly, but was reflected in the

various elective positions and in appointments made in the public service including parastatals, the judiciary, the police force and the local authorities.

4.4.7 Free Primary Education

The free primary education programme has accorded equal educational opportunities to boys and girls, resulting in almost gender parity in primary school enrolment. However, more girls than boys still experience obstacles in school enrolment, participation and transition, due to socio-cultural practices.

4.4.8 Governance, Justice, Law and Order

The Ministry of Justice and Constitutional Affairs has included gender in its strategic plan under the Governance, Justice, Law and Order Sector (GJLOS) Reform Programme to make the formal justice system more accessible to the poor and women and strengthen informal/traditional justice system, including removing gender discriminatory aspects and strengthening linkages and crossover between the two systems.

4.4.9 National Plan of Action for Elimination of Female Circumcision

The plan of action, launched by the Ministry of Health, will assist in the implementation of the provision in the Children's Act outlawing female genital mutilation (FGM) through education campaigns mainly focused on girls, their families and communities. Wide dissemination and full implementation of the Children's Act will assist to address violations of children's rights including those that are gender based.

4.4.10 Gender-Disaggregated Data

The Central Bureau of Statistics is the repository of planning information and data. The Bureau has embarked on engendering data collection processes but lacks skills in gender analysis. For example, gender based violence statistics is not disaggregated by sex.

4.4.11 The Legal Framework

The draft Kenya Constitution is a milestone towards achievement of enhanced governance in the country. The key areas in the Constitution on women empowerment include commitments to non-discrimination based race, sex, pregnancy, marital status, health status, ethnic or social origin, colour, age, disability, religion, conscience, belief, culture, dress or language. The draft Constitution also commits the Government to implement affirmative action in policies and programmes to benefit individual or disadvantaged groups in accessing education and gainful employment; participation in governance; and guarantees equal political rights and freedom from discrimination, exploitation or abuse.

The Children's Act 2001 is intended to give effect to the principles of the Convention on the Rights of the Child (CRC), the African Charter on the Rights and

Welfare of the Child, and address related issues such as early marriages, FGM, right to survival, health and medical care, education, protection from child labour, sexual exploitation, prostitution, harmful drugs, and for legal assistance by the Government. Following the enactment of the Children's Act, both boys and girls have been accorded equal education opportunities through the free primary education programme. In addition, the Family Court has been established as a Division of the High Court and is fully operational.

A comprehensive Draft National Employment Policy that mainstreams women's rights in employment and bans child labour has been formulated. In addition, recommendations of a Task Force appointed to review labour laws also address gender imbalances in employment and labour practices.

The Public Officer Ethics Act, 2003 was passed to guide the conduct of public officers, and includes an elaboration of what constitutes sexual harassment and identifies the Public Service Commission as the institution responsible to investigate and take disciplinary actions.

The Domestic Violence (Family Protection) Bill is due for reintroduction in parliament, and provides for judicial intervention in cases of domestic violence, including physical, sexual, psychological harassment, intimidation, and destruction of property. The HIV Bill has been revised, and provides for criminalization of deliberate spread of HIV/AIDS by infected people, and ease of access to services (include life insurance).

4.4.12 Establishment of Key Commissions

The Government established a task force in 1993 to review all laws relating to women. Its recommendations include:

Box 4.1:Recommendations of the government's 1993 task force on laws relating to women

- Recognize full-scale equality between women and men, on matters such as citizenship and personal choice linked to customs;
- Eliminate discrimination in traditions, policies and laws, which violate women's rights, and ease the burden on women of social problems emanating from poverty, unemployment, poor health, child bearing and childcare roles, illiteracy, physical violence and negative cultural practices;
- Implement affirmative action policies in public recruitment, working conditions, education and training and in information and media, both in law and policy, to redress the deeply rooted disadvantages in the domain of governance;
- Remove inequalities in the economic opportunities and policies and in access to resources in all policy instruments relevant to sustainable human development, which Kenya has developed or signed;
- Establish mechanisms to progressively implement policy, administrative and legal reform in the area of gender through oversight, coordination, and monitoring the implementation of legal and policy recommendations and strategies, and work with the Attorney General's Office and the Kenya Law Reform Commission to ensure amendment and development of laws and regulations aimed at removing the sources of gender inequality.

The Kenya National Commission on Human Rights was established by law to promote and protect human rights and ensure that innate rights are not violated; educate, inform and sensitise the public on human rights; and observe the principle of impartiality and gender equity in the course of its work.

The Kenya National Commission on Gender and Development, established under the National Commission on Gender and Development Act 2004 is mandated to coordinate, implement and facilitate gender mainstreaming in national development and advise the Government on gender with the core mandate to undertake lobbying and advocacy, monitoring and evaluation, and oversight for legal reforms on issues affecting women and the girl child.

Kenya is also a signatory to international conventions and treaties, including the Protocol to the African Charter on Human and People's Rights adopted at the July 2003 AU Summit, Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW), Convention on the Rights of the Child (CRC), Commission on the Status of Women, and African Platform of Action. Most of

these agreements have provisions for periodic reporting and domestication e.g. CRC and CEDAW.

4.5 Institutional Mechanisms for Implementation

The existing national machinery for implementing gender and development goal is the Ministry of Gender, Sports, Culture and Social Services (MGSC&SS), which houses the Department of Gender. The National Commission on Gender and Development Act has been passed and the Commission formed and operational. Other relevant institutions include civil society organizations, CBOs, women groups and development partners.

4.5.1 The Government

The Government has the core responsibility for policy formulation, implementation of gender equality interventions, and gender mainstreaming through the MGSC&SS. In 2004, the National Commission on Gender and Development was established through an Act of Parliament to coordinate, implement and facilitate gender mainstreaming in the national development and to advise the Government and other organizations on gender issues.

Prior to the establishment of the department of Gender, the Women's Bureau, a division within the Ministry, was the national machinery for the advancement of women. Its mandate included the formulation, implementation and monitoring of policies on gender issues, coordination of gender-related activities, and collection, analysis and dissemination of sex-disaggregated data, among other functions. The Women's Bureau, however, lacked the capacity to carry out its mandate effectively due its low status, which limited its negotiating capacity for adequate budgetary allocation to support gender equality and women empowerment. Although the Women's Bureau has now been elevated to the Gender Department headed by a Director, there is still gross understaffing, minimum financial resources, insufficient equipment (e.g. computers and vehicles), and lack of capacity in gender analysis.

The Department of Gender coordinates its networking activities through the Units on Gender Issues (UGIs) in line ministries. Although the UGIs were established in most Ministries, they are either ineffective or non-functional due to lack of adequate capacity and resources.

4.5.2 Civil Society Organizations and Local Level Institutions

There are many effective civil society organizations (CSOs) actively involved in coordination and implementation of gender equality. Their activities include development and gender, law and gender, women and politics, and women and

micro-finance. Although these organizations are active in advocacy on the role of gender in the development process and even collaborated in the development of the PRSP, inter-agency interactions between them and with policy makers are not strong. There is need for stronger linkages among the CSOs, and support through capacity building and budgetary allocations. Their main source of support is the international development agencies, a link that perhaps limits their independence in preparing their development agenda.

4.5.3 Development Partners

The development partners continue to give technical and financial support for the programmes and activities geared towards gender issues and concerns in various Ministries and CSOs. The programmes supported include advocacy, capacity building and research activities. The agencies have been supporting gender-mainstreaming programmes with the MGSC&SS, and areas of support include conducting baseline surveys on women empowerment, sensitisation activities in selected districts on gender issues, and dissemination of survey results.

The challenges facing almost all the institutions implementing the gender equality policies and programmes include lack of capacity, inadequate financial and material resources, and weak coordination. In addition, the Gender Focal Points (GFPs) have no specific budgets for gender activities, and the personnel manning the national machinery and the GFPs lack specialized training on gender issues. The national focal point should improve its collaboration, coordination and networking with CSOs and development partners. There will be need for capacity building in all the institutions and allocation of adequate resources for their activities.

A monitoring and evaluation system should be established to strengthen the gender equality and women empowerment agenda. The data compiled by the MGSC&SS is inadequate, and is mostly limited to tabulation of tables by sex. The Gender Department also lacks personnel and skills in gender-based statistical analysis, and most of the work in this area is therefore sporadic and haphazard.

4.6 Challenges to Gender Responsive Reform

There are two challenges to gender responsive reform with ramifications for gender equality: (a) the legacy of violation of gender responsive policies, regulations and laws; and (b) the non-implementation of the findings of the task force on laws relating to women and policies contained in the policy documents e.g. the PRSP.

Kenya is a signatory to and has ratified several international human rights instruments, which should be domesticated into municipal law to ensure gender equality. Key gender discriminatory practices requiring policy/ legal reform include:

Box: 4.2:Key gender discriminatory practices in kenya

Education/ literacy undermined by son preference and early marriage, bride price, division of labour in the household that limits a girl's time to concentrate on education, and enforcement of legislation such as the Children's Act and rational age of marriage;

- Health including reproductive health (early marriages, FGM, son preference in nutrition) and need to amend the Children's Act to make men also legally responsible for children;
- HIV/AIDS regarding widow inheritance, polygamy, and high incidences of sexual abuse and rape; this requires review of matrimonial laws to register all marriage, right to choose spouse, and give same rights and responsibilities in marriage and dissolution;
- Labour and social security regarding perception of women as minors dependent on husbands to justify exclusion from benefits, and discrimination based on pregnancy;
- Agriculture regarding gender-blind policies in provision of extension services and division of labour; this should include addressing the patriarchal inheritance practices and membership in cooperatives;
- Access to property rights: the Succession Act (which excludes agricultural land and produce from its provision), and the Constitution (which permits discriminatory customary and religious laws that limits a woman's access to inheritance). This should be addressed through completing the constitutional review, the national gender policy and its implementation, amendment of the Succession Act, and land tenure legal and policy reform;
- Access to financial resources, whose access is normally limited by lack of access to credit due to lack of collateral;
- Access to leadership and decision-making as a result of non-implementation of gender-responsive policies

4.7 Proposed Gender Responsive Interventions

The human rights approach was used in identifying interventions and programmes for Gender Equality and Women Empowerment.

The interventions have four broad objectives: building the essential capabilities, economic and political opportunities, systemic issues, and provision of security to women to ensure their ability to participate in the economic and political affairs of the country.

The broad interventions to build the essential capabilities include:

Box 4. 3: Gender responsive interventions

- To increase awareness and provide education on women's reproductive health and rights (including negative cultural practices, safe motherhood and family planning services, and sexual maturation education in schools and communities);
- Preventing practices that are harmful to women's sexual and reproductive health and promote rights through legislation (e.g. on equality, domestic violence, FGM, HIV/AIDS, establishment of gender focal points, and sufficient budget for reproductive health); and
- Effective monitoring and implementation of laws protecting women's human rights.

The broad interventions on economic and political opportunities include provision of budgetary and human resources for gender focal points across all Ministries, financial support to women's organizations and ensure access to independent sources of income for women, ensure that social protection schemes reach women on equitable basis as men, ensure the right to own and inherit property (issuance of identity documentation, legislation, enforcement, land titling and registration), promote access to credit and work (equal access to work and pay, recognition of women's responsibility to care for dependants, grievance redress mechanisms), provide access to infrastructure to reduce women's work burden (access to clean cooking fuel and access to safe drinking water), enhance ability to improve political representation, and vocational training for women

The systemic issues include strengthening ministries and government agencies to handle gender issues, implementing international agreements on ending gender discrimination (such as CEDAW, CRC, Beijing Platform of Action), and supporting the set up of data systems to monitor progress towards the gender equality goal.

The fourth objective is the provision of security to women to ensure their ability to participate in the economic and political affairs of the country, which includes preventing violence against women through legislation, awareness campaigns and education; promoting awareness of women's rights to legal redress and state services; improving state responsiveness to incidence of violence and rehabilitation of victims of gender based violence; and provision of counselling services, shelters, rehabilitation services, conciliation and medication services.

4.8 Intervention Costs

Interventions	Total cost estimates in US$				
	2005	2010	2015	% of total in 2015	Total 2005-15
1. Mobilization	17,511,194	18,348,011	19,153,676	10%	202,881,122
2. Institutional strengthening	51,924,215,	52,201,815	53,285,472	29%	575,066,260
3. Lobbying & advocacy	23,758,557	24,074,610	24,427,422	13%	264,901,563
4. Coalitions & support building	62,564,086	62,594,923	62,629,344	34%	688,552,040
5. Research, information & monitoring	25,876,540	26,057,190	26,305,779	14%	286,749,143
Total	**181,634,592**	**183,276,551**	**185,801,693**	**100%**	**2,018,150,128**

4.9 Conclusion

A wide range of interventions, coverage targets and costs has been proposed and fall under the five main categories: (a) social mobilization, awareness creation and sensitisation; (b) institutional strengthening and programme implementation; (c) lobbying and advocacy for gender sensitisation; (d) building coalitions and mobilizing support for policy development, law reform, enactment and implementation; and (e) research, information, monitoring and reporting.

The strategies for mobilizing necessary resources should focus on increased budgetary allocations to the Ministry responsible for gender, budgetary allocations in the sector Ministries towards activities for mainstreaming gender within sectors, and the balance from international development partners as part of their commitment to the Millennium Declaration. Most Kenyan households are experiencing abject poverty, whose prevalence is higher among women, and should not therefore shoulder a big burden in the implementation of the recommended actions. It is however necessary to identify CBOs such as women, welfare and youth groups to collaborate with households in meeting the costs of the proposed interventions. The resources of NGOs and the private sector should also be harnessed, and their efforts coordinated, supported and harmonized.

The cost of gender exclusion will be increased anomie and alienation (due to powerlessness and breakdown of the social fabric); increased abortion; commercial sex work leading to increased abortion and HIV/AIDS; increased gender-based violence; low education particularly for girls; low agricultural productivity; and lack of equitable access to leadership and decision-making.

CHAPTER 5

IMPROVING CHILD SURVIVAL

5.1 Introduction

Goal 4 aims at reducing child mortality and the target is to "reduce by two-thirds, between 1990 and 2015, the under five mortality rate". Several international public health initiatives in recent decades have focused on children. Infant and childhood mortality declined rapidly in Kenya as a result of these initiatives between the 1970s and the 1990s. But diarrhoea and the six target infectious diseases are still leading causes of disability and death among children. Immunization rates slipped in Kenya during the late 1990s. The result is that the mortality of children under age 5 has continued to increase in the 1990s. The majority of these deaths result from five diseases – acute respiratory infections, diarrhoea, measles, malaria, and malnutrition – or from a combination of these conditions.

Although most of these diseases are preventable or manageable, this burden of disease is projected to continue to 2015 unless greater control measures are taken. To reduce these unnecessary child deaths, WHO and UNICEF implemented a new approach for improving child health in the mid-1990s - the Integrated Management of Childhood Illnesses (IMCI) strategy. The IMCI strategy combines better management of childhood illness with nutrition, immunization, maternal health, and other health programmes.

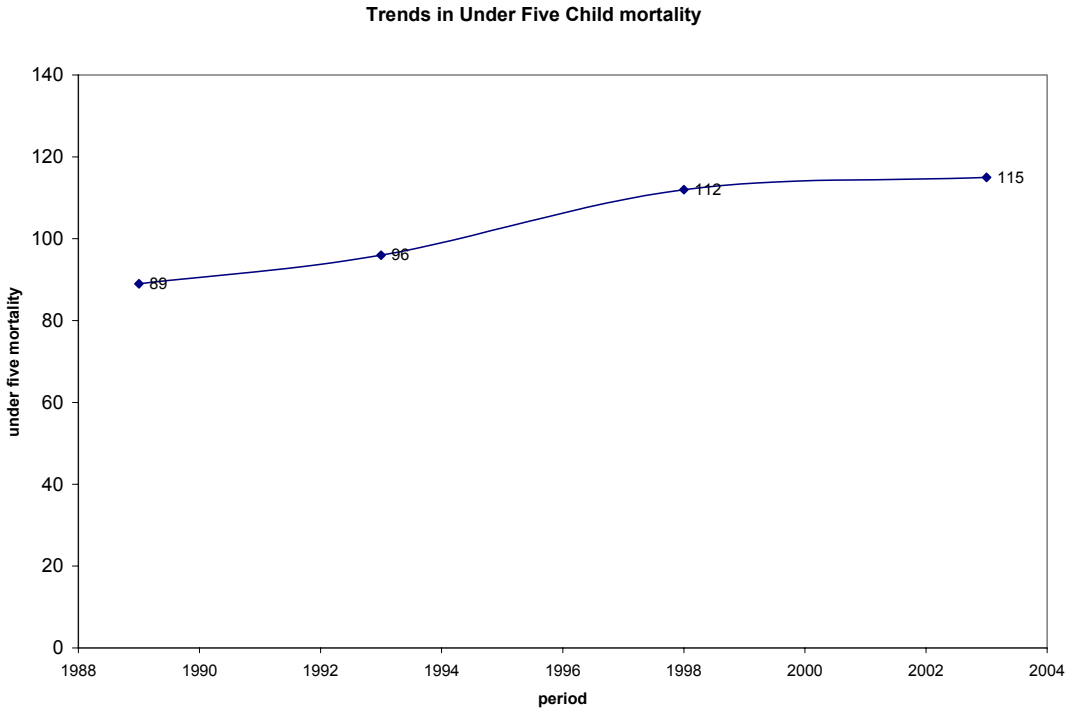
The core of IMCI is training health staff for integrated case management, but it also strives to improve the management of childhood illness throughout the health system and to enable communities and families to practice better health. To accomplish its goals, IMCI is trying alternative training methods to accelerate the improvement of health workers' case management skills and is seeking innovative ways to get communities to participate.

5.1 Situation Analysis

One of the key observations in Kenya's demographic history has been the rapid decline in infant and child mortality in the 1970s and early 1980s, and an upsurge in the nineties. In addition, there has been a decline in the level of child immunization, a key indicator of child health. Children aged 12-23 months receiving full vaccination against vaccine preventable diseases fell from 65% in 1998 to 60% in 2003. Table 5.1 gives a summary of trends in under-five mortality.

Table 5.1: Trends in Infant and Under-Five Mortality since 1989 by sex

	1989		1993		1998		2003	
	Infant	Under five	Infant	Under five	Infant	Under five	Infant	Under five
Males	63	96	67	97	75	108	84	122
Females	54	86	59	89	67	103	67	103
Total	60	89	62	96	74	112	77	115



The expected target for the achievement of the MDG goals are to reduce by two thirds, between 1990 and 2015, the under five mortality rate, which translates to

reducing from 99/1000 in 1990 to 33/1000 in 2015, despite the fact that the rate has since increased to 115/1000. Secondly, it is targeted to increase the proportion of one-year olds immunized against measles from the current 76% to 100% by 2015.

5.2 Challenges

The major challenge in reduction of child mortality is the continued increase in mortality rates since the 1990s in all regions of the country. There is inequity in access to health care services while the cost of accessing health care is high especially for the poor. The opportunity is that the Ministry of Health is endeavouring to strengthen programmes that are currently supporting child health. These include Kenya Expanded Programme of Immunization (KEPI), Control of Diarrhoeal Diseases and Acute Respiratory Infections, Nutrition, STI/HIV/AIDS, and Malaria. There is also a Government proposal to initiate a National Social Health Insurance Scheme that will ensure universal access to sustainable health care.

The five-year interval for which the mortality rate is computed may provide misleading policy options, and it is more interesting to focus on mortality within various age cohorts. For example, the mortality data based on the 2003 KDHS showed that 29% of the child deaths occurring in the first five years of life take place within one month after birth (neonatal mortality), 66% within the first year, and the remaining 34% in the remaining 1-4 years. It is therefore important to investigate and work on the causes of mortality within the first month after birth, if any progress is to be achieved in reducing under-five mortality.

Ensuring a critical mass of the human resource with skills needed to manage childhood illness remains a challenge to the government. The freeze on employment, worsened by high levels of attrition, has greatly reduced the skilled personnel that would provide the required services in the existing and new public health facilities. Inadequate supplies affect sustainable quality healthcare necessary for reduction in child morbidity and mortality.

5.4 Interventions

Effective low cost interventions available can prevent at least 2/3 of child deaths. Some of these interventions are preventive such as breastfeeding, use of insecticide-treated materials, complementary feeding, zinc and vitamin A supplementation, improved delivery procedures, and immunization. The curative aspects include treatments such as oral rehydration therapy, antibiotics for sepsis and pneumonia, anti-malarials and newborn resuscitation. There is also a direct linkage between the health of the newborn and that of the mother. The IMCI strategies provide this simple comprehensive service delivery in addition to interventions that target the mother. In addition, lack of improvement in child health indicators may be attributed to the risk of mother-to-child HIV transmission coupled with other contextual HIV/AIDS and poverty synergies. The key child health service is therefore to scale up IMCI to cover all areas.

Table 5.2: Matrix of interventions

Intervention package	Description	Target
CHILD HEALTH		
Neonatal integrated package	Clean delivery, newborn resuscitation, antibiotics for infection, tetanus toxoid, breastfeeding education, hygiene education, antenatal interventions	Ensure 98% of children are delivered by skilled attendant
Immunization	Vaccines for polio, diphtheria, pertussis, tetanus, measles, hepatitis B, and haemophilus influenza (Kenya government has adopted the DPT-HepB-Hib pentavalent vaccine in place of DPT alone)	Target is to fully vaccinate 80% of children before their first birthday, by 2005
Scaled up IMCI	Integrated approach to child health focusing on the well being of the whole child. The aim is to reduce incidence of illness, death and disability by using both preventive and curative cure to all children under 5 years	Scale up IMCI to all the 76 districts

5.5 Costing

The package to determine resources for the health sector uses models adopted by the Millennium Project. These models allow the user to determine the resources required to provide a basic set of health interventions for achieving the MDGs. The package comprises seven different components: maternal health, child health, HIV/AIDs prevention and care, malaria prevention and care, TB treatment, and the health systems. The models can be used as a package for the total health costs or individually for each programme. The basic assumption used is that they adopt a full cost methodology rather than incremental cost approach. The analysis calculates the costs of all resources needed to achieve a given coverage target. The incremental analysis considers resources required to cover the gap between current coverage and target coverage. If the incremental cost approach is used, then the current

government spending can be added to the incremental cost to provide the total sector needs.

The model for estimating the cost for child health needs is based on unpublished UNICEF/WHO Integrated Management of Childhood Illnesses (IMCI) costing models. It costs both preventive and treatment interventions for most common child diseases in developing countries. The targets has two indicators: % of sick children receiving medical care, and percentage of infants receiving medical care and for this purpose is set to 99%. It is expected that the impact of health and non-health sector interventions could prevent up to 63% of child deaths if there is universal access (99%) to health care. The inputs for the model are derived from the 2000 MICS survey.

Table 5.3 presents a summary of the costs of providing child health interventions and treatment by the year 2015. The total cost for intervention and treatment for children in the period 2005-2015 is approximately US$ 274,698,176 (includes intervention, treatment and personnel costs). To achieve the desired results the per capita spending will be approximately US $6.1 while per capita spending for intervention and treatment alone will be about US$ 3.5. These costs however exclude the rehabilitation of the facility structures and construction of new ones, research and training.

Table 5.3: Summary of total costs of child health.

	2005	2010	2015	Average 2005-2015
Total costs	6,504,908	36,668,829	222,078,147	274,698,176
Per capita costs	0.21	1.0	6.02	0.69

Table 5.4 summarizes the direct case management recurrent costs by facility by various inputs. The costs exclude the actual staff time in service delivery. The costs at hospital level is about 10 times the lower level facilities and largely driven by personnel and drug and supply costs. Details are provided in annex A showing the total costs for intervention and treatment.

Table 5.4: Total cost of delivery by level of delivery

Total Cost by Level of Delivery	Personnel Cost	Cost of Drugs/Supplies	Hospital Bed and Food	Lab Tests	Total Cost
Primary (incl. Immunizations)	$ 5,260,412	$ 4,868,995	-	-	$ 10,129,407
Hospital	$ 42,647,620	$ 28,366,563	$ 29,906,894	$ 1,090,547	$ 102,011,623
Total	$ 47,908,032	$ 33,235,558	$ 29,906,894	$ 1,090,547	$ 112,141,030

5.6 Investment Strategy

The interventions for both maternal and child health are essential and should not be financed by user fees as this discourages the poor from accessing the required services. The use of user fees to supplement the costs is partly responsible for the decline in the uptake of maternal child health services. The investments must therefore come from the public spending and/or other donor funding. Despite the higher per capita cost for child survival, implementing the maternal health care can grossly cut costs for child health since the survival chances of children are highly dependent on maternal health.

5.7 Conclusion

The situation analysis in this study shows declining trends in child and maternal health. Further, unless checked the attainment of Goals 4 and 5 is unlikely. Nevertheless, the expected achievement requires an increase in per capita spending of about US$6.1 and US$ of 4.1 for goal 4 and 5, respectively. It will also require an accelerated investment in the first five years to approximately US$3.0 per capita for maternal health and US$3.45 for child health by the year 2010. The estimation of costs has been hampered by lack of data for some of the core interventions. It is expected that strengthening of data collection, analysis and dissemination will be one of the core concerns of the Ministry of Health in order to produce reliable results in future.

CHAPTER 6

FOCUSING ON MATERNAL HEALTH

6.1 Introduction

Target 6 of the Millennium Development Goal 5 states that a three quarter reduction in maternal deaths should be achieved by 2015. The measurement for this reduction is the maternal mortality ratio and the proportion of births attended to by skilled health personnel.

6.2 Situation Analysis

While maternal mortality figures vary widely by source and are highly controversial, it is estimated that maternal mortality per 100,000 was 670 in 1990, 365 in 1990-94, 590 in 1998 and 414 in 2003. Approximately 14,700 women of reproductive age die each year due to pregnancy-related complications; while between 294,000 and 441,000 suffer from disabilities caused by complications during pregnancy and childbirth. However, there is lack of reliable regional estimates of maternal mortality despite anecdotal evidence of wide regional differentials.

6.2.1 MDG Targets

The Reproductive Health Agenda endorsed by 179 countries following the 1994 Cairo International Conference on Population and Development (ICPD) led Kenya to spell out a broad based approach to reproductive health. This culminated in the launch of the National Reproductive Health Services (NRHS) Delivery Strategy 1997-2010. Safe motherhood and child survival has been listed among the components towards the operationalization of comprehensive health care.

The strategy identified the key pillars of safe motherhood to include family planning, antenatal care, clean and safe delivery, essential obstetric care, postpartum care, newborn care, and post-abortion care. In addition the Kenya government launched the Integrated Management of Childhood Illnesses (IMCI) strategy in 1998 but its implementation begun much later in the year 2000. The core strategy interventions are the integrated management of the five most important causes of death among children, namely, acute respiratory infection (ARI), diarrhoea, measles, malaria, malnutrition and anaemia. Malaria, which is endemic in most parts of the country, is also a common cause of hospital admission among all age groups. It is also one of the key indirect causes of maternal morbidity and mortality.

6.2.2 Uptake of Maternity and Child Care Services

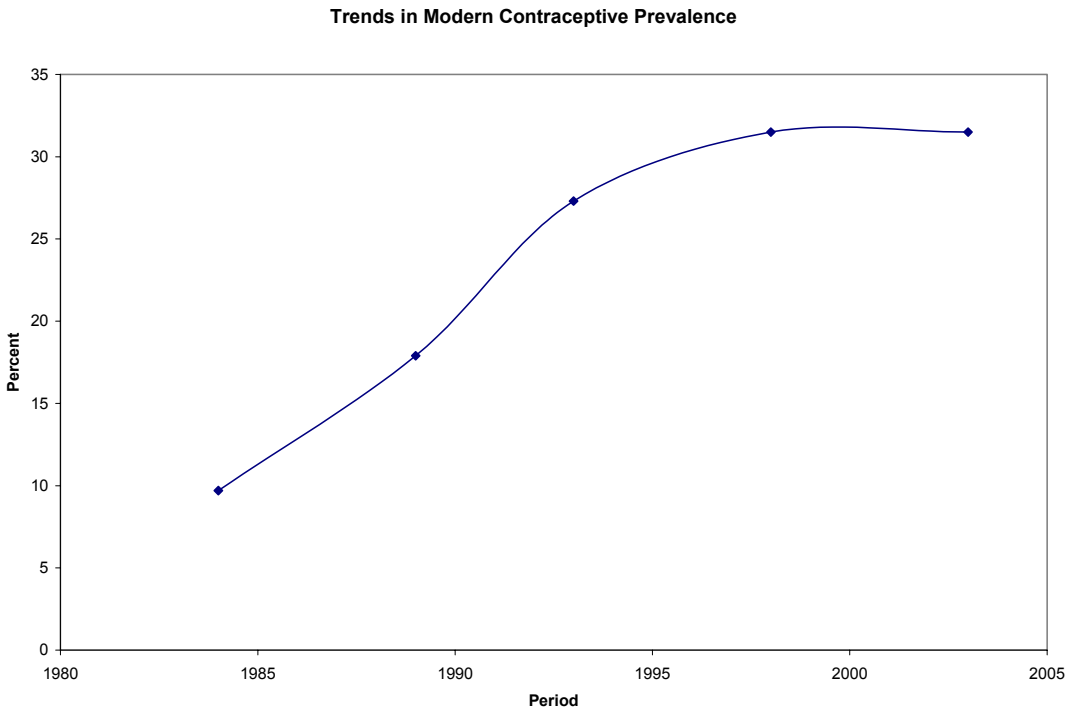
Despite the strategies and policies designed to improve maternal health, the proportion of mothers assisted by skilled health personnel declined from 51% in 1989 to 45% in 1993 and more currently 42% in 2003 (while 40% delivered in a health facility). Only 15% of the health facilities are able to provide Basic Obstetric Care, while for emergencies a mere 9% of the facilities are equipped to provide Comprehensive Essential Obstetric Care (NCPD, MOH, ORC 2000). According to 2003 Kenya Demographic and Health Survey (KDHS), about 90% of women receive any antenatal care. The use of antenatal care is less likely in rural areas and in addition wide regional differentials still exist. Currently only 52% receive the required 4 or more antenatal visits (against the recommended 12 visits) while only 11% do visit within the first trimester. There has been limited change over the last five years for women receiving the recommended Tetanus Toxoid immunization.

Although there had been major gains in contraceptive use in the last decade leading to a large decline in fertility, contraceptive prevalence rate (CPR) reached a plateau in the recent past. The contraceptive prevalence rate continued to stay at 39% (32% modern methods) in the last decade (NCPD, 1999; CBS, 2004). The major challenge is not only how to tackle the increased unmet need but also addressing persistent contraceptive stock-out. Only 63% of the total demand for family planning is currently satisfied, with 60% in rural areas and 74% in urban areas.

Table 6.1: Trends in current contraceptive use by currently married women

	1984	1989	1993	1998	2003
Any method	17.0	26.9	32.7	39.0	39.0
Any modern method	9.7	17.9	27.3	31.5	31.5
Unmet need (%)			36.4	23.9	24.5
Total demand (%)			69.2	64.8	65.8
% of Total demand satisfied			47.3	63.2	62.8

Source: KCPS, 1984, KDHS 1988/89, 1993, 1998, 2003



6.3 Challenges

There is need to address challenges related to direct obstetric causes of maternal mortality such as haemorrhage, sepsis, complications arising from unsafe abortion, eclampsia, etc and indirect obstetric causes such as malaria, anaemia, TB and HIV/AIDS. Essential obstetric services will be critical in the prevention of maternal deaths and morbidity. Addressing the needs of the adolescents will be quite challenging since majority of the cases arise from this group. There is also a need for change in provider attitudes in order to encourage more women to deliver in health facilities and also ensure sustainable availability of required supplies and equipment.

The current contraceptives rates are based on data obtained by interviewing married women only leaving out unmarried women utilizing family planning methods. Although girls as young as fifteen years old are sexually active, family planning policy is silent on the provision of contraceptives for these adolescents majority of whom are still in school.

6.4 Interventions

Family planning can prevent many maternal deaths by helping women prevent unintended pregnancies and by reducing their exposure to the risks involved in pregnancy and childbirth. Family planning allows women to delay motherhood, space births, prevent unsafe abortions, protect themselves from sexually transmitted infections including HIV/AIDS, and stop childbearing when they have reached desired family size.

Maternal deaths can also be prevented with existing health knowledge and technology. All pregnant women, even healthy women, face some unpredictable risks — 15% of pregnancies require special medical care. Thus women and their families and communities need to be able to recognize the symptoms of complications and have access to medical care when complications arise. It is possible to make pregnancy and childbirth safer for mothers and their newborns by taking some basic steps. The essentials of maternal and newborn health are highly dependent on early recognition of complications of pregnancy and delivery. Many women, especially in rural areas, live far from sources of adequate obstetric care. Families and birth attendants need to be aware of the warning signs of complications and must act quickly to get women in need to health facilities. This can be achieved successfully through the use of prenatal care.

6.4.1 Adolescent Mothers

Adolescent mother have more elevated risk to experience premature labour, miscarriage and still birth and are four times more likely to die from pregnancy-related causes. In addition their children are also four times more likely to die before age one. Because of their growth status and other socio-cultural constraints, they are also more likely to have greater risk of obstructed delivery and prolonged labour that can lead to permanent injury or death. Studies also indicate that they are more likely than older women to suffer from obstetric fistula (tears between the vagina and urinary tract or rectum that cause faecal or urinary incontinence). Programmes therefore need to also pay attention to reproductive services to young people. Key targets are providing education, stopping FGM, and promoting education and communications about the benefits of delaying onset of marriage and childbirth.

6.4.2 Gender Roles and Safe Motherhood

Gender roles significantly affect maternity care. When complications of pregnancy and childbirth develop, women are not often able to make decisions about their care. This places male family and other community members as decision makers. It has been reported that men often make poor decisions about seeking care during pregnancy and childbirth in part because they do not understand the dangers involved. Other key gender issues that inhibit women from utilizing available services include:

Box 6.1:Gender issues inhibiting women from utilizing available services

- Differential access to household resources for transportation during pregnancy-related emergencies;
- Cultural norms that do not support reduced workload during pregnancy;
- Cultural beliefs and practices about women's bodies contribute to adverse outcomes (e.g. FGM and certain beliefs about food and dietary restrictions); and
- Women are not often empowered to make decisions about seeking maternity care.

However, some of the reasons include little education, few resources, and inadequate access to social health insurance. Policies and programmes therefore need to provide education to men about safe motherhood; and empower women to articulate health needs and concerns, to access services with confidence without delay, and to demand quality services from service providers.

6.4.3 Increase Access to Skilled Delivery Care

Delivery is a critical time in which decisions about unexpected, serious complications must be made. Skilled attendants – health professionals such as doctors or midwives – can recognize these complications, and either treat them or refer women to health centers or hospitals immediately if more advanced care is needed. Women in rural areas live far distances from quality obstetric care, so improvements depend greatly on early recognition of complications, better provisions for emergency treatment, and improved logistics for rapid movement of complicated cases to district hospitals. Increased medical coverage of deliveries, through additional skilled staff and service points, are basic requirements for improving delivery care. Reliable supply lines and staff retraining programmes are also critical.

6.4.4 Provide prompt postpartum care, counselling, and access to family planning

It is important to detect and immediately manage problems that may occur after delivery, such as haemorrhage, which is responsible for about 25% of maternal deaths worldwide. Postpartum care and counselling will help ensure the proper care and health of the newborn. Counselling should include information on breastfeeding, immunization and family planning.

6.4.5 Improve post-abortion care

About 13% of maternal deaths worldwide are due to unsafe abortion. Women who have complications resulting from abortion need access to prompt and high quality treatment for infection, haemorrhage, and injuries to the cervix and uterus.

6.4.6 Strengthen health promotion activities

Mass media should be used to educate the public about pregnancy and delivery, and community-level organizations should assist this through systematic programmes. In order to prevent negative maternal health outcomes, an important step for health promotion is to have the Ministry of Health supply adequate educational materials regarding safe practices.

6.4.7 Improve access to reproductive health and family planning services, especially in rural areas

Due to the limited access to care in rural areas, maternal death rates are higher in rural areas than in urban areas. In addition, many men and women in rural and

urban areas lack access to information and services related to HIV/AIDS and other STIs.

6.4.8 Strengthen reproductive health and improve planning management and resource allocation

Although Kenya adopted the ICPD and the WHO-recommended package for mother and newborn care through the NRHS strategy, there is no official policy paper on reproductive health. Implementation of the policies may be inadequate and available resources are often insufficient. There is need to resolve budgetary allocation for reproductive health and family planning. Barriers to implementation and full financing of reproductive health and family planning need to be removed.

6.4.9 Improve access to, and awareness of family planning

Another feature that relates closely to preventing maternal mortality is the provision of family planning. Family planning helps women prevent unintended pregnancies and space the births of their children. It thus reduces their exposure to risks of pregnancy, abortion, and childbirth. Reliable provision of a range of contraceptive methods can help prevent maternal deaths associated with unwanted pregnancies. Addressing the unmet need for family planning needs to be speeded up. In addition, management of contraceptive supply logistics needs to be put in place in all areas.

6.4.10 Increase access to high quality antenatal care

High quality antenatal care includes screening and treatment for STIs, anaemia, and detection and treatment of hypertension. Women should be given information about appropriate diet and other healthy practices and about where to seek care for pregnancy complications. The WHO's recommended package of antenatal services can be conducted in a minimum of four antenatal visits throughout the pregnancy but the first visit needs to take place within the first trimester for early recognition of danger signs.

Table 6.2: Matrix of antenatal services

MATERNAL AND NEW BORN HEALTH		
Focused antenatal care (ANC)	Visits with skilled personnel during pregnancy improved with the first visit being in the first trimester. The focused interventions include: • Counselling about danger signs of pregnancy and complications and where to seek care during emergency • Supply iron and folate supplements where iron deficiency and anaemia is high • Provide advice on nutrition during pregnancy • Provide treatments for conditions affecting pregnancy – malaria, tuberculosis, hookworm infection, iodine deficiency, STIs • Provide VCT • Provide information on breastfeeding and contraception • Screen for domestic violence and provide counselling and referral	Increase ANC care usage to 100% (minimum of 4 visits)
Skilled attendance and delivery	Target is to improve access by expanding facilities and human resources • Determine ways of staff retention especially in rural areas, • Train TBAs for rural communities to identify warning signs	
Emergency Obstetric coverage (EmOc)	• Treatment and management of direct causes of maternal death • Improvement of facilities especially at district and lower levels of service delivery • Improvement of transport and communication	% of service delivery points for BEOC and CEOC increased *Current target for less developed countries is that for every 500,000 people there should be four facilities offering BEOC and one for CEOC*
Postnatal care	• Prevent and treat newborn hypothermia (low body temperature) especially for low birth weight infants • Prevent and treat newborn hypoglycaemia • Encourage immediate exclusive breastfeeding • Provide newborn eye care • Prevent and treat infections • Encourage birth spacing	*No agreed indicators*
Contraception and family planning services	• Increase access to contraception through provision of comprehensive range of contraception services • Providing education and communication to families especially men to reduce the unmet need for family planning	Universal access to contraception
Post-abortion care	• Provide facilities necessary for management of post-abortion care • Improve access to contraception and counselling	

6.5 Costing

The targets in the health models indicate what percentage of the population in need of an intervention should be gaining access to it by 2015. These targets reflect the international consensus on the achievements to reach the greatest impact. Targets

for maternal health are % of women receiving antenatal care, % of women with access to emergency obstetric care (EmOc), % of deliveries performed by skilled attendant, contraceptive prevalence rate (CPR), and % of obstetric fistula cases treated.

By 2015, the target for EmOc and obstetric fistula indicators is 90%. The target for skilled attendance and antenatal care (4 visits) is 99% of all pregnancies while the target for CPR is current CPR plus the unmet need for women 15-49 years. Data for the inputs were obtained from the 2003 DHS and MOH current annual salaries for the service providers. Two factors determine the cost of maternal health care services. These are average treatment cost per client (which will increase when the interventions are provided according to the standards of the package), and the number of women who will require these services.

Previous costing models suggested that the interventions would cost approximately US$2.60 per capita in a low-income setting and about US$ 5.60 in a middle-income setting. The costs of providing maternal health by the year 2015 are $4.13 per capita, $162.92 per birth and $148.41 per pregnant woman. The per capita cost compares reasonably well with previously worked up costing in other similar Sub-Saharan African countries (Ghana, Tanzania and Uganda) and also Cambodia. It generally represents an increase of about US$ 3.4 per capita from the current annual cost.

Table 6.3 shows that there is need for more accelerated investment in the initial years so as to meet the target. The required cost between 2005 and 2010 would be US$ 36,167,263 while the incremental cost is US $143,538,146.

Table 6.3: Annual costs of providing maternal health care in us$

2004	2005	2006	2007	2007	2009	2010	2011	2012	2013	2014
8,402,508	7,657,866	6,804,754	5,489,115	5,385,010	5,406,445	5,424,073	5,351,160	5,209,049	5,076,669	5,031,126

Table 6.4 shows the average treatment cost per client and the total cost for each intervention. At the health post level, equivalent to dispensary in the Kenyan case, providing female condom has the largest cost per case. However, providing Depo provera (injectables) contraceptives will require the largest investment at all levels. Providing contraceptives has the largest share of cost at all levels. Eclampsia has the highest cost per case but requires little investment due to low prevalence. There is need to consider interventions at the health centre level during the process of transfers of patients, although no allocation is given in the Model outputs for such conditions. Such costs will include transportation, stabilizers and drugs to sustain the patient until the referral hospital. The costs for some elements have not been estimated due to lack of data e.g. male sterilization, safe abortion, and obstetric fistula.

Table 6.4: Average and total treatment cost by intervention

Intervention	Average cost per client			Total costs			
	Health Post	Health Centre	Hospital	Health Post	Health Centre	Hospital	Total
Abortion complications	$ -	$26.05	$49.76	$0	$29,648	$132,154	$161,802
Anaemia, severe	$ -	$3.49	$7.36	$0	$214,307	$378,740	$593,047
Antenatal Care	$ 5.51	$8.67	$9.59	$2,825,651	$3,113,669	$1,475,488	$7,414,807
Eclampsia	$ -	$0.00	$154.71	$0	$0	$659,212	$659,212
FP - Counselling for men	$ 0.92	$1.38	$1.38	$2,095,330	$3,059,709	$2,653,534	$7,808,573
FP – Condom	$ 6.88	$7.33	$7.33	$1,654,208	$1,235,139	$529,349	$3,418,696
FP - Female Condom	$ 76.52	$76.98	$76.98	$236,054	$71,202	$474,900	$782,156
FP – Depo-Provera	$ 16.66	$17.58	$17.58	$22,970,318	$16,964,005	$7,270,298	$47,204,621
FP – IUD	$ -	$6.73	$6.73	$0	$2,576,917	$454,753	$3,031,671
FP – Norplant	$ -	$35.86	$35.86	$0	$8,691,746	$1,533,827	$10,225,573
FP - Oral Contraceptives	$ 6.18	$6.64	$6.64	$4,097,775	$3,081,231	$1,320,529	$8,499,535
FP – Sterilization	$ -	$0.00	$13.03	$0	$0	$10,582,877	$10,582,877
FP – Male Sterilization	$ -	$0.00	$9.77	$0	$0	$0	$0
Safe abortion	$ 4.00	$4.00	$4.00	$0	$0	$1,285,564	$1,285,564
Haemorrhage	$ -	$33.68	$64.81	$0	$251,092	$5,039,260	$5,290,352
Neonatal Complications	$ -	$0.00	$72.65	$0	$0	$13,577,894	$13,577,894
Normal Delivery	$ -	$19.85	$20.70	$0	$15,766,170	$2,901,424	$18,667,594
Obstetric Fistula	$ -	$0.00	$100.00	$0	$0	$0	$0
Obstructed Labour	$ -	$0.00	$75.77	$0	$0	$9,685,034	$9,685,034
Postpartum Care	$ 0.59	$0.82	$0.82	$276,255	$268,182	$114,935	$659,372
Sepsis	$ -	$30.51	$43.05	$0	$624,038	$2,054,211	$2,678,249
STD – Other	$ 2.38	$2.83	$2.83	$7,315	$6,106	$2,617	$16,037
STD – Syphilis	$ 2.92	$3.61	$3.61	$2,997	$2,591	$1,112	$6,700
TOTAL	–		–	$34,165,902	$55,955,752	$62,127,711	

Table 6.5 shows the costs by all direct inputs for all levels of health facilities. Personnel costs will constitute the largest cost as a result of increased number of women to be treated in the system. Similarly if the standard package is fully adopted, the average time per woman will increase. Similarly at the health post level, laboratory supplies will increase the cost of running them due to the introduction of laboratory test during antenatal care and for screening the STIs.

Table 6.5: Costs by direct inputs

	Health Post	Health Centre	Hospital	Total
Blood Products	$0	$0	$1,316,168	$1,316,168
Drugs	$10,214,722	$8,205,385	$8,842,602	$27,262,709
Hospital Bed + Food	$0	$554,076	$10,767,053	$11,321,129
Lab Supplies	$21,138	$186,357	$168,290	$375,786
Personnel	$7,083,186	$22,505,834	$20,755,667	$50,344,687
Consumable Supplies	$16,846,856	$24,527,910	$17,647,132	$59,021,898
Transportation (Gas)	$0	$71,177	$941,536	$1,012,713
TOTAL	$34,165,902	$56,050,739	$60,438,449	$150,655,090

6.6 Maternal and Newborn Health

Maternal deaths have both direct and indirect causes. About 80% of maternal deaths are due to causes directly related to pregnancy and childbirth — unsafe abortion and obstetric complications such as severe bleeding, infection, hypertensive disorders, and obstructed labour. Women also die of causes such as malaria, diabetes, hepatitis, and anaemia, which are aggravated by pregnancy. Table 6.6 summarises the interventions to improve maternal health.

Table 6.6: Interventions to improve maternal health

ACCESS TO ESSENTIAL MEDICINE	
Interventions to ensure availability, affordability and appropriate use	• Provide procurement and distribution facilities • Provide adequate transportation • Monitoring systems to assure drug quality • Eliminate user fees • Improve ways of drug prescription, dispensing and use • Develop and implement national essential medicine lists and treatment guidelines • Improve public knowledge though education and public media campaigns

CHAPTER 7

COMBATING HIV/AIDS, MALARIA AND OTHER DISEASES

7.1 Introduction

Target for 2015: Halt and begin to reverse the spread of HIV/AIDS and the incidence of malaria and other major diseases

Tuberculosis, HIV/AIDS and malaria are the leading causes of morbidity and mortality in Kenya. The three diseases also have a disproportionate impact on women and children. The Government released the National Health Sector Strategic Plan for the period 1999-2004 whose vision is to "create an enabling environment for the provision of sustainable quality health care that is acceptable, affordable and accessible to all Kenyans" through better targeting of resources to the poor. In this regard, HIV/AIDS, tuberculosis and malaria control are priority programmes in this Plan.

PART 1: HIV/AIDS

The target is to have halted by 2015 and began to reverse the spread of HIV/ AIDS. The indicators are HIV prevalence among pregnant women aged 19-24, condom use rate and the contraceptive prevalence rate, and number of children orphaned by HIV/AIDS. Progress is normally assessed by:

Box.7. 1:Factors indicating progress towards achieving HIV/AIDS –related goals

- HIV prevalence among pregnant women aged 15-24 years attending antenatal care clinics or among population groups at high risk;
- Percentage of people aged 15-24 reporting the use of a condom during sexual intercourse with a non-regular partner;
- Percentage of young people aged 15-24 who both correctly identify ways of preventing the sexual transmission of HIV and who rejects major misconception about HIV transmission; and
- Ratio of current school attendance among orphans to that among non-orphans aged 10-14 years

7.2 Situation Analysis

According to National AIDS Control Council, there are more than 3 million people currently infected with HIV/AIDS; and more than 2 million have so far died of

AIDS-related complications, leaving behind over 1.5 million orphans. Several millions of children are living with parents who are ill, often becoming the primary care givers for their parents, young siblings and other dependants. Over 60% of those infected live in the rural areas where the socio-economic conditions are worsening due to poverty and unemployment. This has strained the already inadequate and ill-equipped health facilities with over 50% of public hospital beds being occupied by patients with HIV/AIDS related infections. It is estimated that many more persons living with HIV/AIDS stay at home unable to access health care and stressing the households' ability to cope.

It is estimated that two people die of AIDS every five minutes and 200,000 urgently need antiretroviral drugs but only 12,000 can afford. As a result the disease is costing Kenya more than KShs 200 million daily (KDHS, 2003). The social and economic damage caused by HIV/AIDS in Kenya is enormous and there is urgent need for all actors to intensify the fight against the pandemic.

7.2.1 HIV/AIDs Policy and Strategic Plan

Kenya launched a National HIV/AIDS Strategic Plan 2000-2005 in December 2000. The overall theme is behaviour change to reduce HIV/AIDS and poverty. Key components in the document include priority areas for the control of HIV/AIDS as well as mechanisms for the mitigation of socio-economic impact at individual, family, community, sectoral and national levels. This approach facilitates the investment of significant amounts of resources at district, community and household levels where both the main determinants and the main impact of the disease lie. The five priority areas highlighted in the plan include prevention and advocacy; treatment, continuum of care and support; mitigation of socio-economic impacts; monitoring and evaluation; and research, management and coordination. All these priority areas fall within and are consistent with the interventions developed for meeting the millennium development goals.

To meet the challenge of the HIV/AIDS pandemic, the Kenya government approved Sessional Paper No. 4 on AIDS in Kenya in September 1997. This was a clear intent of political will on part of the government to support effective programmes to control the spread of AIDS, to protect the human rights of those with HIV/AIDS, and to provide care for those infected and affected by HIV/AIDS. The goal of the Sessional Paper is to provide a policy framework within which AIDS prevention and control efforts will be undertaken for the next 15 years and beyond.

The Sessional Paper recognizes the fact that responding to the HIV/AIDS crisis will require strong political commitment at the highest level, implementation of a multi-sectoral prevention and control strategy with priority focus on young people, mobilization of resources for financing HIV prevention, care and support, and

establishment of a national AIDS Control Council to provide leadership at the highest level possible.

Following the 1999 Presidential Declaration that AIDS is a national disaster, the National AIDS Control Council (NACC) was established. The establishment of NACC in the Office of the President and NASCOP in Ministry of Health provided the national institutional framework for liaison and coordination of activities to combat HIV/AIDS. Unfortunately, sometimes a tug of war tends to inhibit their ability to work together. Strengthening of coordination of responsibilities is necessary in the efforts to scale up activities to meet the MDGs. The establishment of Constituency HIV/AIDS Committees has added yet another layer in the fight against the pandemic.

International development partners disburse some of their HIV/AIDS funds through non-governmental and community-based organizations. These organizations sponsor a broad spectrum of interventions. Institutional responses and interventions now need to scale up from high-risk groups to nationwide coverage. It is proposed that the scaling up process could be accelerated by adopting and implementing the targets set in the Millennium Development Goals by incorporating them in development plans.

7.3 Interventions

There is need for a comprehensive care approach aimed at the large numbers of those infected and support for the affected. In order to promote health and quality of life for people infected and affected, an intervention package that links medical facilities (infrastructure) with community services and home-based care should be developed. Such an intervention should encompass the following:

Box: 7.2:What an appropriate HIV/AIDS intervention package should encompass

- Clinical care to reduce suffering and prevent opportunistic infections;
- Nursing care to attend to personal needs, maintain dignity, prevents transmission of infections and ensure patients' compliance with prescriptions;
- Counselling and emotional support to reduce psychological stress and provide the information and support necessary to make decisions;
- Home-based care to provide physical, psychological and spiritual support in collaborative effort between hospital, community and family;
- Social support to help people cope, participate and be accepted;
- Occupational therapy to promote self-care and economic self-reliance

Given the above situation, interventions are proposed (as in the Health Model) that could be scaled up towards meeting the millennium target

Table 7.1: Interventions that could be scaled up towards meeting the HIV/AIDS millennium target

Classification	Proposed Interventions
PREVENTION	
Behaviour change programme	Programmes to encourage safer sexual behaviour including condom social marketing, peer-based education, mass media campaigns, and school-based AIDS education.
STD control	Routine screening and effective treatment of sexually transmitted diseases e.g. syphilis and gonorrhoea.
Voluntary Counselling &Testing	Includes both pre- and post-test counselling and is available to people testing positive or negative
Harm reduction for injecting drug users	Action to prevent transmission of HIV and other infections that occur through sharing of non-sterile injection equipment and drug preparation; specific programmes include provision of sterile syringes and needles and drug substitution treatment
Prevention of Mother to Child Transmission	Prevention of transmission of the HIV virus from infected women to their infants during pregnancy, labour and delivery, as well as during breastfeeding. Includes short-term antiretroviral prophylactic treatment, infant feeding, counselling and support and the use of safer feeding methods.
Blood Safety Interventions	Institute measures to reduce the risk of receiving infected blood through transfusion. This includes HIV antibody screening, protocols to unnecessary blood transfusion and policies to exclude high-risk donors.
CARE AND TREATMENT	
Antiretroviral therapy	Combination drug therapy to treat HIV infection
Treatment of opportunistic infections	Treatment of any infection caused by micro organism that would not normally cause disease in the individual but occurs in persons with abnormally functioning immune system
MITIGATION	
Orphan care	Provision of support to orphans to minimize the impact of AIDS on their lives; includes school fee support, provision of orphanages and community support.

7.3.1 Specific Interventions

7.3.1.1 Awareness of AIDS and HIV transmission

Most of the people in the country have a high knowledge about HIV/AIDS and are aware of the prevention measures of Abstinence, Faithfulness and use of Condoms (ABC). The 2003 KDHS recorded knowledge and awareness about HIV/AIDS at 98% among women and 99% among men. However, the same cannot be said for men and women aged 15-19 years whose knowledge of prevention is likely to be lower. This could be attributed to lack of Information, Education and Communication (IEC) materials especially on sexual and reproductive health information necessary to enable them to avoid infection. There is also lack of trained peer educators and counsellors as well as trained caregivers for the infected. In addition, there are few VCT centers within the country as well as lack of awareness on the importance of the centres. Those infected do not have access to quality medical and home-based care due to lack of trained care providers, poverty and ignorance. This has led to poor nutrition, increased contact infections, trauma, pain, suffering and premature deaths.

There is therefore need for more awareness creation especially among the youth and the most vulnerable groups on prevention, care and support of the infected and affected, importance of voluntary counselling and testing, as well as support and care of the orphans.

7.3.1.2 Condom use

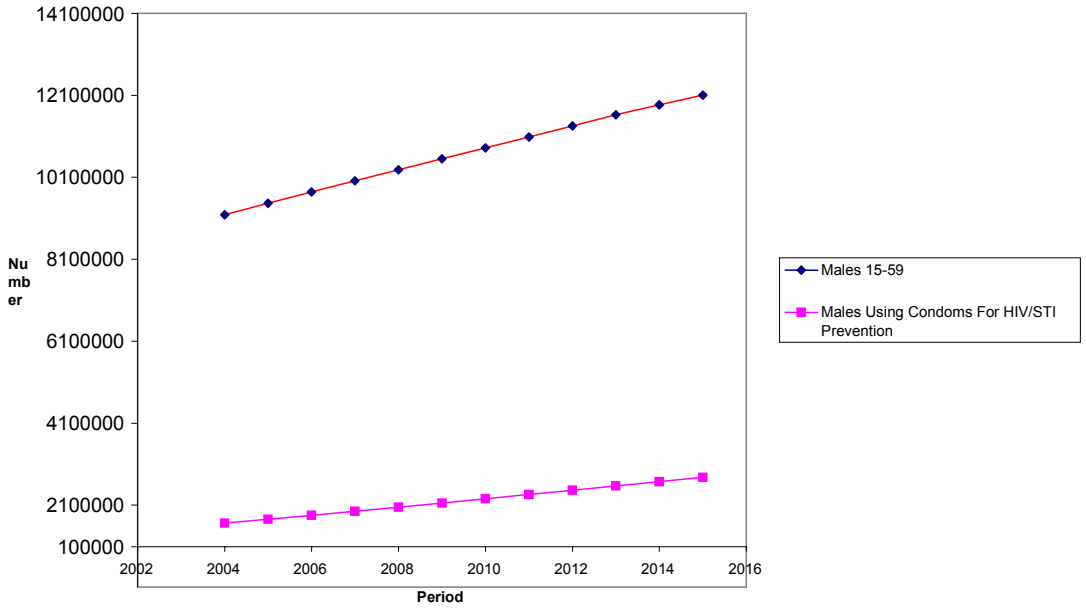
Condom use is an important tool in the fight to curtail the spread of HIV/AIDS. Effective protection would require condom use at every sexual encounter and especially among the high-risk groups. This can be achieved if such groups are made aware of the importance of condom use as a tool for protection against HIV/AIDS. Condom social marketing has been found to be an effective method of passing the message especially among the youth in the country. There is therefore a need for resources to be allocated towards social marketing and especially in the rural areas where people still feel embarrassed to buy them. Acquisition and distribution of condoms has been more successful in urban areas but is yet to pick up in the rural areas. Moreover, as Table 7.2 shows, there is need for greater social marketing of the female condom whose relative demand is lower compared to male condom. It is assumed that enhanced use of the female condom has the added value of giving women the decision on condom use.

Table 7.2: Projections of Condom Requirements 2004-2015

Year	Males 15-59	Male Condom Prevalence (%)	Condom Using Males 15-59	Condom Using Females 15-49	Males Using Condoms For HIV/STI Prevention
2004	9,185301	19	1,745,207	85,326	1,659,882
2005	9,465,002	19.5	1,845,675	91,565	1,754,110
2006	9,739,698	20	1,947,940	97,949	1,849,991
2007	10,011,801	20.5	2,052,419	104,489	1,947,930
2008	10,282,799	21	2,159,388	111,200	2,048,188
2009	10,550,100	21.5	2,268,272	118.047	2,150,225
2010	10,815,011	22	2,379,300	125,047	2,253,664
2011	11,079,922	23	2,492,472	133,047	2,357,902
2012	11,352,133	23.5	2,592,713	142085	2,462,923
2013	11,624,344	24	2,692,954	152,094	2,567,944
2014	11,866,555	24.5	2,793,195	163,226	2,673,208
2015	12,101,466	25	2,893,436	175,294	2,778,476

Source: Adopted from NASCOP with projections by author

Figure 7.2:Condom projection



7.3.1.3 Sexually transmitted infections

Sexually Transmitted infections (STIs) are an important indicator of prevalence of unprotected sexual intercourse that also contributes to HIV transmission. In Kenya, collection of data on incidence and prevalence of STIs has been through the surveillance systems that include passive case reporting and routine screening systems. Nationally the prevalence of syphilis and other STIs is reported from seroprevalence testing among pregnant women attending antenatal care clinics at selected sentinel sites. Studies have shown that reported declines in prevalence of HIV have been accompanied by declines in prevalence of other STIs.

7.3.1.4 Mother to child transmission

The National HIV/AIDS Strategic Plan 2000-2005 and the National Prevention of Mother to Child Transmission Strategic Plan (Ministry of Health, 1999) are the current strategies geared towards improving the health of the HIV infected mother and reducing the transmission to children during pregnancy, labour, delivery, and post-delivery during breastfeeding. According to the 2003 KDHS, majority (72% women and 68% men) of those interviewed knew HIV could be transmitted through breastfeeding. Only 33% of women and 38% of men interviewed knew that the risk of transmission from mother to child could be reduced by the mother taking certain drugs during delivery. At the same time the knowledge of transmission through breastfeeding and knowledge of antiretroviral drugs is lower for the youngest women and men, as well as those who never had sex. Given this scenario increasing the level of general knowledge of transmission of the virus from mother to child and reducing the risk of transmission by use of antiretroviral drugs are critical to achieving the millennium targets.

7.3.1.5 Testing and counselling for HIV

Voluntary Counselling and Testing is now widely accepted as an effective strategy for HIV prevention. The Government is fully committed to encouraging the provision of VCT services throughout the country so that all Kenyans who wish to know their HIV status have access to this service. Knowledge of HIV status helps HIV negative individuals make specific decisions to reduce risk and increase safer sex practices. For those who are HIV infected, knowledge of their status allows them to better protect their sexual partners, to access treatment for HIV infections, and to plan for their future.

Majority of Kenyans have heard about VCT though many of those who are aware have not used the services. Knowledge of VCT is highest among those in their early 20s and among never married women and men who have ever had sex (KDHS, 2003). Likewise urban residents recorded high knowledge of VCT services as compared to their rural counterparts. Efforts are necessary to raise awareness and use of these centres. Furthermore, the lack of use of VCT associated with stigmatisation needs to be addressed.

7.3.1.6 Orphans

Kenya has observed an increase in the number of orphans due to deaths occasioned from HIV/AIDS related infections. According to the 2003 KDHS, data on orphaned children (children under fifteen who have lost either one or both of their natural parents) show that 9% have lost their father, 4% have lost their mother and 2% have lost both parents. Altogether the study reported 11% of children under 15 have lost one or both parents.

Orphans are usually considered to be disadvantaged compared with children whose parents are both alive. These children are not only exposed to risk of malnutrition,

physical and sexual abuse but also to HIV infection. The extended family network, which would have traditionally been relied upon to care for the orphans, is overstretched and overwhelmed by poverty and other socio-economic factors.

Failure to respond adequately to the looming orphan crisis jeopardizes the children's future and the country's prospects of development. Childhood and adolescence without parental care and protection will leave most of the orphans ill prepared to assume community responsibilities and production, therefore condemning the country to a vicious circle of poverty.

7.4 HIV/AIDS Costing

The needs assessment has adopted the Futures Group model (on HIV/AIDS) for estimation of resources needed for Prevention, Care and Treatment, and Orphan support. The model is divided into three sub-models, namely, prevention model which calculates the cost of twelve prevention interventions listed below; care and treatment which calculates costs for five care and treatment programmes; and orphan support, which calculates the cost of three interventions to support children orphaned by HIV/AIDS.

The interventions under the Prevention Model include youth intervention, public sector condom provision, condom social marketing, mass media coverage targets, blood safety, safe injections, STI management, voluntary counselling and testing, prevention of mother to child transmission, universal precautions (health facilities and personnel), orphan care and support, and policy/administration/research/M&E. There are three sets of assumptions that underlie the prevention model. These are (a) population target groups which describe the population in need of prevention services; (b) coverage targets which give an indication of the estimated population that would actually use the service; and (c) unit costs which assist in estimation of the total resources required.

The variables for care and treatment model are number of people needing care, palliative care, diagnostic testing, treatment of opportunistic diseases, prophylaxis for opportunistic infections, laboratory tests for ARV therapy, antiretroviral therapy (mainly population with access to ARV therapy), training, and nutritional support.

During the calculations for the total resources required, an attempt has been made to utilize the local available data as much as possible. However, in cases where such data was not available, the study utilized the data already given in the models most of which is derived from the World Bank Development Indicators database and other definite sources of data.

Table 7.3 gives a summary of the resources required for each intervention. Total cost for the three sub-models is estimated to be about US$ 7,823,481,000. Out of this 71% goes to provision of Care and Treatment while the rest (29%) goes to Prevention of HIV/AIDS. More than half (54%) of the resources required for Care and Treatment goes to provision of antiretroviral drugs while 23% is taken up by laboratory tests. Scaling up the provision of antiretroviral therapy to those infected will go a long way in prolonging life and reducing mortality. Laboratories should also be provided and equipped with the necessary equipments to monitor the patients on ARVs treatment.

Table 7.3: Resources required for HIV/AIDS interventions, 2004-2015 (in thousands US$)

FOR CARE AND TREATMENT OF HIV/AIDS		FOR HIV/AIDS PREVENTION	
Nutritional support	12,714	Policy	286,784
Training	17,891	Orphans	466,713
Antiretroviral	3,004,091	Universal precautions	20,066
Laboratory tests	1,265,000	Safe injections	22,742
Prophylaxis for opportunistic infection	91,869	Blood safety	2,216
Opportunistic infection	877,693	Mass media	41,650
Diagnostic testing	7,769	PMTC	153,559
Palliative care	290,512	VCT	83,946
Total	5,567,539	STI	40,768
		Condom social marketing	15,726
		PS condom	194,878
		Youth	513,597
		CSW	413,297
		Total	2,255,942
GRAND TOTAL			7,823,481

The total resources required under Prevention are US$ 2,255,942. Out of the total budget, 23% goes towards youth programmes in secondary and primary school, as well as training of teachers who are believed to be change agents in the society. Majority of the people at risk of getting infected are the sexually active youths between 13-24 years. There is therefore need to put more resources in youth programmes and especially to encourage behavioural change.

PART 2: MALARIA

7.5 Situation Analysis

Out of Kenya's population of over 30 million, 70% (20 million people) live in malaria prone areas and are at risk of infection. Each year, an estimated 6,000 pregnant women suffer from malaria-associated anaemia, 4,000 babies are born with low birth weight as a result of maternal anaemia and 34,000 children below the age of five years die from malaria (MoH, 1998). This disease burden has a draining effect upon Kenyan health resources as 30% of all outpatient attendance and 19% of inpatient admissions are due to malaria (National Malaria Strategy, 2001). It has significant, measurable, direct and indirect costs that place major constraints on economic development in Kenya thus constraining efforts on wealth creation.

Among the direct costs of malaria is the high personal and public expenditure necessitated by treatment. It is estimated that every household affected by malaria spends approximately US$20 annually for clinical management of the malaria attacks. This expenditure on malaria presents an overwhelming financial burden, especially for the rural poor. It is estimated that 120 million working days per year are lost due to malaria in Kenya. Indirect costs of malaria include loss of productivity and income associated with illness and death; loss of working days and/or absenteeism from school and formal employment; and in cases of death of a family member, the loss of future lifetime earnings. Therefore prevention strategies are a crucial part of reducing the socio-economic and biological impact of malaria.

7.5.1 National Goal for Malaria Control

The overall goal of the National Malaria Strategy (NMS) is to reduce the level of malaria infection and consequent deaths in Kenya by 30% of the current levels (2001) by the year 2006 and to sustain that improved level of control to 2010. In order to meet the Millennium Development Goal (halt and reverse the incidence and prevalence of malaria), the stated national initiatives to sustain improved level of control must shift to focus on further decline in infection and deaths from malaria by 2015.

Four strategic approaches outlined in the NMS, including the use of insecticide-treated nets by at-risk communities, are consistent with MDG targets. These are further refined by the target of 60% of the at-risk population will sleep under nets and at least 50% of these nets will be regularly treated with insecticides. As such the national framework does exist. There is however an urgent need to accelerate the mechanisms and resources to achieve these targets.

7.5.2 Mapping Malaria Risk Areas

- There have been a number of attempts to define the range, seasonality and intensity of malaria transmission in Kenya developed either from expert opinion on

length of malaria seasons, modelled assumptions about rainfall and temperature on the stability of Falciparum transmission, the application of remote sensed imagery to define seasonality or distribution, and the application of models of climate and ecology to predict endemicity as classified by the parasite ratio. All approaches to mapping malaria risk in Kenya demonstrate that the country has a huge diversity in risk largely driven by climate and temperature (including the effects of altitude).

All districts classified as endemic and highlands were selected for free Long Lasting Impregnated Nets (LLIN) distribution and promotion. Based on this, 46 districts have been targeted for mass LLIN distribution and promotion. These districts carry the biggest burden of disease in terms of malaria morbidity and mortality.

7.5.3 Institutional Framework

Malaria is one of the six essential packages of the Health Sector Strategic Plan and complete harmonization between the NMS and the HSSP will guarantee Roll Back Malaria success in Kenya. These structures are in line with MDG assumption that strong and responsive institutions are critical in the tracking of MDG indicators.

7.5.3.1 Community level

The HSSP aims to strengthen community structures to enhance the participation of households in health-related activities at the local level. At the community level and peripheral health facilities there will be integration of all the components of the NMS in the basic health package as outlined in the district health work plan. Planning and implementation will involve local community authorities and leaders, peripheral health workers, drug shop owners, community groups, religious organizations, employers, other Government administrative systems and community-based organizations. Malaria control activities will be integrated with activities of other health programmes and particularly with those provided by Integrated Management of Childhood Illnesses (IMCI) at the local level.

7.5.3.2 Provincial and district levels

Special efforts will be put in place to strengthen and empower the Provincial and District Officers to institute clear mechanisms for control of malaria as the local conditions may dictate. Provincial and District teams will build on existing structures and ensure a close relationship with other Government structures such as municipal authorities. The Stakeholders Forum in each district will help identify alliances for malaria control.

As IMCI is introduced into districts, these teams will be able to take forward ready-integrated malaria and IMCI capacity building. Training of health and other relevant personnel will be crucial. A focal point for integration will be the District Health Work Plan that will allow a strategic move away from vertical, parallel training system.

7.5.3.3 National level

The Division of Malaria Control (DOMC) is the main operational organ at the national level. It is proposed that the DOMC will be structured according to the components of the National Malaria Strategy and provide a resource of professional expertise for partners in malaria control. Its role will be to develop and disseminate policy and strategies and keep them up to date; provide technical assistance; produce and disseminate national guidelines for all components of the strategy; monitor and evaluate implementation and impact; build capacity through training; and advocate malaria as a priority disease.

7.6 Interventions

7.6.1 Malaria Control and Drug Policy

Mild malaria mild infections can be readily treated with Sulphadoxine Pyrimethamine (SP) drugs. However, there are serious concerns about the efficacy of the SP based drugs. Amodiaquine (AQ) has a better clinical and parasitological response but its efficacy is also declining. Both SP and AQ are widely available as monotherapy in a variety of preparations and branded generic forms in the retail sector and both are characterized by poor quality as judged by international pharmaceutical standards.

Kenya is faced with immediate and difficult decisions regarding the replacement of SP as nationally recommended first-line therapy for uncomplicated malaria. The options available to replace SP and AQ are limited. There is general agreement that future therapeutics should be in combination, with each drug group having independent modes of action. Policy guidelines will be necessary to define the drug changes. In addition these decisions affect the level of funding since different drugs attract different prices and sourcing procedures.

The WHO recommends that Artemisin-based combinations should be the preferred replacements for failing monotherapy. The two most widely considered options for East and Southern African countries are presently the fixed-dose combination Coartem (Artemether-Lumefantrine) and the co-packaged combination of Amodiaquine and Artesunate (AQ+AS). These combinations have proven efficacious in carefully controlled clinical trials in areas with moderate to high level of SP or AQ resistance in Africa.

Given the limited options, Coartem is likely to continue to form the basis of early attempts to revise the national anti-malarial drug policy in Kenya and will most likely be initially restricted to the formal government health sector as a prescription-only medication. Defining the drug requirements for the country to support an anti-malarial drug policy change is a critical part of the implementation process. Nevertheless, the challenge is immense due to inadequate reporting system on drug supply or morbidity.

7.6.2 Malaria Control Strategies

The Kenya Government adopted the Roll-Back Malaria (RBM) strategies for its burden of disease. These strategies are clinical management by providing effective and prompt treatment of cases; management of malaria and anaemia in pregnancy; vector control using insecticide-treated nets and other methods; and epidemic preparedness and response.

7.6.3 Clinical Management: Providing Effective Prompt Treatment

Access to treatment is a cornerstone of any public health programme. In the absence of any 100% effective preventive intervention (a vaccine, ITN or vector control), the management of clinical malaria is the most vital and cost-effective action to reduce malaria burden. Delay in treatment can lead to much more severe illness, including convulsions, breathing difficulties, unconsciousness and severe anaemia. In these serious cases, death can be rapid unless the victim receives immediate hospital treatment.

The government is committed to ensuring that all people at risk of malaria and those managing the disease have access to IEC to improve fever recognition and treatment and management of severe/complicated malaria. In this regard the Government has set policy guidelines to ensure that:

.Box 7. 3 : Treatment and management strategies for severe/complicated malaria

- All fevers are treated as early and as close to a patient's home as possible, with acceptable quality and correct dosages of the first line anti-malarial and supportive treatment;
- First-line therapeutic failures will be appropriately referred and managed with recommended second line treatment;
- All complications of malaria will be referred and managed according to national guidelines;
- Intermittent Presumptive Treatment (IPT) of malaria will be recommended for pregnant women;
- Chemoprophylaxis will be recommended only for people at special risk, such as non-immune travellers or people with Sickle Cell Disease or splenectomy.

7.6.4 Meeting the MDG Targets for Malaria

Even before the Millennium Development Goals came into being, the Kenya Government had set targets to be met by 2006 and 2010. These national targets appear in line with the MDGs. However, the MDG targets bring on board greater national and international commitment of personnel and resources. The implementation of the 2006 targets should give way to improvements by 2010. The assumption being made here is that if there is consistent achievement of targets for 2006 and 2010 as intended, the chances for meeting the malaria target for 2015 remain high. It is envisaged therefore that scaling up of current activities will be of great importance. These targets will be met principally through improvement in clinical management of malaria. While treatment is critical, the service delivery mechanisms need to be improved substantially.

Clinical management of malaria will be provided and strengthened through the following programme activities: awareness among client community; improved case-management by service providers; ensuring adequate drug supply; drug registration, legislation and quality; drug donations; monitoring drug efficacy; and involvement of the informal sector.

7.6.5 Management of Malaria and Anaemia in Pregnancy

Malaria is a major cause of anaemia in pregnant women and increases the risk of severe morbidity and maternal death. Malaria infection during pregnancy poses a risk to the unborn child and, for surviving births, leads to a decreased birth weight. Prompt and effective responses are necessary at all levels. Government policy with regard to pregnant women living in malaria prone areas is to ensure access to:

- Two free SP treatment doses, one in the second trimester of pregnancy, one in the third trimester, or other prophylactic drug regimen which may evolve.
- Effective community-based communication to encourage prompt treatment for fever.

This intervention is also linked to Goal 5 on improvement of maternal health, and will be most effective if integrated with safe motherhood programmes to benefit from synergies. Furthermore, specific gender programmes can be used to highlight the fate of pregnant mothers as special gender group needing special attention thus linking directly to Goal 3.

7.6.6 Integrated Measles Follow Up Campaign in Kenya

The Global Fund for HIV/AIDS, TB and Malaria control has tentatively approved the 4th round application for Kenya, which includes the distribution of over 3 million LLINs as part of an integrated immunization campaign beginning August 2005. To tackle the problem of low re-treatment rates, LLINS will be introduced in order to achieve meaningful reduction in malaria morbidity and mortality in Kenya.

Kenya intends to build on existing lessons to accelerate the insecticide treated bed-nets (ITNs) coverage and utilization among children below 5 years of age and move speedily towards the MDG targets. Under-five morbidity and mortality patterns in Kenya are highest among the malaria endemic districts. As children under five years bear the highest burden of malaria morbidity and mortality, the distribution of ITNs among this age group will have the greatest impact on mortality reduction. In addition, the contribution of malaria to the increasing infant mortality is significant.

It is therefore clear that a rapid investment in ITN distribution and promotion linked to measles follow-up campaign will increase coverage, demand and utilization of ITNs among the malaria high-risk group in Kenya. Such an integrated campaign targets MDGs, national and international targets for malaria control, and reduction in infant mortality.

7.6.7 District Micro-Planning and Training of Health Workers

The districts will undergo integrated training and micro-plan development in order to estimate their needs for the campaign early 2005 and project human resource requirements up to 2015. These scaled up initiatives will not achieve the intended objectives unless there are sufficient trained personnel to implement and monitor the work. In the funding matrix, assumptions have been made on the projected staffing levels.

7.7 Costs for Malaria Intervention

Malaria costing has been calculated based on the Global Fund Model (in addition the August 2005 integrated campaign cost projections have been added). The calculation is based on the number of ITN required as detailed in the National Malaria Strategy Targets. Treatment cost is based on projected drug requirements. These calculations are related to information gathered from hospital records and new projections based on mapping of malaria risk areas. The interventions included in the model are provision of ITN, treatment of complicated malaria, and treatment of uncomplicated malaria.

The resource requirements for scaling up ITNs are projected to increase from US$ 21,682,078 in 2005, 25,135,473 in 2010, and 28,963,453 in 2015. The cost of carrying out the integrated campaign in August 2005 is estimated at US$ 17,083,629.81, distributed between purchase of ITNs for distribution to selected districts (15,033,266.83), distribution of ITNs/logistics (1,670,362.98), monitoring and evaluation of ITN coverage and use (320,000.00), and social mobilization and IEC materials (60,000.00). This cost is part of the overall ITN requirements.
Continued high level resource requirements in the initial stages will be sustained for a number of reasons:

- Malaria treatment has been associated with frequent drug failure and this is expected to recur. The current change to Coartem may be expensive.
- Need to introduce malaria early warning systems in the districts.
- Improvements on epidemic detection and prompt response activities.
- Provision of public intervention on malaria to communities to enhance prevention and treatment.

Table 7.4: Total resource requirements for malaria (US$)

	2005	2006	20007	2008	2009	2010	2011	2012	2013	2014	2015
Human Resources	2,120,157	2,289,119	2,392,738	2,322,747	2,293,467	2,293,467	2,293,467	2,293,467	2,293,467	2,293,467	2,293,467
Infrastructure and equipment	717,666	749,707	732,767	735,591	664,623	664,623	664,623	664,623	664,623	664,623	664,623
Training	1,505,948	285,712	834,261	148,540	416,916	416,916	416,916	416,916	416,916	416,916	416,916
Commodities and products	20,189,549	7,210,569	7,381,412	7,232,203	7,845,223	7,845,223	7,845,223	7,845,223	7,845,223	7,845,223	7,845,223
Drugs	18,865,073	21,148,574	21,148,574	21,417,231	21,712,755	21,712,755	21,712,755	21,712,755	21,712,755	21,712,755	21,712,755
Planning and administration	1,704,839	1,101,260	1,116,060	1,164,304	1,217,372	1,217,372	1,217,372	1,217,372	1,217,372	1,217,372	1,217,372
Programme management and procurement	2,343,645	1,740,893	1,182,096	1,173,369	1,214,548	1,214,548	1,214,548	1,214,548	1,214,548	1,214,548	1,214,548
Monitoring and Evaluation	907,479	779,907	635,030	579,126	494,684	494,684	494,684	494,684	494,684	494,684	494,684
Procurement and supply management	961,97	703,787	703,787	715,523	728,406	728,406	728,406	728,406	728,406	728,406	728,406
Total	49,316,063	36,073,039	36,447,926	36,117,866	37,541,589	36,587,994	36,587,994	36,587,994	36,587,994	36,587,994	36,587,994

PART 3: TUBERCULOSIS

7.8 Situation Analysis

Kenya is experiencing a generalized TB epidemic that still affects the young economically productive age groups (15-44 year age group). In recent times, TB cases have more than doubled, mainly due to the impact of the HIV/AIDS pandemic. In 2003, a total 96,000 TB cases of all forms were notified compared to 82,000 in the previous year (NLTP, 2003).

The Millennium Development Goal for tuberculosis relate to reduction in prevalence and death rates associated with tuberculosis. One way of doing this is through targeting TB patients co-infected with HIV to have increased access to ARVs, so as to reduce deaths from the most important cause of high death rates among TB patients. Such efforts should also seek to improve case detection and treatment success rates for infectious TB cases through Directly Observed Treatment Short Course (DOTS) and expansion initiatives such as decentralization of TB services including community TB care. Initiatives to scale up implementation of DOTS services in hard to reach districts will lead to increased access to services and increased detection and cure of infectious cases within communities, thereby reducing incidence of and death from TB. These initiatives are perfectly in line with

efforts to reach MDGs for TB control in the long term, and on paper Kenya is ready for the challenge.

7.9 Interventions

The Ministry of Health is implementing internationally recommended TB DOTS Strategy for TB control countrywide. It is also actively pursuing the WHO/UNAIDS "3 by 5" Initiative to contribute to reducing HIV/AIDS related morbidity and mortality in the country. The bulk of TB control services are provided through the public sector. The Ministry of Health has continued to provide most of the resources including approximately 25% of all anti-TB drugs through annual budgetary allocation, which has contributed significantly to main regular drug availability in the country. To address the gap in drug supply, Kenya negotiated and was awarded a World Bank loan of 2.2 million dollars through the District Aids and Reproductive Health (DARE) project. More support was received from the Global Drug Facility (GDF).

Overall, the TB control strategies appear consistent with the target of the MDGs. Key interventions on TB control are based on DOTS strategy that has been established to be the most effective measure in controlling TB through the strategies outlined in Box 7. below

Box 7. :TB control strategies

- Advocacy for commitment to TB control from all parties for sustained TB control activities countywide;
- Passive case detention based on sputum-smear microscopy examination;
- Short course chemotherapy for TB cases with direct observation of drug intake at least during the intensive phase of treatment;
- Assurance of a regular and secure supply of quality anti-TB drugs; and

Timely surveillance and reporting of standard outcomes of tuberculosis control activities.

The Ministry of Health has formulated two objectives for TB control that are consistent with activities suggested by the MDG project. These are to reduce the incidence and prevalence of tuberculosis in Kenya, and to reduce physical and psychosocial suffering from tuberculosis. Likewise the core activities identified to fulfil these objectives appear relevant to the expectations of the MDGs. These include: early case-finding; ensuring that adequate chemotherapy is available; health education for the public and tuberculosis patient; contact tracing and, where necessary treatment; ensuring that good records are kept and that reporting systems

are in place to ensure good monitoring and evaluation; training and supervision of health care and outreach workers; defaulters tracing; and epidemiological surveillance and operational research.

At the same time, with more than 50% of TB cases being co-infected with HIV, initiatives to address the impact of the AIDS pandemic are linked to WHO's framework to reduce the burden of HIV/AIDS related tuberculosis and the Interim Policy for TB/HIV collaborative activities. Chances of success in TB control are enhanced by these existing international initiatives. There is however an urgent need to put in place more efficient and responsive national mechanisms to eliminate inherent inadequacies in service delivery and improve on absorptive capacity and uptake of various services. With these initiatives in place, the concern is not whether the country has the framework necessary for putting in motion activities that will meet the MDG targets for TB but rather the availability of necessary resources and logistics to translate intention to action.

7.10 Costing for Tuberculosis

The cost for TB interventions includes human resources, infrastructure and equipment, training, commodities and products, planning and administration, and monitoring and evaluation. The resource requirements for ARVs are under HIV/AIDS, although availability of ARVs is likely to reduce the risk of contracting opportunistic infections like TB. Based on these interventions, assumptions have been made that initially the cost will be high but will decrease after 2010 due to increased awareness coverage and availability of drugs.

Table 7.5: Total resource needs for interventions focusing on TB (US$)

Activity/ Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Human Resources	9,107,880	3,761,608	3,759,889	3,768,541	3,646,125	3,646,125	3,646,125	3,646,125	3,646,125	3,646,125	3,646,125
Infrastructure and equipment	897,907	103,510	103,550	99,565	97,657	97,657	97,657	97,657	97,657	97,657	97,657
Training	2,069,340	269,999	1,677,574	94,172	78,254	78,254	78,254	78,254	78,254	78,254	78,254
Commodities and products	395,374	-	-	-	-	-	-	-	-	-	-
Drugs	0	0	0	0	0	0	0	0	0	0	0
Planning and administration	1,586,260	825,911	613,621	512,393	234,574	234,574	234,574	234,574	234,574	234,574	234,574
Monitoring and Evaluation	476,602	104,624	104,624	104,624	104,624	104,624	104,624	104,624	104,624	104,624	104,624
Total	14,533,363	5,065,652	6,259,258	4,579,296	4,161,235	4,161,235	4,161,235	4,161,235	4,161,235	4,161,235	4,161,235

7.11 Financing Strategy for Control of Tuberculosis

The Ministry of Health has, through the NLTP, a current medium term strategic plan for TB that is being implemented. The Global Fund has provided additional funds that complement the funds from the government and other partners thereby substantially improving the financing to control TB in Kenya. New funding (including to finance gaps identified after earlier rounds) is being negotiated from Global Fund to allow scaling up of activities countrywide to include hard to reach districts.

A number of objectives have been developed to guide the resource projections. One of the objectives is to increase access to ART services among TB patients co-infected with HIV from 4% to at least 50% in 5 years. It is however appreciated that changes will be necessary since TB is directly related to HIV/AIDS. This means some interventions will share costs. One of the categories of activities is Information, Education and Communication (IEC) for communities and health workers. Both communities and health workers are important stakeholders and beneficiaries in the delivery of ART services. IEC programmes will help to improve the knowledge and practice of both towards the services. This will include development and distribution of education and advocacy materials, and mounting of

publicity campaigns. It will also include training of care providers to impart knowledge and skills to deliver the services.

The Ministry of Health will co-ordinate the design, development and production of the IEC materials to ensue quality and relevance of the information. The IEC materials will include radio and TV programmes, information booklets and posters. NGOs will play a key role in disseminating this information and educating communities. They will hold community education meetings as well work through organized community-based groups. Close collaboration with ongoing HIV/AIDS programmes will be maintained for effective provision of this service.

Although a number of stakeholders have shown some willingness to support the TB control initiatives, additional funding is required to meet gaps in coverage of the key service delivery areas. Further discussions are necessary to ensure commitments are kept since one of identified gaps (additional human resource) requires a substantial amount while increased case finding is critical to the success of control and management of TB. The funding projections in TB control have been made with the assumption that scaling up of activities will be achieved and that sustained level of activities will follow. The projected funding requirements for HIV/AIDS are US$ 6,684,981,000, 415,024,447 for malaria, and 55,404,979 for tuberculosis.

CHAPTER 8

STRENGTHENING SYSTEMS FOR HEALTH SERVICES DELIVERY

8.1 Introduction

The impact of contemporary health care systems is often measured by their resources e.g. the per capita number of hospitals and hospital beds, doctors and other health professionals, and schools offering degrees in the health professions. The expenditures on health (expenditure per capita or as a percent of national income) also are commonly used indicators. The type of health care systems available in the future will depend in part on the amount and source of financing available. One of the big sources of change in the financing and operating of health systems may evolve from new health communication strategies and opportunities.

8.2 Situation Analysis

The MDGs do not specifically deal with strengthening of health systems. Yet past experience with development programmes in the health sector shows that while it is technically possible to deliver interventions vertically, the successful scale-up and utilization of a broad range of health interventions requires a functioning health system. The main components of a functioning health system include:

i. Scaling up system-wide health human resources (including clinical and administrative staff) and infrastructure;
ii. Improving the system's ability to plan, finance, and deliver high-quality health services. This includes strengthening management capacity in the system; improving monitoring, evaluation, and quality assurance; enhancing community demand for and access to essential interventions; and building capacity for health research and development.

Table 8.1: Health systems matrix

Component	Activities
Strengthen the human resources	• Improve planning • Provide pre-service education and training • Provide in-service and continuing education • Review and improve remuneration and incentives to health workers
Improve infrastructure (building and equipments)	• Rehabilitate existing old facilities • Invest in non-facility service delivery points • Establish systems to manage the health facility buildings and equipment
Systems management-Human Resources Capacities.	• Improve the functioning of MOH and the District Health Management Teams (DHMT) • Improve the financial management • Provide the regulatory services
Monitoring and evaluation and quality assurance	• Practice audits and provide protocols • Develop system of data gathering • Improve vital registration and epidemiological surveillance
Community participation and Involvement	• Enhance community demand for services • Empower communities and households to produce better health in order to leverage on resources • Eliminate user fees on essential services
Build capacity for research and development	• Conduct clinical research • Conduct operations research • Encourage information sharing
Access to essential commodities(medicines and supplies)	• Import regulations • Reliable systems of procurement and distribution
Improve communication systems	• Telephone • Ambulances • Computers and E-mail services. • Feeder roads
Improve inter-sectoral collaboration	• Liaise with key ministries on areas of HIV /AIDS, school feeding programmes, supplement feeding, sanitation, male involvement in reproductive health (RH) activities.

8.3 Synergies

WHO has estimated that a poor physical environment is responsible for about one-fourth of all preventable diseases. Environmental conditions are especially critical for some diseases; for example, such conditions account for an estimated 90% of health problems caused by malaria. Environmental threats to human health can be divided into "traditional hazards" associated with a low level of economic development, and "modern hazards" associated with industrialization.

Traditional hazards related to poverty and a low level of economic development include lack of access to safe drinking water, inadequate sanitation in the household and in the community, indoor air pollution from cooking and heating with coal biomass fuel, and inadequate solid waste disposal. Modern hazards are related to economic development without adequate health and environmental safeguards and increased consumption of natural resources. These hazards include water pollution, intensive agriculture, air pollution from motor vehicles and climatic change, and ozone depletion.

8.4 Financing and Investment for the Health Strategy

Although Kenya is committed to the achievement of the Millennium Development Goals, the statistics in the KDHS 2003 appear to cast doubt on attainment of health-related goals. In general heath outcomes and indicators have deteriorated over the last 10 years. Inequality in access has been highlighted as a key contributor to poor health status – 30% of sick Kenyans do not seek care due to financial barriers and majority of people live more than 5 km from the nearest health facility (Public Expenditure Review, 2004).

Effective and targeted public health financing and investment must form a key cornerstone of the national efforts towards attainment of MD Goal 6. Health in Kenya is under-funded with low budget for drugs, medical supplies and infrastructure maintenance expenses, and capital. There has also been a mismatch between policy and resource allocation in the health sector, with high spending on curative as opposed to preventive and promotive.

The PER 2004 points out that development expenditures in health represent a mere 1.5% of GDP. The public per capita expenditure on health is $6.2 way far below the $34 per capital recommended by WHO, and public health spending is 8% of total spending against the 15% target agreed upon at the Abuja declaration. If substantial progress is going to be made in meeting the MDGs, there will be need to make substantial increase in health expenditure.

CHAPTER 9

ENVIRONMENTAL SUSTAINABILITY

Amboseli National Park

9.1 Introduction

Goal 7 of the MDGs calls for ensuring environmental sustainability for the benefit of all. Target 9 has two components: to integrate principles of sustainable development into country policies and programmes, and to reverse the loss of environmental resources. While the first component can be addressed by an intervention on root causes. For example, two broad root causes responsible for loss of environmental resources are those related to population and its over-exploitation of resources; and those related to irresponsible behaviour that result in discharge of pollutants into the environment. In order to address the root causes responsible for loss of environmental resources, Target 9 must be implemented in concert to existing synergies with the other MDG Goals and Targets.

9.2 Situation Analysis

The greatest threat to our environment is posed by poverty. Deprived people are a major threat to the environment when the basic needs of adequate food, shelter, clothing and health services are not met. These people will endeavour to satisfy their needs by any available means without considering the consequences to fellow human beings or resource base. Efforts to obtain basic needs under such circumstances generally lead to environmental degradation – destruction of forests, loss of arable soil, fall in productivity through disease and malnutrition.

Achieving the health-related MDGs depends largely on increasing access to medicine and health facilities, improved sanitary living and working conditions, education and training. However, the underlying environmental conditions, in many cases, greatly affect health conditions. This is especially clear for mortality due to water-borne and insect-borne infectious diseases. Access to clean drinking water depends upon water quality in rivers and aquifers which, in turn, depends on good

watershed management and pollution control. Conservation of biodiversity directly contributes to health care of the poor through herbal medicine. Overuse of wild natural resources such as medicinal plants and wildlife results in environmental degradation.

Children under-five die mostly of diarrhoea linked to unclean water and inadequate sanitation, as well as respiratory infections related to pollution. Lack of fuel for boiling water contributes to preventable water-borne diseases. Child mortality and maternal health, especially related to clean water and sufficient quantity and quality of food, have clear links to the environment and the services ecosystems provide. Nurturing trees on the land near the homesteads and in riparian zones, and clean waterways are important for improving the health conditions for women and young children.

Rain water once reaching land surface is available for human (water, sanitation and agricultural production) and plant use (transpiration by forests, grasslands and rain-fed crops). The balance percolates through the soil profile to recharge the ground water table. Development activities (societal and economic) involve production of waste and other disturbances that influence the functioning of the components of the environment. If these disturbances and waste manifested by over-abstraction and pollutants are not kept to a sustainable level, environmental productivity (timber, fuel wood, drugs, crops, etc) and aquatic system productivity (fish, seafood, etc) will be interfered with.

Target 10 on access to safe and clean water can be achieved by putting in place adequate water storage facilities. If the water catchment areas on which the supply of this water is dependent are degraded or destroyed the quality and quantity will be adversely affected. In this case, the interests of the stakeholders in meeting the MDGs should go beyond supply and infrastructure to include ensuring security of supply guaranteed through conservation. A good arrangement will be where those who trade in water set aside a fraction of the income for conservation through an arrangement/agreement.

The main source of energy used in Kenyan households is derived from natural resources (firewood, charcoal, wood, waste and farm residues) or fossil products (kerosene and LPG). Hydropower comprises the main source of electricity in Kenya and is dependent on one of the environmental services (water cycle). Although energy, especially electricity, is important for national economic and social activities, it is rarely recognized as one of the products of an environmental service – water and the water cycle. As a result, the large electricity producers and consumers do not channel back their returns to ensuring sustainability of electricity supply. Those companies and many others could be persuaded to contribute a small fraction (e.g. 1%) of their profits for conservation and sustainable management. In return, those

charged with the responsibilities of managing environmental services and products must on their part ensure sustainability and security of electricity supply.

9.3 Proposed Interventions

Interventions and their targets are organized around five thematic problem areas: developing a participatory national environment framework, fisheries and other aquatic ecosystems, forests and other terrestrial ecosystems, wildlife, and community actions in market-based development. Each of these thematic problem areas have interventions, targets, activities, unit costs for each activity, cost of each activity in the base year (2005), and an inbuilt 5% annual increment in the case of Kenya to take care of inflation. The cost of achieving the targets is based on unit costs as they currently operate in the market place. The annual resource requirements are based on a simple uniform distribution, as sequencing of activities by respective stakeholders has not been undertaken.

A wide range of policy options and practical measures or interventions exist that can be undertaken to enhance poverty eradication, conservation and management of natural resources for social and economic development of Kenya, the key ones being:

a) Putting in place an effective policy and legal framework for the conservation and management of the environment and natural resources. This includes a framework that improves the legal and administrative coordination of the diverse sectoral initiatives currently being undertaken by the many stakeholders involved in the sector.
b) Developing a strategic and a long-term environmental strategy that spells out clearly what needs be done, by whom, when, and at what cost;
c) Developing a national environmental accounting and valuation system that contributes to the System of National Accounts (SNA) with a view to integrating environmental considerations with the national planning process; and
d) Promoting environmental education, public awareness and participation in pursuit of sustainable development.

Targets were set on the basis of the severity of the identified problem and the assessment of potential capacity for making a difference. What requires further elaboration is the *when* question. These require consultative discussions among and between the different stakeholders, as many of the interventions and targets are synergistic in nature. Lack of activity sequencing is clearly reflected in the projected budget summary by equal allocations per year.

The projected increase in plantation yield for eucalyptus grandis was 100%, 75% for cupresus lusitanica, 60% for pinus patula, and 80% for P. radiata. Overall, the target increase in yield of the major plantation species is a high 67.5%.

The confusion on whether to use or not use the non-resident farmers (commonly known as *shamba* system), coupled with very low budgetary provision for the last 20 or so years led to the collapse of the forest and the extension services. As a result, most plantation management data and records are outdated. However, the cost of establishing a hectare of plantation forest on a 25-year rotation made on the basis of costs of land rent, seedling, land preparation, planting, weeding, pruning and non-commercial thinning was estimated at KShs 63,100.

The household requirement for wood fuel was based on a recent report by the Ministry of Energy (Kamweti, 2002), while wood-fuel energy required by the proposed primary school feeding programme was taken as part of the overall household energy requirement (the difference is the utilization point). The estimates for the cottage industry, like for household energy, were also adopted from Kamweti (2002). The cost of school construction materials, paper for school writing materials, and textbooks were based on projected primary school populations and assuming 35 pupils per classroom.

9.3.1 National Environment Framework

The following interventions have been suggested:

a) Creating an enabling environment in order for the sector to achieve targets it has set out for itself, or simply getting organized;
b) Environmental accounting; and
c) Environmental management and enforcement of guidelines, regulations and standards.

9.3.1.1 Getting organized

Part of the solution to the country's environmental challenges lies in the way things are done. Getting organized so as to constructively develop mechanisms for resolving urgent environmental problems is a first step in a process that involves many steps. For the organization to lend meaning to agreed solutions, those traditionally in the environment sector must deliberately reach out with a view of sourcing not only skills but also divergent views from non-environmentalists.

Currently, the MENR is responsible for coordinating activities related to goal 7. It is organized around four main departments – Mines and Geology, Forest Management and Research, NEMA, and DRSRS. However, other government Ministries (e.g. local government, energy, livestock, tourism, water, and agriculture), civil society and private sector all have legitimate and strong departments with environmental components. All these Ministries and departments operate independently, often

competing for scarce resources and also in the process sending out messages that are both confusing and conflicting. The proposed budget is to facilitate the environmental sector, comprised of the green sector, to get self-organized in order for them to develop a common and negotiated script to guide policy and link it to community action.

For this to happen, two things must be done. First, the often-fragmented extension services belonging to the different government departments and civil society should be harmonized. Second, a common and more practical approach to data generation, collation, management and accessing be developed and operationalized. Strengthening and redefining the mandate of DRSRS could be what is needed to achieve this intervention. DRSRS's proposed interventions are costed for separately. Main activities under the interventions will entail lobbying and convincing policy makers to see the need for these changes. These will entail meetings, workshops, a strategy, and an agreement on roles, responsibilities of each stakeholder and joint planning and budgeting. A total of Kshs. 8,573,000 is required for the planning phase, and Kshs. 93,316,000 to implement the plan. The total for the environment sector to get organized is Kshs. 101,889,000.

9.3.1.2 Environmental accounting

The objective for including "environmental accounting" is to make it easier to analyze sectoral and macroeconomic issues, so as to design policies that reflect a more comprehensive understanding of the relationship between the economy and the environment. The long-term goal for environmental accounting is for Kenya to develop meaningful macroeconomic indicators and also ascertain the value of non-market environmental services and products. Currently, the value and contribution of environmental services and products to the national economy are taken for granted. An important factor responsible for the omission of the value of environmental services and products is the argument that most of them are not final market commodities with a market price.

The current needs assessment recommends that it will take Kshs 97,126,500 to develop and implement a strategy for integrating principles and practices of environmental accounting within and/or alongside the system of national accounts (SNA) – even if on a pilot basis.

9.3.1.3 Management and enforcement of environmental guidelines, regulations and standards

The objective of this section is to determine what it will take NEMA to ensure implementation of environmental policies and compliance with legislation. The four main interventions outlined are coordination of environmental management actions, dissemination of knowledge on the status of the environment, publishing and disseminating environmental tools, guidelines and procedures, and to build capacity for enforcement to ensure compliance.

Umbrella environmental management challenges in Kenya fall under the Environment Management and Coordination Act (EMCA), enacted in 1999. EMCA provides a national legal framework for the management of the environment and natural resources. The institution responsible for the implementation of EMCA is the National Environment Management Authority (NEMA). NEMA has been working towards establishing an effective policy and legal framework for the management of the environment and natural resources. In an effort to build adequate national capacity for the management of the environment, provincial and district environmental committees have been established. These need to be strengthened and empowered.

Ensuring environmental sustainability need not be always punitive, especially to those who are already weakened by poverty. A more practical and less expensive approach needs to be found. NEMA has been promoting environmental education and public awareness programmes towards this end. In order for NEMA to achieve identified targets, it requires a budget of Kshs. 1,221,502,000 for the period 2005-2015. Table 9.1 summarises the costs of interventions on the environmental framework.

Table 9.1: Interventions on the national environmental framework (kshs)

Intervention/Activities	Unit Cost	Annual Cost	2005-2015
NATIONAL ENVIRONMENTAL FRAMEWORK			
1. Planning			
Long-term environment strategy		32,000	2,048,000
Interventions		450,000	6,300,000
Roles and responsibilities of stakeholders		75,000	225,000
Sub-total			8,573,000
2. Operations			
Advocacy		110,000	23,100,000
Operationalization of framework		4,000,000	44,000,000
Review and harmonization of policies		64,000	1,344,000
Meetings and workshops		661,091	7,272,000
Recurrent budget		1,600,000	17,600,000
Sub-total			93,316,000
Total			101,889,000
ENVIRONMENTAL ACCOUNTING			
What types of environmental service and goods does Kenya have?	3,520,000		17,600,000
What ecosystems provide these services and products (descriptive and quantitative)?	713,600		3,568,000
What is the value of identified environmental services and products (define the valuation criteria)?	987,000		4,936,000
What is the impact of resource depletion on the economy?	715,700		3,578,500
Advocacy	4,420,000		22,100,000
Review and harmonization of policies	268,800		1,344,000
Implementation	8,800,000		44,000,000
Total			97,126,500
MANAGEMENT AND ENFORCEMENT OF ENVIRONMENTAL ACTIONS			
1. Strengthen the capacity of DECs, PECs, DEOs, and PEOs,			
2. A fund to support community environmental sustainability actions			95,152,000
3. Support to facilitate the operations of environmental lead agents			1,064,250,000
4. Publish and disseminate environmental tools, guidelines and procedures			19,932,000
5. An environmental sustainability project for Nairobi city			42,268,000
TOTAL			**1,221,502,000**

9.3.2 Fisheries and Other Aquatic Ecosystems

To address the challenges currently faced by the Fisheries Department, four interventions are identified. A budget to achieve targets identified under these interventions is Kshs. 2.31 billion over the next 11 years (2005-2015). The first intervention aims to ensure sustainable utilization of aquatic products. This involves putting in place an effective management system that effectively links policy to community actions to ensure sustainable utilization of aquatic and marine resources.

The intervention will cover all fisheries and aquatic ecosystems and will cost of Kshs 1.04 billion up to 2015.

The second intervention has two activities. The first is monitoring of pollution mainly from agriculture and general development on the ecology of, say, Lake Victoria and its associated ecological problem of the water hyacinth. This is critical and urgent if fisheries and aquatic ecosystems have to play their rightful role in reduction of poverty and hunger. The second activity will concern itself with restocking depleted lakes and rivers with fish. The restocking of fish in lakes will target Lake Victoria and L. Jipe. Implementing and achieving the two activities under the intervention will require Kshs 452.60 million up to 2015.

The third intervention is active and positive community participation in the management and conservation of Kenya's fisheries and other aquatic ecosystems. The activities identified under community participation include awareness and education, participation, self-organization, and training. Implementing the community participation component will cost Kshs 139.2 million.

The fourth intervention is to restore the biological functions of degraded fisheries and other aquatic ecosystems. This will take a combination of activities under the all the above interventions, implementing measures that reverse the negative impacts, and re-stocking lakes and rivers where depletion is a problem. This intervention will cost Kshs 220.7 million to implement.

9.3.3 Land Degradation

Two guiding principles for on-farm tree crops are that communities themselves will bear the establishment and management costs, while the Forest Department's (FD's) role will be to facilitate and support development and effective and efficient functioning of markets for on-farm wood and non-wood products. The two objectives are to make markets and market-derived profits serve as a driving force behind on-farm tree establishment and management; and to address the negative impacts of development on environmental sustainability by relieving exploitation pressure on forest and other terrestrial ecosystems. Among the human factors responsible for forested ecosystem degradation are population and its extraction of environmental products causing the disruption of ecological functions responsible for environmental services. Stopping and preventing use has not and will not work; instead, the solution lies in meeting environmental product-based needs within allowable limits.

Since land degradation as it relates to agricultural productivity is directly related to the Goal on Hunger, this chapter will limit itself to on-farm tree production, and income generation through markets. The target is for communities to become self sufficient in household wood and non-wood based needs, and to market the surplus. Household self-sufficiency also relieves exploitation pressure from protected forest

and other terrestrial ecosystems. In order for the community to invest in tree establishment and management, two conditions must be met. The first concerns itself with on-farm tree planting as a business i.e. markets must exist to absorb materials produced by farmers. The second concerns itself with a deliberate programme, referred to as "market-based development", to deliberately facilitate and support on-farm production, processing and marketing.

Unlike other thematic areas in this chapter that are conservation and/or protection based, the present section is people sensitive. It is developed around population, the demand for environmental services and products, regional representation of the demand, and the potential for meeting the demand on the basis of climate. Activities under each intervention will vary, depending on the agro-climatic zone in question.

9.3.4 On-farm Tree Establishment and Management

A 34-year old government-led Rural Afforestation Extension Programme (RAES) has largely been unsuccessful, due to at least three factors. First, RAES was launched in the absence of a clear policy and as a result, the FD's poor community empowerment record undermined its sustainability; for example, farmers had no role or responsibility in the management of the 100% FD financed tree nurseries.

Second, on-farm tree planting remains unprofitable due to FD's unnecessary restrictive regulations imposed on the market. For example, it is illegal to produce and transport charcoal and yet every household uses it. The problem is not its production, but the FD's inaction combined with inability to regulate production, sale and transport of a commodity with an annual national market value of Ksh. 30 billion. FD's subsidies on wood harvested from the forest estate complicates the market for on-farm produced wood, and as result undermines profitability of on-farm tree crops.

Broadly, the country is categorized into three agro-climatic zones: zones 1-3 where the main activity will be *E. grandis* intensive wood and fodder biomass production, coupled with high value medicinal plants (*P. africana* and *Wabugia ungadensis*); zones 4-5 where fodder production and wood-fuel using adapted tree species will dominate; and zones 6-7 where rangeland rehabilitation combined with gum resins and oils will dominate (e.g. aloe, frankincense and myrrh). It is possible to double the eucalyptus yields of 320 m^3/ha over the 8-year rotation period (or 40 m^3/ha per year) to 640 m^3 of a *Eucalyptus grandis*. The annual income accruing from on-farm tree crops would be even higher than the annual income from crops like maize.

According to a survey commissioned by the Ministry of Energy in 2000, fuel-wood is widely used as a source of energy by 89% and 7.1% of rural and urban households, respectively. The average per capita consumption is 741 and 691 kg in the rural and urban areas, respectively. On the basis of the current per capita average consumption of 716 kg and assuming similar future patterns, total national wood-

fuel demand will increase from 46,051,356.15 (grown on 72,000 ha) in 2005 to 55, 076,923 (grown on 86,000 ha) in 2015. Incorporated within these projected household energy demands is also the projected wood-fuel for the primary school feeding programme. Table 9.2 summarises the wood-fuel demands based on population projections and a productivity of 80m^3 per hectare per year.

The intervention to address household annual wood-fuel needs (50,454,327.85 m^3) involves on-farm tree planting. Out of the 40 million people in 2015, arid to semi-arid lands will be inhabited by about 16 million, mainly relying on natural vegetation, while the balance of about 24 million people in high potential areas will be producing their own wood-fuel. The excess wood will be sold to cottage industries and schools (feeding programmes and for construction of classrooms and desks).

Assuming a productivity of 80 m^3 annually, an area of 43,240 ha under *E. grandis* will be required to bridge the wood fuel deficit. The cost associated with implementing this activity is Kshs. 2.3 billion. The total amount needed for on-farm tree planting to meet fuel wood demands of the cottage industry, school feeding programme and households for the period 2005-2015 is about Kshs 3.6 billion.

Table 9.2: Projected national population and the corresponding wood-fuel demands at a productivity of 80 m^3/ha/year

Year	Population	Household wood-fuel demand (m^3)	Annual production area (ha)
2005	33,445,119	46,051,356.15	71,955.24
2006	34,045,843	46,878,506.90	73,247.67
2007	34,652,581	47,713,938.46	74,553.03
2008	35,265,273	48,557,518.63	75,871.12
2009	35,883,854	49,409,306.65	77,202.04
2010	36,508,255	50,269,058.81	78,545.40
2011	37,090,000	51,070,076.92	79,797.00
2012	37,675,000	51,875,576.92	81,055.59
2013	38,985,000	53,679,346.15	83,873.98
2014	39,520,000	54,416,000.00	85,025.00
2015	40,000,000	55,076,923.00	86,057.69
Total		**554,997,606.40**	**867,183.76**
Mean		**50,454,327.85**	**78,834.89**

9.3.5 Forests and Other Terrestrial Ecosystems

Interventions under this theme will be implemented in close collaboration with those outlined under market-based development. The three thematic areas are forests, forest research and wildlife management beyond ministerial and departmental boundaries. For example, forests are defined in their broad sense to include those under the Forest Department, private ownership, local government, development authorities (like TARDA), etc. The forests under the Wildlife Act are covered under Wildlife Management and Conservation section below.

9.3.5.1 Management and conservation of indigenous forests

The official area of gazetted natural forests is presently estimated at 1.7 million hectares, including those under the ministry of local government. Therefore, the proposed budget will have to be shared between natural forests under Environment and Natural Resources and Local Government (County Councils) on the basis of gazetted natural forest area under each. The objective is to ensure that these forest ecosystems are sustainably managed to ensure continued optimum functions that sustain environmental services and products.

The budget for management that allow for sustainable utilization of natural forest is comprised of two parts: security (or survey and maintaining of boundaries) and administrative overheads (which include infrastructure). The budget for security, effective management and conservation of the 1.7 million hectares of natural forests (including water catchments areas) is estimated at Kshs 856.40 million up to 2015. The cost of infrastructure for the same period is Kshs 3.06 billion, forest fire management Kshs 6.62 billion and research Kshs 937.6 million. Resources for the period 2005-2015 required to achieve the natural forest interventions are about Kshs 10.53 billion.

9.3.5.2 Forest plantations: Become self-sufficient in industrial wood

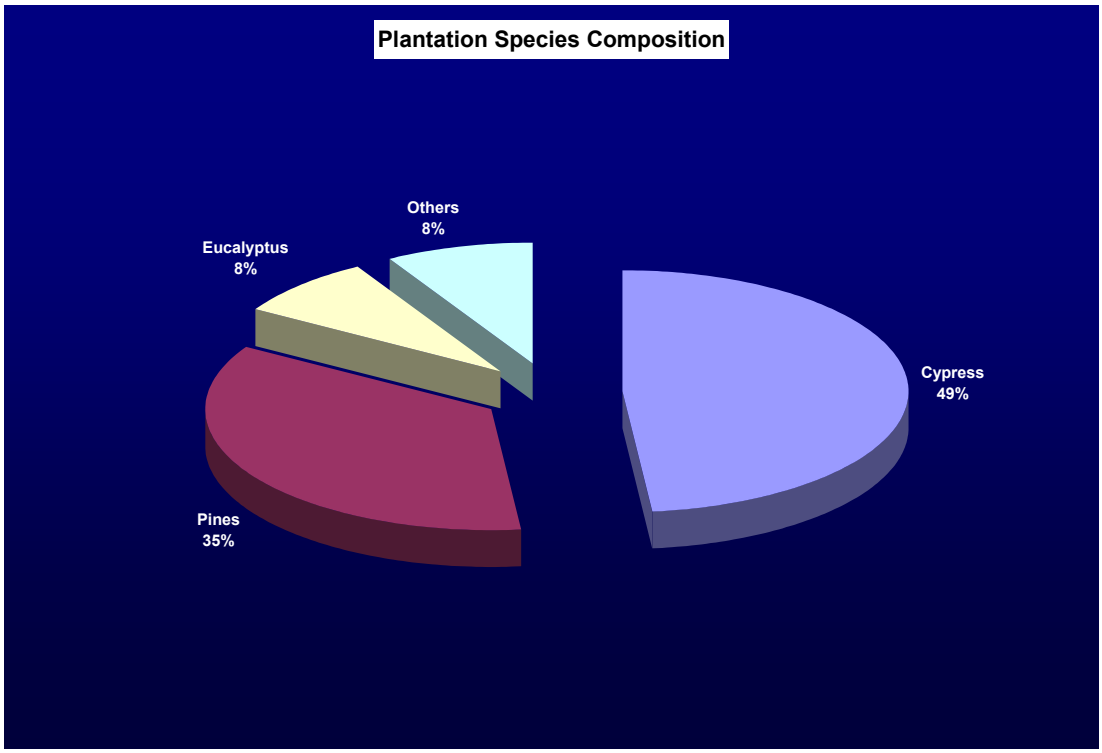
Out of a total 120,000 ha of forest plantation area, only 80,000 ha were estimated to be under trees in 2003; and the productivity of the area currently under trees is very poor. As a result, the current wood deficit is estimated at 40,000 ha (equivalent to about 30,000,000 m^3, based on a 30-year rotation cycle and average m.a.i of 25 m^3). The target for an industrial plantation programme therefore is to successfully establish and effectively manage a backlog of 120,000 ha by 2015.

Three reasons underlie the failure of forest plantation programme - inadequate budget allocation; erosion of professionalism in the forest sector; and political interference in the management of the forest estate. These negative factors must be stopped and reversed if self-sufficiency in industrial wood is to be achieved, and if exploitation pressure on forest ecosystems earmarked for protection is to be relieved. This does not come free, and therefore a more realistic budget is urgently needed.

Table 9.3: Plantation species composition by area in 2003

Species	Area (ha)	(%)
Cypress	39,663	48.4
Pines	28,814	35.2
Eucalyptus	6,730	8.2
Others	6,744	8.2
Total	**81,950**	**100**

Figure9.3: Plantation Species Composition



During the period 2005-2015, a minimum 95,000ha of genotipically elite industrial forest plantations must be established. Of these, 40,000ha will make up for the backlog and an additional 55,000ha to compensate for the annual harvest, estimated at about 5,000ha. Considering the current poor state in which the FD finds itself, establishing and managing 95,000ha of new plantations and additionally managing 80,000ha (declining at the rate of about 5,000ha annually) of currently existing plantations pose a big challenge. A practical recommendation is for the strategy to allow for time for self-organization in order to streamline internal structures so as to develop and operationalize an efficient and effective utilization of resources.

Building on the principles of the draft *Forest Bill 2003*, the private sector must be involved in the establishment and management of industrial forest plantations. Of the 95,000ha to be established during 2005-2015, the private sector should take up the responsibility for establishing and managing 40,000ha, in a legally binding land lease arrangement with the Forest Department. The land lease arrangement will generate annually Kshs. 60 million as income to the FD (estimated at Kshs 1,500 per ha per year). The share of the FD out of the total 95,000 ha target will be 55,000ha by 2015.

Availing the elite genotypes to be used by both the Forest Department and the private sector as planting stock and improved management protocols will be the

responsibility of the Kenya Forestry Research Institute (KEFRI). Applying Kshs 63,100 per ha as the minimum cost for establishment and effective management of a hectare of a forest plantation, the total budget required by the FD to deliver on a targeted 55,000ha is Kshs 5,017,992,000. The private sector will invest a total of 3.01 billion to meet a target of 40,000ha of new forest plantations for the period 2015-2015.

9.3.5.3 Forest research to support productivity and effective management

Interventions under research will be implemented in close collaboration with those outlined under market-based development. The research agenda for Kenya's MDG is to facilitate and support increased industrial forest productivity, and increase effective sustainable management and conservation of natural forest, in order to increase economic and social benefits to farmers and forest-adjacent dwellers through sustainable utilization of environmental services and products. For the period 2005-2015, two targets are singled out for forest research: to increase yield of planted trees both on-farm and in plantations by 67.5%, and tree-based revenue to account for 20% of the household income. The four priority economic tree species targeted for Kenya are *Cupresus lusitanica*, *C. radiate*, *Pinus patula* and *Eucalyptus grandis*. Other species with potential included are *Melia volkensii* (in the semi-arid areas), *Prunus africana*, giant bamboo, etc. The main activities to increase tree productivity include tree-seed orchard establishment and access to superior tree seed.

The establishment of tree seed orchards should shift from Government monopoly and give greater emphasis to roles and responsibilities of communities, through creating options that open up space for private sector participation. In order to ensure increases in tree yield by 67.5%, 30ha of tree seed orchards should be urgently established, to yield annually 28,371.2 kg seed of the four economic priority species. A budget of Kshs 4,234,500 for the selection, design, establishment and management of 30ha of tree seed orchards by June 2006 is required. Also, Kshs 683,963,804 is budgeted for production of 28,371.2 kg seed per year by 2015.

To improve access to superior tree seed, seed production and distribution represent an area ripe for private sector involvement. An additional budget of Kshs 2.16 million is needed to develop a strategy to explore and elaborate mechanisms of how private sector can augment the problem of access to superior seed. Proposed activities to support the realization of the ambitious intervention for increases in stand productivity include support for formulation of a strategy, breeding programme, capacity, seed production and acquisition of modern computers. Also, KEFRI will pioneer scientific work leading to increased effective management and conservation of natural forests by the Forest Department, and local government (county council forests). A total of KShs 171,360,000 has been budgeted for over the next 11 years (2005-15). Overall, increased yield means that more wood can be

produced from a smaller area, with positive implications for conservation of biological diversity.

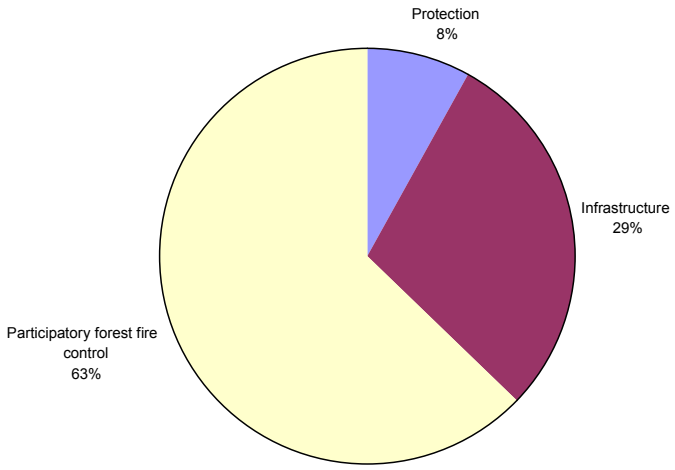
It is projected that tree-based revenue will account for 20% of the household income by 2015. Increased on-farm wood productivity as a result of improved management and use of superior tree seed has the potential to more than double yields of on-farm wood (from *E. grandis*). This will reduce on-farm land devoted to woodlots by 50%, from current 61,014.55ha to only 30,507.28ha by 2015. Doubling on-farm wood productivity will halve the farmers' budget devoted to tree establishment and management, free up land that can be used for food production or wood that targets the markets, and save the farmer more than KShs 2.4 billion nationally for the period 2005-2015. This translates into more KShs 170.01 million per year, with food production from the freed-up land amounting to KShs 46.23 million, estimated on the basis of current maize yield at current prices.

To facilitate the elaboration of a protocol for forestry to contribute 20% of household income by 2015, KShs 8,400,000 has been budgeted to support the community outreach activities. An additional budget targeting communities is provided for under the intervention on "market-led development".

Table 9.4: Interventions on forests and other terrestrial ecosystems (kshs)

Intervention/Activities	2005-2015
MANAGEMENT AND CONSERVATION OF INDIGENOUS FORESTS	
Protection	856,448,995
Infrastructure	3,057,150,000
Participatory forest fire control	6,616,055,800
Total	**10,529,582,795**
NEW FOREST PLANTATIONS BY PRIVATE SECTOR AND FOREST DEPARTMENT	
(1). Private sector to establish 40,000 ha	
Strategy	101,116,000
Plantation establishment & management	2,250,000,000
Land rent	660,000,000
Sub-total	3,011,116,000
(2). Forest Department to establish 55,000 ha	
M&E	121,000,000
Enforcement of plantation management standards	242,000,000
Plantation establishment and management	3,470,500,000
Land rent	907,500,000
Management for existing plantations	736,000,000
Sub-total	5,017,992,000
Total (for plantations)	**8,029,108,000**
INTERVENTIONS IN CLIENT-FOCUSED FOREST RESEARCH	
1. Improved yield and management	
Private sector involvement in research strategy	2,160,000
Application of increased productivity	9,900,000
Seed orchard establishment and management	4,234,500
Superior seed production and dissemination	683,963,804
Sub-total	700,258,304
2. Support to the outreach programme	8,400,000
Sub-total	8,400,000
3. Equipment	
Computers and accessories	2,400,000
Vehicles	24,000,000
Sub-total	26,400,000
4. Capacity	
Acquisition of emerging new skills	25,000,000
PhD training	1,500,000
MSc	8,400,000
BSc	62,000,000
Diploma	36,000,000
Non-technical personnel	69,600,000
Sub-total	202,500,000
Total	937,558,304

Figure 9.4:Proportion of the cost of management and conservation of indigenous forests



9.3.6 Wildlife Management and Conservation

Total gazetted area for wildlife management and conservation stands at 4,403,595ha. The wildlife sector is home to the world famous national parks and game/marine reserves, is central to Kenya's biological diversity, and the base for the tourism industry worth Kshs 53 billion annually. A very small fraction of this revenue reaches the poor, because the trickle-down approach does not favour the poor.

The three main interventions to address priority problems in wildlife sector and tourism industry are effective management of wildlife areas; to provide security within wildlife areas and to the broader tourist industry; and community involvement in order to benefit from the sector. These interventions will cost KShs 9.5 billion for the period 2005-2015 in addition to what the wildlife sector currently receives from the government, broken down into management aspects (KShs 2.1 billion), security (KShs 5.3 billion), and the community component (KShs 2.1 billion).

Table 9.5: Interventions in wildlife management and conservation (kshs)

Intervention	**Wildlife management and conservation**			
Activities	Annual Quantity	Unit Cost	Annual Cost	2005-2015
1. Effective protected area management				
Management & conservation				1,317,999,600
Implementation of international conventions				810,000,400
Subtotal				2,128,000,000
2. Security				1,487,999,700
Security for tourism industry				42,820,800
National Park security				5,255,001,000
Sub-total				5,297,821,800
3. Communities				
Community participation				576,002,100
Support to community projects				1,487,999,700
Sub-total				2,064,001,800
Total				9,489,823,600

9.3.7 Market Based Development

The objective of the market-based development initiative is to facilitate and provide effective and efficient support to the on-farm tree production, processing and marketing. The aim is commercialisation of on-farm wood establishment, management and production; facilitating community income generation; and support to interventions identified under other thematic areas like national framework, fisheries and other aquatic ecosystems, land degradation, forests and other terrestrial ecosystems, climate change, and pollution.

The four interventions to ensure that on-farm tree crops contribute 20% of household income are selecting and developing value tree species for the market (KShs 22.6 billion), training farmers to add-value to their tree-based products for the market (KShs 31.6 million), training farmers on skills for entering and sustaining participation in markets (KShs 1.9 billion), and support for a farmer financing scheme (KShs 467.6 million). The total amount of resources required to implement the market-based development thematic area is about KShs 25 billion.

Table 9.6: Interventions in support for developing markets and linking them to farmers (kshs)

Activities	Annual Quantity	Unit Cost	Annual Cost	2005-2015
1. Production of non-timber forest products (NTFP)				
Income based commodity selection				560,000
Developing value species				18,900,000,000
Aromatic plants				420,000,000
Spices and condiments				420,000,000
Gums and resins				600,000,000
Honey				1,500,000,000
Fruits and shrubs				420,000,000
Ecotourism				350,000,000
Subtotal				22,610,560,000
2. Farmer training in value-adding to NTFP				
Support to a pilot processing centre				5,600,000
Quality, grading and standards				768,000
Preservation & storage pilot centre				25,000,000
Certification and branding				256,000
Sub-total				31,624,000
3. Community training in access to markets				
Entrepreneurship				1,750,000,000
Savings and credit				44,800,000
Small-scale business planning				38,500,000
Markets & trade negotiations				24,500,000
Contracts negotiations				24,500,000
Sub-total				1,882,300,000
4. Access to resources				
Policy elaborated				4,480,000
Market infrastructure				112,000,000
Support to farmer organization & institutions				11,900,000
Village bank strategy				3,200,000
Support to operationalising the village banks				210,000,000
Village bank seed money				126,000,000
Sub-total				467,580,000
TOTAL				**24,992,064,000**

9.4 Summary of Costs for Environmental Sustainability Interventions

The resource requirements identified by the needs assessment are by and large, an addition to those already provided annually to the Ministry of Environment and Natural Resources (MENR) through the national budget. For example, allocation for the 2004/05 year was about KShs 2.8 billion or KShs 83.72 per capita (or US$ 1.05 at an exchange rate of KShs 80 per US$). The present needs assessment recommends a per capita increase from the current KShs 83.72 to KShs 383.25 (US$ 4.79).

The needs assessment is comprised of two types of interventions: those whose cost and implementation is to be met by the private sector, and those whose implementation resources are sought. A gross total of KShs 138.9 billion is needed for the period 2005-15, which distributed equally result in an annual investment of KShs 7 billion starting 2005 and peaking to KShs 11.3 billion in 2015.

The cost of implementing on-farm tree planting to meet household and cottage industry needs (land degradation), and the private sector plantation component are to be met by communities and the private sector. This reduces the budget by KShs 16.34 billion, resulting in net additional budget sought to KShs 122.5 billion for the period 2005-2015. This would comprise the current annual budget of Kshs .2.8 billion for 11 years (30.8 billion) and an additional KShs 122.5 billion, making a total of KShs 153.3 billion.

Table 9.7: Summary cost of proposed environmental sustainability interventions and their targets (kshs)

Main intervention	Targets	Needed Resources
1. National Environment Framework		
Getting organized	All actors in the environmental green sector at the national level operational by 2008	84,289,000
Management and enforcement of environmental actions (NEMA)	Ensure compliance with environmental policies and legislation by 2010	1,221,502,000
Environmental accounting	Policies that reflect a more comprehensive understanding of the relationship between the economy and the environment developed and implemented by 2010	97,126,500
Sub-total		**1,402,917,500**
2. Fisheries and other Aquatic Ecosystems		
Management		
Restocking programme		
M&E		
Sub-total		**2,310,000,000**
3. Community Incentives In Land Degradation		
On-farm tree crops	On-farm tree crops in pilot site accounting for 20% of the household income by 2015	5,828,305,694.5
Market-based development	On-farm tree crops in pilot site accounting for 20% of the household income by 2015	24,992,064,000
Sub-total		**30,820,369,694.5**
4. Forests and other Terrestrial Ecosystems		
Indigenous forests	Kenya's indigenous forests sustainably managed for the benefit of all by 2015	10,282,000,000
Industrial forests by private sector	66,000 ha by 2015: A total of 95,000 ha of new forest plantations (Cyprus, 50%; pines, 40%; and eucalyptus, 10%) established by both private sector and the FD by 2015	10,511,616,000
Industrial forests by Forest Department	54,000 ha by 2015: A total of 95,000 ha of new forest plantations (Cyprus, 50%; pines, 40%; and eucalyptus, 10%) established by both private sector and the FD by 2015.	8,377,842,000
Forest Research	Increase plantation productivity by 67%: Increase MAI to C. lusitanica, 30 m3; P. patula, 35 m3; P. radiata, 40 m3; and E. grandis, 80 m3 by 2015	937,553,304
Data collation & management (DRSRS)		1,250,100,000
Sub-total		**31,359,116,304**
5. Wildlife Management And Conservation		
Management	Ensure the sustainability of protected areas through effective management and conservation by 2015	
Security		
Sub-total		**9,484,823,600**
TOTAL		**138,862,667,100**
NET BUDGET		122,522,737,100

9.5 Financing the Operationalization of the Interventions

Although the budgeted resources are large, some of the interventions will not require financing from the central government, for example, on-farm tree planting. More than 50% of the budgeted resources will come from the communities (in the case of on-farm tree planting), private sector, civil society, development partners, and an innovative arrangement that will see the Ministries commit resources for environmental sustainability. As part of the environmental framework, a joint environmental strategy and implementation budget will be agreed upon by all the stakeholders, for joint implementation and monitoring of impact as a result of invested resources.

9.5.1 Community Contributions

This will be in form of opportunity costs – resources that would otherwise be tied-up in developing and running public rural extension institutions, tree nurseries and associated overheads. Resources currently associated with costs for on-farm tree planting (amounting to Kshs 5.9 billion annually) will be made available for other environmental management work.

The main cost for the on-farm tree-planting programme on the part of the government will be in form of facilitation (creating an enabling environment for markets to flourish, availing superior seed and helping communities get organized). Once the superior seeds are available at the community level, the farmers will raise seedlings, establish on-farm wood lots and harvest them for processing and value adding.

9.5.2 Inter-Ministerial Budget Transfer

There is urgent need for the different government ministries and departments that have a stake in environmental sustainability (benefit from environmental services) to deliberately budget for the environment e.g. power generation, water for domestic use, tourism based on the environment, environmental disease prevention (leukaemia, typhoid, cholera, malaria, etc), and the livestock industry (due to its dependence on rangeland pasture and forage). The entry point for such interests (other ministries and departments) would be through a stakeholder representative in the national environment framework. Some of the suggested action points under such a forum would be a negotiated strategy that goes beyond the MENR as we currently know it, an implementation plan, and a monitoring and evaluation strategy.

9.5.3 Private Sector

This section will have three components. The first will comprise revenue generated through leasing of land by the Forest Department for private sector plantation

establishment. This will generate about Kshs 15 million annually. The second will comprise a natural resource use levy fund, contributed by those with a stake in environmental sustainability and want to buy their way to the discussion table.

The third will be by members of the private sector who are currently participating in conservation and management of the environment (e.g. the WWF-Corporate Club, Nation Media Group, Total Oil, Barclays Bank, etc). However, this participation of the private sector in environmental activities lacks a clear strategy at the national level. Therefore, a study should be commissioned on how to increase the contributions and impact of the private sector into both implementation and research of environmental activities. The negotiations can center around contribution of a proportion of profits made by main producers and consumers of environmental goods and services (e.g. water), and in turn be guaranteed sustainable environmental services and products, in this case water.

9.5.4 Civil Society

The civil society operates sizable budget, in most cases disbursed in parallel with the government's own implementation programme. Under the national environment framework, negotiated priorities, roles and responsibilities are proposed. When identified interventions/activities are costed in a participatory manner, it is possible for the different stakeholders to commit resources to implement activities under their control/supervision. The idea is to jointly develop an implementation plan on the basis of a negotiated and agreed national strategy (short- and long-term), and for each stakeholder to commit resources based on their areas of strength and geographical location (for implementation). This has the advantage of increasing the budget, geographical coverage, and minimizing and/or avoiding duplication. The greatest strength of this approach is in monitoring the impacts of the spent resources, as it makes it possible to gain an overall picture over an array of implementers by applying standard measurement yardsticks.

9.5.5 Development Partners

There will be actions whose budget cannot be met through the identified methods. For such, proposals will be targeted at the Environment Donors Consortium.

9.5.6 Kenya National Environment Fund (KNEF)

The creation of the fund and its management will be the prerogative of the body created to oversee the operationalization of the environmental framework. This will be the place where the different stakeholders, other than the central government, will put their contributions for environmental management.

CHAPTER 10

TOWARDS IMPROVED AND SUSTAINABLE WATER AND SANITATION SERVICES

10.1 Introduction

A target for Millennium Development Goal 7 on environmental sustainability is "to halve by 2015 the proportion of people without sustainable access to safe drinking water and sanitation services". Access to safe water is described as the percentage of the population with reasonable access to an adequate amount of water from an improved source, such as a household connection, public standpipe, borehole, protected well or spring or rainwater collection. Unimproved sources include vendors, tanker trucks and unprotected wells and springs. Reasonable access is defined as the availability of at least 20 litres a person a day from a source within one kilometre of dwelling.

10.2 Situational Analysis

Access to safe water is currently estimated at 89.7% in urban areas and 43.5% in rural areas, or a national average of about 57% (as reported in the 2000 Multiple Indicator Cluster Survey). In addition, about 81% of the population has access to safe sanitary means, with 94.8% in urban areas and 76.6% in the rural areas. The World Bank's 2004 Water and Sanitation Country Assessment has put the current coverage at 49% for water supply (urban 86% and rural 31%) and 86% for sanitation (urban 96% and rural 81%).

Among the main synergies between the water and sanitation sector (WSS) sector and other MDGs are reduced incidence of water-borne diseases, empowerment of women and girls through savings on time and energy especially in provision of water, improvement in the living conditions in slum areas, business opportunities in the envisaged private sector participation (especially for women entrepreneurs in water and sanitation service delivery), and higher retention of girls in school due to improved provision of water and sanitation facilities.

To achieve the MDGs in the water and sanitation sector, the people without access to safe water and improved sanitation need to be halved, which translates to 80% nationwide coverage of safe water supply (urban 96% and rural 66%) and 96% coverage of improved sanitation (urban 96% and rural 89%).

10.2.1 Opportunities for Water Service Improvement

There are several opportunities in favour of achieving the MDG goals as shown in Box 10.1.

Box 10.1:Opportunities for improving water services

- Only 15% of the safe yield of renewable fresh water resources has been developed so far. There remains an opportunity to exploit the balance of 85%.
- The ongoing water sector reforms separate policy formulation; regulation and services provision and define clear roles for sector actors within a decentralized institutional framework.
- ERS and the PRSP give sufficient focus on poverty-reduction.
- The current National Development Plan (2002-2008) has well-laid out plans for the water and sanitation sector.
- There has been sustained donor support in the water sector.

10.2.1.1 Water availability

Kenya is classified as a chronically water scarce country, with an annual renewable fresh water supply of only 647m^3 per capita. Globally a country is categorized as **water stressed** if its annual renewable freshwater supplies are between 1000 and 1700m^3 per capita and **water scarce** if its renewable freshwater supplies are less than 1000m^3 per capita. However, the current level of development of water resources in Kenya is very low; only 15% of the safe yield of renewable fresh water resources has been developed so far. There remains an opportunity to exploit the balance of 85%.

10.2.1.2 Water sector reforms

The Sessional Paper No. 1 of 1999 on National Policy on Water Resources Management and Development and the Water Act 2002, presently guides water resources management. The overall goal of the national water development policy is to facilitate the provision of water in sufficient quantity and quality and within a reasonable distance to meet all competing uses in a sustainable, rational and economical way. This policy separates policy formulation, regulation and services provision; defines clear roles for sector actors within a decentralized institutional framework; and includes private sector participation and increased community development. This policy and institutional framework will catalyse the achievement of the Millennium Development Goal.

10.2.1.3 Economic recovery and poverty reduction strategies

Poverty is a major constraint to realizing the MDG target on access to water and sanitation. However, the Government through the ERS, the PRSP and the current National Development Plan (2002-2008), has put in place a macroeconomic and sector-based framework to reduce poverty through improved growth and a more equitable distribution of resources and benefits of growth. The policy papers and subsequent activities have put high priority on improved water supply and sanitation as one of the preconditions for economic recovery and poverty alleviation.

10.2.1.4 Private and public sector capacity

The Kenyan private sector capacity is relatively well developed. The development of private sector capacity can help the WSS sector benefit from market competition, provided good rules of procurement are in place. The current private sector capacity, in terms of number of businesses in the WSS sector, includes pipe/fitting suppliers (7,000), electrical-mechanical equipment suppliers (not specified), engineering firms (51), drilling firms (37), civil works contractors (1,000), hydro-geologists for siting and supervision (19) and operations and maintenance (347). Private sector participation (PSP) in WSS sector in Kenya is largely unexploited. The public sector has also qualified manpower (see Table 10.1), many of them trained at the Kenya Water Institute (KEWI) under the Ministry of Water and Irrigation, middle level colleges/polytechnics and the local universities.

Table 10.1: Number of piped connections and employees in the piped water sector

	Number of connections	Employees	Employees/1000 Connections
City Councils	228,000	3,700	16.23
Nairobi City Council	160,000	2,594	16.21
NWCPC	232,000	N/A	N/A
Urban	150,000	1400	9.33
Rural	82,000	N/A	N/A
MoW&I	282,000	4000	14.18
Urban	52,000	N/A	N/A
Rural	230,000	N/A	N/A
Total (Average)	742,000	9,100	(12.26)

(Source: World Bank, MDGs for water and sanitation, Country Assessment- Kenya, 2004)

10.2.1.5 Support from development partners

Kenya has a long record of cooperation with development partners in the water sector. Currently, development partners are assisting in the commercialisation of water utilities in the large and medium-sized urban centers (including Nairobi, Kisumu, Nakuru and Mombasa), as well as supporting smaller urban centers and rural areas to improve water supply.

10.2.2 Challenges facing the sector

The water and sanitation sector faces a number of challenges including catchments degradation; poverty; hydrological variability; deterioration of and under-investment in water storage capacity thereby affecting water security (which measures the country's ability to continue to function productively, both socially and economically, given its water supply and demand characteristics); rapid population increase; dilapidated infrastructure; and lack of inter-ministerial collaboration.

10.2.2.1 Catchments degradation

Inadequate management of the country's watersheds has led to excessive soil erosion, increased cost of water treatment, rapid siltation of reservoirs and eutrophication, and reduced hydraulic capacity of conveyance systems. Catchments degradation has given rise to increased runoff, flash flooding and reduced infiltration. The main causes of catchment degradation are poor farming methods, population pressure and deforestation. Catchments protection is key to attaining water security, and the current strategy is for water catchment areas to be delineated and gazetted. Within the current water sector reforms, the Water Resources Management Authority will provide adequate catchment management to ensure sustainable freshwater availability, which is considered a key factor to attainment of the MDG targets.

10.2.2.2 Poverty

The ERS and the PRSP have acknowledged that Kenya's economic performance has been declining in the last two decades, with the attendant increase in the prevalence of poverty estimated at 56% of the population. The performance of key sectors of the economy such as agriculture, energy, livestock, manufacturing, environment and tourism are directly dependent on water security. It is therefore necessary to make water resources development an integral part of the poverty reduction strategy.

10.2.2.3 Hydrological variability

In addition to Kenya being a water scarce country, its annual rainfall is also highly variable from year to year and region to region. Drought is a recurring phenomenon and its impact on water resources and services is usually devastating, while floods have led to disasters particularly in low-lying areas. The country's annual mean rainfall is estimated at 621mm ranging from 411mm in the Ewaso Nyiro basin to 1,368mm in the Lake Victoria basin. These factors call for careful preparedness, management and conservation so that excess water arising from high rainfall years is available during low rainfall years. For example, the 1997-1998 *El Nino* floods caused damage to water supply and sanitation infrastructure estimated at $101 million, and the 1998-2000 *La Nina* droughts had considerable negative impact on the country's economy resulting in serious food shortage in most parts of the country.

10.2.2.4 Deterioration of and under-investment in water storage capacity

With floods and droughts becoming prevalent in Kenya, the country has neither protected the natural buffering capacity of its catchments and wetlands, nor invested in water storage infrastructure to deal with the shock from extreme hydrological events. This low level of development has seen the water storage per capita decline dramatically from 11.4 m^3 in 1969 to about 4.7 m^3 in 1999. It has been estimated that Kenya currently has about 3000 small dams and water pans with a storage capacity of about 124 million m^3, giving a per capita storage of about $4m^3$. The National Water Resources Management Strategy estimates that approximately 3.4 billion m^3 of storage (about $100m^3$ per capita storage) will be required by 2010 to ensure reliable water supply to the country. The construction of storage infrastructure should be undertaken to increase the per capita water storage from the current $4m^3$ to at least $100m^3$ by 2015.

10.2.2.5 Rapid population increase

The rather high rate of population growth coupled by under-investment in the sector has overstretched the capacities of water supply and sanitation facilities in the country. The urban centers will experience the highest population growth rates especially due to migration from the rural areas, and provision of water and sanitation necessary to cope with such influx remains a challenge.

10.2.2.6 Management constraints

While considerable technical capacity exists in the water and sanitation sector, financial and commercial management of WSS utilities is less than desirable, either because they cannot attract the right people or because the utilities lack conditions for proper commercial management. For example, in the case of Ministry of Water and Irrigation, water supply is only a part of the organizational structure of the Ministry, with no administrative, financial and accounting autonomy. In Councils/Municipalities where water and sewerage companies have not been formed, the same situation is evident. Such a centralized system tends to lessen the flexibility of management and reduces efficiency.

10.2.2.7 Dilapidated water and sanitation infrastructure

Most of the water and sanitation services infrastructure was constructed twenty to forty years ago, and has therefore outlived its useful life. The performance of most of these systems has been inadequate. The main factors have been inadequate financial and management capacity, poor choice of technology, economic recession, and lack of water demand management. There is an urgent need for replacement or rehabilitation and augmentation to cater for age and increased demand due to increased population.

10.2.2.8 Inter-ministerial collaboration

Sanitation provision falls under two different Ministries, with sewerage under the Ministry of Water and Irrigation while other forms of sanitation are within the mandate of the Ministry of Health. The full benefits accruing from the water and sanitation sector can only be realized when the two ministries share a common vision and can collaborate in formulation of projects to achieve the MDGs. While there already exists a national policy on water development, a similar initiative to guide sanitation development is yet to be put in place. This scenario may pose a considerable challenge to the speed at which planning for the water and sanitation sector can move.

10.3 Country-level interventions

The MDG generic list of interventions listed in the Model are comprehensive and appropriate for the country. However, an intervention to increase water storage per capita is necessary for Kenya to address a specific need in the country, because the target access to water cannot be achieved without addressing the issue of storage. The interventions adopted from the Millennium Project Model include (a) water supply access through household connections, public stand posts, boreholes with hand pumps, rainwater collection (roof catchments), and protected dug wells; and (b) sanitation access through conventional sewerage, septic tank, pour flush toilet, ventilated improved pit latrine, and improved pit latrine.

In addition to the foregoing MDG generic interventions, the country interventions proposed to ensure achievement of the MDG target interventions include capacity building at Kenya Water Institute (currently the major middle level training institution for the water sector), operationalization of water sector institutional reforms, catchment conservation and management, flood mitigation and management, increase of freshwater storage capacity, strengthening of hydrological monitoring network, ASAL development and land reclamation, water for food production (irrigation), and public awareness campaigns on efficient water use, reduction of unaccounted-for water, catchments conservation and sanitation. In order to achieve the above interventions it is proposed to undertake the following activities.

Box 10.2 : Improvement of water management systems

- Rehabilitation and augmentation of the existing water supply and sewerage works;
- Completion of the ongoing water and sewerage projects;
- Implementation of the proposed new water supply and sewerage projects;
- Construction of small dams and pans;
- Rehabilitation of boreholes;
- Sinking of new boreholes and wells;
- Carry out roof catchment/rock catchment activities;
- Construction of big/medium dams;
- Purchase and installation of surface water monitoring equipment;
- Carry out groundwater investigation and purchase and rehabilitate relevant groundwater monitoring equipment;
- Construction of gabions, check dams, afforestation, terracing, and building dykes;
- Operationalization of all institutions established by the Water Act 2002;
- Rehabilitate and augment the existing irrigation works;
- Intensification of leak control programme to reduce unaccounted for water;
- Conduct public awareness campaigns on efficient water use, catchment conservation and sanitation;
- Development of low cost sanitation technologies; and
- Construction of latrines in schools

Non-structural measures include reduction of unaccounted-for water and strengthening O&M systems for water supplies. There will also be construction of large dams in river courses that have been causing havoc to people during floods in the Lake Victoria basin. The water conserved in the dams will be used for economic gain during dry season. However, most of the measures assume that there will be an

increase in availability of national fresh water resources from 647m^3/capita in 2004 to 900m^3/capita by 2007 and 1300m^3/capita by 2015. This will be accompanied by rehabilitation and installation of hydrological monitoring stations, rehabilitation and equipping the 8 national water quality laboratories, analysing surface water samples and sediment loading, and carrying out groundwater monitoring in the country.

10.4 Human Resource Capacity

The National Water Services Strategy and other studies indicate that the sector has many skilled personnel who are poorly remunerated. These are mainly distributed within the main actors comprising Ministry of Water and Irrigation, National Water Conservation and Pipeline Corporation, Ministry of Local Government and water-undertaking local authorities. Lack of facilities and incentives to the personnel have had adverse effects in the provision of water services. Participation by the private sector has been limited to contractors, consultants, and small-scale independent providers and to a very limited extent, management contracts.

Public Private Partnerships (PPP) and Private Sector Participation (PSP) in direct service provision have been impeded by administrative and regulatory powers that have vested service provision in the hands of the government. However, the human resource in the WSS, even in the private sector, is under-utilized. The decentralization of service delivery envisaged in the Water Act 2002 will open room for active involvement of the private sector in WSS sector. Most studies on the WSS do not identify lack of relevant personnel as a challenge, but rather indicate a need for retraining. The public sector currently has over 9,100 employees in the water sub-sector. Internationally, a staffing level of 8 personnel per a thousand connections is recommended as the optimum level for proper performance of WSS utilities. It is estimated that, by 2015, 25% of the rural population and 86% of urban population will be served by piped schemes. Based on a staffing level of 8 persons/1,000 connections, the human resource necessary for the realization of the MDG has been estimated to be about 34,100 staff by 2015.

Within the ongoing water sector reforms, the role of the Ministry of Water and Irrigation will be largely limited to policy formulation and oversight/supervision. The Ministry has therefore estimated its human resource requirement in line with its responsibilities as 359 technical staff (job groups E-J), 548 professional staff (K-Z), and 297 auxiliary staff (A-D), making a total of 1,204.

10.5 Costing of Proposed Interventions

10.5.1 Rationale for Water Supply Technology Choice

The choice of water delivery technologies should be guided by looking at the potential water sources in each district as documented in the National Water Master Plan Study of 1992. Several factors should be taken into consideration. First, while the dream of every Kenyan is to have piped water in the house, the scattered settlement pattern in the rural areas makes the cost of universal household connections through piped schemes prohibitive. Therefore, where piped schemes are planned the proposed level of service would be by communal standposts. Secondly, in many districts, springs have been the main source of water and most all the viable spring sites may have been acquired especially in the densely populated areas. Thirdly, rainwater harvesting may be the safest source with minimum need for water treatment in the rural areas. Fourth, development of point sources (e.g. boreholes and wells) is appropriate for servicing scattered settlements, while densely populated slum areas with temporary dwellings may be better served by public standposts.

10.5.2 Rationale for Sanitation Technology Choice

The most prevalent and safe sanitation technology in the rural setting is envisaged to be either the Ventilated Improved Pit (VIP) latrine or the Improved Pit Latrine. Among the Muslim communities pour flush toilet is the preferred technology where there is no sewerage system. In urban centers the most effective form of sanitation is waterborne sewerage and the goal should be to cover the bulk of population with sewer connections. Slum settlements can be covered through sewer connections to communal WCs.

10.6 Estimated Costs of Proposed Interventions

In order to appreciate the different needs caused by the disparities in service coverage in the country, each district was considered separately. The costing of water and sanitation services has been guided by unit costs reported by various studies and actual on-going projects, which have been applied across the board to cater for lack of district specific cost data. The unit costs and estimated coverage were fed into the MDG Water and Sanitation Model.

It has been estimated that the country needs KShs 236.878 billion (US$ 3.0 billion) by 2015 to meet the MDG for provision of water and sanitation services. This estimate has been generated from the MDG Model with the generic interventions adopted for the country (KShs. 65.33 billion) and the country-specific interventions amounting to KShs 171.548 billion as summarized in Table 10.2 below. Other country-specific interventions are important to ensure that the essential environment is created to facilitate achievement of above goals. Since

these interventions are not built into the MDG Model they have been costed separately.

Table 10.2: Summary of costs (kshs billion)

INTERVENTIONS		Total Resources Req
MODEL GENERATED WATER AND SANITATION SERVICES		**65.33**
COUNTRY-SPECIFIC INTERVENTIONS (TOTAL)		**171.548**
(i) Water storage & Environmental Conservation		31.189
(ii) Capacity building		0.641
(iii) Legal/institutional framework		0.35
(iv) Water for irrigation	Rehabilitation	24.808
	New development	29.2
(v) Flood mitigation		85.36
GRAND TOTAL		**236.878**

Figure 10.2:Water Intervention Costs (KShs

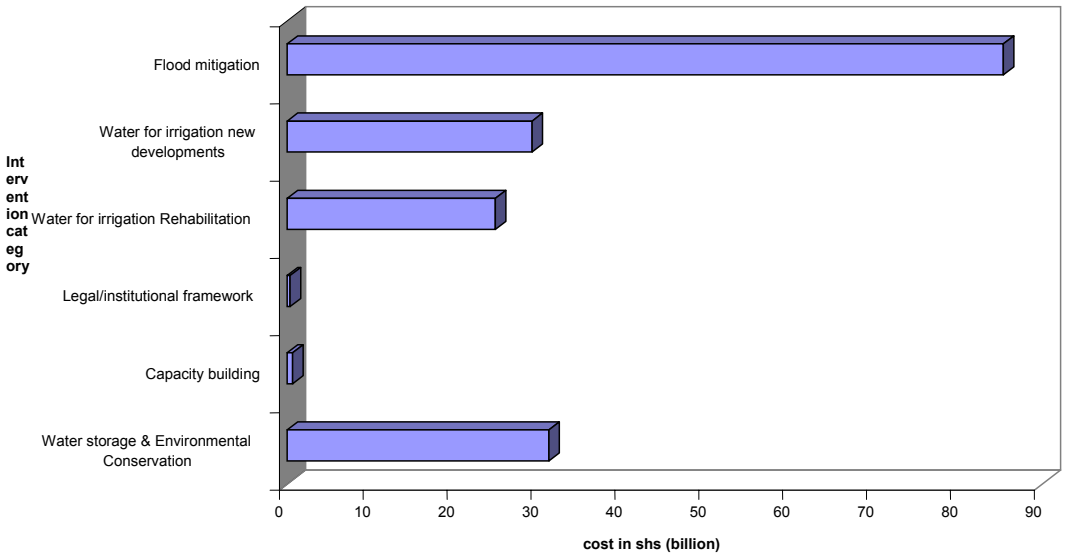


Table 10.3: Summary of total estimated costs of water and sanitation, in us$ million (mdg model)

Classification	2005	2010	2015	% of total in 2015	Total 2005-15	Average 2005-15	% of total over period
Water provision							0%
Capital cost – Rural	8,552,915	7,613,235	7,103,345	8%	84,418,455	7,674,405	10%
Operating cost -Rural	3,577,678	7,453,427	11,125,962	12%	81,582,543	7,416,595	10%
Subtotal rural	12,130,594	15,066,662	18,229,306	20%	166,000,997	15,091,000	20%
Capital cost – urban	8,274,890	14,091,339	15,118,427	16%	148,074,974	13,461,361	18%
Operating cost - urban	13,446,805	20,714,199	28,542,241	31%	228,902,567	20,809,324	28%
Sanitation							
Capital cost – Rural	3,043,101	2,422,786	2,285,131	2%	27,323,541	2,483,958	3%
Operating cost - Rural	1,219,091	1,938,749	2,624,333	3%	21,263,286	1,933,026	3%
Subtotal Rural	4,262,192	4,361,534	4,909,464	5%	48,586,827	4,416,984	6%
Capital cost – urban	5,655,459	8,619,484	9,384,125	10%	91,585,659	8,325,969	11%
Operating cost - urban	4,665,245	8,838,296	13,423,010	14%	98,043,360	8,913,033	12%
Subtotal urban	10,320,705	17,457,781	22,807,135	24%	189,629,018	17,239,002	23%
Total	14,582,897	21,819,315	27,716,599	30%	238,215,845	21,655,986	29%
Waste Water Treatment							
Rural	7,761	10,006	12,432	0%	110,314	10,029	0%
Urban	1,235,461	1,704,553	2,148,557	2%	18,715,443	1,701,404	2%
Total	1,243,222	1,714,559	2,160,989	2%	18,825,757	1,711,432	2%
Hygiene Education	1,494,551	1,518,027	1,493,649	2%	16,628,797	1,511,709	2%
Total cost ($m)	51,172,959	74,924,102	93,261,213	100%	816,648,937	74,240,812	100%

10.7 Financing Strategy

Average annual development investment in water and sewerage systems in the last five years has been about $35 million/year. Overall, during the nineties, about 62% of the development budget to the water sector was funded by the donor community, while about 38% was financed by general revenues of the Kenyan Government.

Table 10.4: Development funding for water & sanitation, 1997/2002 (us$ million)

	MWR	NWCPC	MLA	TOTAL	%
Professional services and other expenses	43.08	20.46	1.81	65.35	37.2
Rural Water Supply	22.3	16.28	0.0	38.59	21.9
Urban Water Supply	6.66	10.18	11.56	28.4	16.1
Urban sewerage schemes	0.0	0.0	29.82	29.82	17.0
WRM & other projects	13.72	0.00	0.00	13.72	7.8
Total	**85.78**	**46.92**	**43.19**	**175.88**	**100**
As % total budget	48.8	26.7	24.6	100	-
Financing					
Appropriations in Aid	45.88	31.57	30.76	108.22	61.5
Government Budget	39.89	15.35	12.42	67.67	38.5
Total Financing	**85.78**	**46.92**	**43.19**	**175.88**	**100**

Source: Ministry of Finance

The Ministry of Water and Irrigation proposes that financial resources to be used to attain the MDGs will come from the following basic sources: loans from development partners, grants from various sources, Government budget, Water Services Trust Fund, water revenues from operators, financing from private service providers, and community contributions through water user associations (WUAs). The financing requirements for the MDG based on the interventions in the MDG Generic Model will be KSh 4.09 billion in 2005, 5.99 in 2010, and 7.46 in 2015, making a total of 65.33. In addition, the country-specific interventions will amount to KSh 171.548 billion over the period. The average annual investment on the MDG Model interventions during 2005-2015 will be about KSh. 5.94 billion.

10.8 Recommendations

To achieve and sustain the Millennium Development Goals, the government's priority should be to quickly implement the Water Act 2002. The service delivery institutions provided for in the Water Act are intended to provide service delivery with adequate autonomy to operate sustainable services.

The government should be committed to the achievement of the MDG by fulfilling its share of the resource requirements and attract donor support for the gap. Third, community involvement should be an essential part of project formulation.

Consequently, every effort should be made to train communities, especially women, to equip them with the appropriate knowledge and skills for this purpose, and promote community-based water committees with clearly defined roles.

The government should encourage and support private sector participation and community management of services backed by measures to strengthen local institutions in implementing and sustaining water and sanitation programmes.

The government should launch a vigorous public hygiene education to popularize safe water use and safe disposal of human wastes to promote good health and conserve the environment. Use of mass media including radio, television, print, drama, etc. shall be instrumental in this campaign.

In order to stem the current trend of giving low investment priority to sanitation, there is need to identify the factors that drive demand for improved sanitation. The lessons learned can then be used to build strategies for marketing sanitation as a sustainable intervention for poverty reduction. Social marketing will ensure that people will choose to receive the kind of sanitation they want and are willing to invest in.

There is also need to hasten the preparation of the Integrated Water Resources Management (IWRM) Plan to provide the framework for addressing the multiplicity of issues that arise in the Water and Sanitation Sector. Implementation of the IWRM plan will form the basis for beneficial use of the water for both health improvement and income generation and hence poverty reduction.

CHAPTER 11

IMPROVING THE LIVES OF SLUM DWELLERS

11.1 Introduction

This section deals with needs assessment pertaining to Goal 7, Target 11, which in Kenya is 'by 2015 to have achieved significant improvements in the lives of slum dwellers while deterring new slum formation.' The identified main performance indicators are the proportion of people with access to secure tenure and the proportion of people with access to improved sanitation. Slums are typical areas where all Millennium Development Goals can be addressed. Such areas are regarded the most visible expression of human poverty. This is one of the most difficult of the millennium targets to operationalise partly due to the very general nature of the goal that covers all aspects of human settlements and given that data on housing inadequacy in Kenya is rather limited.

Housing plays an important role in employment generation and wealth creation. Adequate housing as a social good also contributes directly to improved health and productivity. There is therefore need for informed interventions by Government and stakeholders in facilitating the production of decent and affordable housing for Kenyans. This is only possible if such interventions are guided by accurate and reliable data on housing and related facilities. Unfortunately the housing sector has over the years suffered from serious data gaps. There was however an attempt in the 1999 Population and Housing Census to address this data problem although the Census could only provide benchmark data that requires to be enriched by further statistical inquiries and surveys in the housing sector.

It is evident from the available data that housing shortage is more acute in the urban areas than in rural areas. For instance in 1999, the housing stock in Kenya stood at 10.4 million dwelling units[3] out of which only 19.5% catered for the urban areas leaving 81.5% of the stock in rural areas. While the housing stock is concentrated in the rural areas, the quality of housing especially the level of services is better in urban areas than in rural areas. For instance while only 12% of households in urban areas had mud/wood walls, over 50% of rural households had mud/wood walls; 74.7 % of households in urban areas had access to piped water, only 14.9% of rural households had access to piped water; 27.4% of urban households were connected to main sewers, only 1% of rural households were connected to main sewers; and 32.1% of urban households were connected to electricity while only 1.9% of rural households were connected to electricity.

[3] Defined in this context as a place of abode or residence occupied by one or more households with a 'private entrance'. It is therefore a structure used by a household for sleeping, eating and entertaining guests.

11.2 Urbanization And the Proliferation Of Slums

Recent statistics indicate that the majority of the people in urban areas do not own homes as the level of owner-occupancy has been declining. The housing problems in urban areas are also closely linked to rural-urban migration of citizens in search of better economic prospects.

Among the urban challenges that will require the concerted attention of the government, local authorities, the private sector, local communities, civil society and development partners are: inadequate shelter, tenure regularization in informal settlements, unemployment, delinquency, crime, unavailability of clean water, inadequate drainage and sanitation, lack of adequate public transport, environmental degradation, urban poverty, etc.

11.3 Situation Analysis

The 1999 National Population and Housing census recorded the national population as 28,159,922. The urban population accounted for 34.5 %. Out of a total of 10.4 million dwelling units, 81.5% were recorded in the rural areas. The average household size was 4.44 nationally. The total number of households was 6,335,295. The number of households in urban areas was 1,602,044 accounting for 25% of the national total. The average room per dwelling unit was 1.74, and the urban areas recorded 1.65 (see Table 11.1). In terms of congestion measured by number of persons per room, an average of 1.55 persons per room was reported at the national level while the urban areas reported 1.72 persons per room, indicating higher congestion in urban areas. Most households occupied single rooms especially in the urban areas where 58.9% of the households resided in single rooms. Majority of urban households preferred single rooms partly due to high rents associated with dwelling units with two or more units. It was evident that most households (74.9 %) in urban areas are renters (see Table 11.2) while most households in rural areas (87.3%) own their own dwellings, a majority of which are constructed on self-help basis.

Table 11.1: Percentage distribution of households by number of rooms occupied (selected towns)

TOWN	1 Room	2 Rooms	3 Rooms	4 Rooms	5 Rooms	6 Rooms	7+ Rooms
NAIROBI	67.18	14.05	8.62	4.87	2.17	1.12	1.98
MOMBASA	63.24	15.32	8.95	6.11	2.28	1.68	2.42
NAKURU	61.31	19.58	10.61	4.27	1.74	0.95	1.55
KISUMU	51.16	24.5	13.92	5.89	2.23	0.83	1.45
ELDORET	60.16	21.93	9.49	4.7	1.64	0.75	1.32
THIKA	70.12	15.17	7.69	3.42	1.17	0.57	1.85
RUIRU	61.25	19.23	7.41	4.61	2.53	1.68	3.3
KITALE	57.44	24.13	10.1	3.94	1.71	0.88	1.81
NYERI	54.32	19.48	11.94	7.55	2.83	1.47	2.41
MALINDI	59.18	15.39	10.86	7.11	2.86	1.86	2.74

Source: Kenya 1999 Population and Housing Census Analytical Report Volume X

Table 11.2: Percentage distribution of households by tenure in selected towns

Town/Urban Centre	Total Owning	Total Renting
Nairobi	17.93	82.06
Mombasa	28.97	71.03
Nakuru	14.73	85.27
Kisumu	20.56	79.44
Eldoret	19.56	80.44
Thika	18.84	81.16
Ruiru	24.43	75.57
Kitale	21.94	78.06
Nyeri	22.17	77.83
Malindi	35.79	64.21

Source: Kenya 1999 Population and Housing Census Analytical Report Volume X

11.3.1 Household Characteristics

The development of housing has not kept pace with changes in household characteristics, especially in the urban areas. Table 11.3 illustrates some household characteristics in Kenya.

Table 11.3 Household characteristics in Kenya

	Household Size	Female Headed Households in %	Median Age of Household Heads
Kenya	4.4	36.7	25-29 years
Kenya Rural	4.8	39.6	-
Kenya Urban	3.4	26.3	-

Source: Kenya 1999 Population and Housing Census Analytical Report Volume X

It is evident that, given the average household size in Kenya (4.4), the minimum appropriate and decent size of housing for households is a two-room dwelling. This is based on the internationally registered average of two persons per room. In view of this, congestion in residential housing is mostly experienced in urban areas and more particularly in slums and informal settlements as opposed to rural areas. The 1999 Population and Housing Census showed that the average household size in urban areas was 3.4, yet 60% of households in the urban areas lived in single rooms.

Table 11.4: Households formation rates

	No. of Households	Growth Rate	
	1989	1999	
Kenya	4,343,044	6,335,295	1.653
Kenya Urban	976,849	1,602,044	2.085
Kenya Rural	3,366,155	4,733,251	1.519

Source: Kenya 1999 Population and Housing Census Analytical Report Volume X

In development planning, including urban planning and service provision, households are normally the main units of consideration. The annual rate of growth of households (household formation rate) is therefore pertinent in development

planning strategies in order to improve the services in tandem with household growth.

11.3.1.1 Slum mapping in urban areas

While the level of services is better in urban areas than in rural areas, it is in urban slums/informal settlements that extreme cases of poor living conditions are found in. The 1999 Population and Housing Census only disaggregated data up to the level of urban center and then to Enumeration Areas. The analysis did not isolate data pertaining to slums and informal settlements. In view of this, a collaborative effort involving the Department of Housing in the Ministry of Lands and Housing, the Central Bureau of Statistics (CBS), City Council of Nairobi and the UN-HABITAT undertook a slum mapping exercise in Nairobi in June 2002. The exercise identified Enumeration Areas falling under slums and ultimately derived specific data for the slums. The process was replicated in Kisumu and Mombasa.

Preliminary results[4] from this exercise indicate that that 30%, 35% and 30% of people live in slums[5] in Nairobi, Kisumu and Mombasa, respectively. It is important to note that these estimates of proportions of slum population in the towns based on the Census were on a *de facto* basis. These results were also based on a definition agreed on during the mapping exercise, and the definition therefore determines the estimates of slum population. It is also appreciated that the population of some urban areas, especially Nairobi, is higher during the day than at night due to the influence of the satellite (dormitory) towns such as Ngong, Athi River, Ruiru, etc.

11.3.1.2 Unauthorized housing

Since urban areas are faced with serious housing shortages, the proliferation of slums and informal settlements and the construction of unauthorized buildings including extensions in formal estates have attempted to fill the void. Although unauthorized housing accommodates many urban residents, it has contributed to the overstretching of services such as sewer systems, water, roads and other social and recreational facilities. This has led to the degeneration of such residential estates to the point of reducing the value of property in such environs.

11.4 Past Responses & Interventions

The Government recognized the inevitability of slums and informal settlements as early as 1970 as amplified in the 1970/74 National Development Plan. Since then,

[4] The results are not yet published

[5] A slum here refers to settlement that displays poor conditions in terms of access to water, sanitation and electricity; materials used for housing construction; congestion resulting from lack of/non-adherence to planning and lack of security of tenure.

the evolution of policies and interventions dealing with informal settlements in Kenya fits in four stages, namely: provision of minimum services, extension of tenure security and physical upgrading, recognition of the legitimate role of low income settlers and other stakeholders in urban development, and lately the formulation of a comprehensive national slum upgrading programme under the Kenya Slum Upgrading Programme (KENSUP). These periods and interventions have introduced shifts in the housing policy that have until recently, immensely contributed to the nature and extent of informal settlements today:

11.4.1 Provision of Minimum Services

Beginning in the 1970s, the Government realised that slum clearance and public housing could not alleviate the problem of inadequate shelter and thus recognised the political and financial realities and acknowledged the inevitability of informal settlements. The Government policy shifted from the conventional housing to the provision of serviced sites and instituting some degree of cost recovery as seen in the First Urban Project in Dandora, Nairobi, followed by Second Urban Projects in Mombasa, Kisumu and Nairobi.

11.4.2 Extension of Tenure Security and Physical Upgrading

In this stage policy shifts were directed to mobilising financial and 'sweat equity' investment by the low-income residents to improve their own settlements. Government focused on what the people cannot provide for themselves such as legal framework, institutional mechanism, tenure security, infrastructure, and income generation facilities. This can be seen in the improvement programme launched in Kenya in 1978, which included increasing the acceptance and legalisation to facilitate consequent improvement of the informal settlements in the Third Urban Projects.

11.4.3 Recognition of the Legitimate Role of the Low Income Earners in Urban Development

At this stage, a variety of policies governing land delivery, building and infrastructure, land use, long-term financing and cost recovery, and the role of private sector were brought into harmony with the objective of fully and productively integrating the low income majority into the urban development process. This is the enabling approach in which the Government moved away from direct housing provision and concentrated more on creating incentives and facilitating measures to enable other stakeholders provide housing and basic services.

11.4.4 Current Initiatives

The NARC Government rose to power in Kenya in January 2003 on a manifesto which spelled out among other things the need to develop a housing policy that aims at enabling the poor to access housing, and provide basic services and infrastructure necessary for a healthy living environment especially in urban areas. The manifesto

further emphasised the need for the Government to facilitate increased investment by the formal and informal private sector in the production of housing for low and middle income urban dwellers (slum upgrading); research into affordable building materials and technologies; and establishment of a Housing Development Fund. On 30th June 2004 the Kenyan Parliament passed a new National Housing Policy that comprehensively addresses the shelter problem. The policy targets include urban housing, rural housing, slum upgrading and vulnerable groups; and propose solutions within the context of poverty reduction. The policy addresses ways of managing the housing inputs, namely, land, infrastructure, building materials, building technology and finances.

11.5 The Kenya Slum Upgrading Programme (KENSUP)

The Government acknowledges the existence of slums and informal settlements, and is committed to addressing the conditions through upgrading. In pursuit of its commitment to systematically upgrade slums in urban areas, the Government signed a Memorandum of Understanding (MOU) on 15th January 2003 with UN-HABITAT to collaborate in the formulation and implementation of a nationwide slum-upgrading programme - namely the Kenya Slum Upgrading Programme (KENSUP).

The role of KENSUP is to provide a framework for the coordination of all stakeholders to implement and achieve this goal in an integrated manner. The implementation is based on the institutional framework set out in the MOU. The Government is responsible for the programme and realization of the objectives, execution and management and control of financial resources. The stakeholders consist of central Government, local authorities, private sector, NGOs, and CBOs. The programme has a huge potential for stakeholder participation and partnerships. In particular, micro-finance/credit institutions and housing cooperatives have been identified as special purpose vehicles that will assist people living and working in slums and informal settlements in progressively realizing their right to an adequate standard of living.

11.6 Strategic Interventions Under Kensup

The Upgrading entails causing systematic improvement of living and working conditions for people in slums and informal settlements with minimal displacement. It involves securing land tenure, rehabilitation of existing housing structures, development of housing where necessary, planning and provision of social and physical infrastructure, and improving livelihoods through income generating activities. Due to acute prevalence of the HIV/AIDS, addressing the pandemic is also a crucial element in the settlement improvement process. Initially the programme is to cover the towns of Nairobi, Mombasa, Kisumu and Mavoko, and

generally will entail participatory planning and implementation of the following components:

Box 11.1 Interventions under KENSUP

- Preparation of City/Town development strategic and land use master plans: Sustainable neighbourhood planning, land use plans, master plans, city development plans, and city investment plans
- Shelter Improvement: Security of tenure issues, housing development and improvement, proposed mode of development, cost recovery and subsidy, community contributions through corporate social responsibility
- Physical Infrastructure: Sewerage systems, water supply and sanitation, access roads, storm water drainage systems, electricity, security and street lighting
- Social Infrastructure: Schools, health centres, recreational facilities, and community centres (social halls, stadia, etc.)
- Environmental and Solid Waste Management: Neighbourhood garbage collection and treatment systems, cleaning of rivers, dams and open drains within slum areas
- Employment/Income generation: Markets (open markets and market stalls), micro, small and medium enterprise (MSME) sheds (Jua kali sheds), kiosks systems, skills enhancement centres, power supply for income generating activities, micro-finance and MSME credit systems, shopping centres
- HIV/AIDS: Counseling and testing centres, HIV/AIDS dedicated clinics, HIV/AIDS care, education and awareness creation, support systems for HIV/AIDS orphans

The National Housing Policy proposes the facilitation by the Government of the delivery of 150,000 housing units per year for the next five years in order to adequately address the acute shortage of housing in urban areas. The quality of a further 300,000 housing units will be improved annually to address poor housing conditions in the rural areas.

Out of the total of 450,000 units over the five-year period, 150,000 units will cater for urban housing (see annex 1). The 150,000 units have been apportioned on the basis of the 1999 census, which showed that 60% of the population is low-income earners, 18% lower middle, 10% upper middle, and 12% high-income earners. On a *pro rata* basis, 150,000 units for urban housing is apportioned according to these

percentages. Therefore the low-income housing will get 60% (90,000) and the rest will get 40% (60,000). The housing units for the low income will be distributed equally between the rental (45,000) and slum upgrading (45,000) programmes. The 40% for lower middle income, upper middle income, and high income will be realized through owner-occupier programmes that include tenant purchase, mortgage and site and services. The quality of 300,000 units in the rural areas will require improvement.

The estimation of costs is dependent on factors such as the physical location, adopted standards, design construction choices, and contracting methods. However, it takes into consideration the fact that community-led interventions designed and executed with active participation of beneficiaries reduce costs considerably and produces more sustainable outcomes. It also depends on the social and organizational structures that exist. The varied combination of the above considerations creates several different scenarios for arriving at realistic cost estimates for upgrading.

BOX:11.2 Factors influencing the cost of upgrading housing units.

It is recognized that the following factors have an important bearing on the final costs:

- Upgrading investment costs on sites scattered throughout the city can be lowered if trunk infrastructure lines for access, water, sanitation and power supply are already in place and in close proximity to the site, and materials and labour are readily available.
- Upgrading in existing, densely settled, informal settlements can be considerably more expensive than new construction because housing construction or infrastructure installation will often require some demolition and disruption of people's lifestyles.
- Upgrading costs also depend on the nature of the site, particularly in the case of informal settlements built on steep hillsides, sloping or rocky ground, heavy or unstable soils, flood-prone sites or areas with poor drainage.
- Different levels of intervention are required in each slum-upgrading project in relation to the percentage of dwellers to be re-housed within the project.
- There are extreme cases where life and health threatening conditions for existing slum dwellers cannot be removed with physical rehabilitation measures, and thus negotiated relocation of all residents will be the only solution. In this case, costs for assisted relocation and rehabilitation of the original site have to be added to the costs for new housing accommodation.
- There are significant variations in costs for land and for the introduction, expansion, improvement and maintenance of infrastructure and basic services, between towns and within towns;
- House construction costs will also depend on the materials and technology used, the size of the house, and the quality of fit-out;
- Population density can make a substantial difference for all standards of provision: for example, a doubling of densities reduces costs per person by a third.

projected number of households in urban areas in Kenya as at 2005 is 1,896270, up from 1,602,044 in 1999. Likewise the number of households in urban areas in 2015 based on the same growth rate will be 2,511,558. The new household formations between 2005 and 2015 (10 years) are therefore estimated at 615,288. This translates to approximately 60,000 per annum. When this is added to the 150,000 housing units per annum required to clear the current backlog, the aggregate housing need for urban housing over the next 10 years with effect from 2005 is 210,000 housing units annually. Based on the distribution set out in the National Housing Development Programme, the annual requirements for slum upgrading is 63,000 per year (30% of 210,000).

Annex II sets out the costing of the National Housing Programme. The aggregate cost of upgrading per housing unit in year 2005 is Kshs 135,000, or 546,150 in 21015 assuming the current interest regime of say 15%. This therefore translates to an average investment value of KSh 340,575 (average of 135,000 and 546,150)) or US$ 4,257.

Table 11.5 Summary of slum upgrading costs under kensup (kshs)

	Number of dwellings to be upgraded	Average cost per unit	Total cost of upgrading
Annual	63,000	340,575 (US$ 4,257)	21,456,225,000 (US$ 268,202,813)
2005-2015	630,000	340,575(US$ 4,257)	214,562,250,000 (US$ 2,682,028,125)

11.7 Financing Strategy for Slum Upgrading under Kensup

The availability of adequate financial resources on a sustainable basis is essential for the successful implementation and realization of the objectives of the KENSUP. Financial resources will be needed for planning and managing the programme, construction/improvement of the dwelling units and related infrastructure services, purchase of the dwellings by families, and maintenance of dwellings and services. Funds will also be required for other support activities such as research and capacity building, information dissemination, monitoring and evaluation.

11.7.1 Government/Budgetary Allocations

The Government will provide funds through annual budgetary allocations to undertake upgrading for low income and special groups; financing acquisition of land and provision of trunk infrastructure services; research into low cost building technologies; and management and monitoring of programme implementation

With the mainstreaming of the MDGs, KENSUP now targets the production or improvement of about 63,000 dwelling units annually nationwide at an approximate annual cost of Ksh 21.5 billion (US$ 268,000,000). The Government

has made provision of a seed capital of KSh 300 million (US$ 3,750,000) in the 2004/2005 revised budget towards the Slum Upgrading and Low-cost Housing and Infrastructure Fund which was recently set up. Subsequent budgetary allocation and donor contributions will be deposited in this fund.

11.7.2 Private Sources/Household Savings

The KENSUP will promote mechanisms of mobilizing savings from individuals and households including deposits made with developers and mortgage institutions to either purchase houses or secure mortgages. It will also encourage individuals and households to make savings through HFIs and cooperatives for purchase or construction of affordable houses. Families in the informal sector will be encouraged to save.

11.7.3 Savings from Cooperative Societies

The SACCO system in Kenya is well developed and currently provides a veritable channel for mobilizing savings from households. Cooperatives have established a housing loans scheme that will enable members to save and borrow for housing. The SACCO system will continue to channel funds to the KENSUP through loans to their members to make down payments and/or to buy houses. The legislation that governs these cooperatives has been amended to avoid the current mismanagement by leaders of these SACCOs.

11.7.4 The Banking System

The banking system is the most dominant and influential sector in the country's financial system. Going by the nature of bank lending, credit to the housing sector is mainly for short-term construction and commercial loans; and with little being devoted to long-term mortgage finance. However, the banking sector will be an important source of funds for the KENSUP both for construction of projected units to be developed by private developers and mortgages to individuals to acquire the houses. Some major banks have expressed their intention to diversify into the mortgage market. The Central Bank of Kenya has an important role to enhancing these efforts. The banks should endeavour to include pro-poor options in lending. Mortgage guarantee schemes and appropriate insurance will be used to guard and encourage banks to lend to housing development that have used appropriate and innovative building materials.

11.7.5 Non-Bank Financial System

The insurance companies are the second most important financial institutions in the country's financial system. They are perhaps the most important in the housing sector, because of their access to long-term funds through pension and life funds.

Although there are a number of legislative restrictions on the investment of these funds, insurance companies could find innovative and beneficial ways of investing in the housing sector.

The KENSUP will create investment opportunities for managers of these funds to invest in housing either directly once relevant Acts are amended; or indirectly through housing bonds issued by reputable companies, deposits in HFIs, and equity in joint ventures designed to deliver affordable houses under the NHDP.

11.7.6 Private Developers/Contractor Financing

This source will be tapped to finance public sector housing, whereby contractors and developers with funds and land will be invited to upgrade slums for Government, repayable over a period of not less than 5 years. This financing strategy will afford the Government a cost-effective way to realise the objectives of KENSUP using private sector funds and expertise. The process of sourcing this type of funding will be competitive and transparent. Government may also provide land and other incentives with a view to making the dwelling units affordable to the target group.

11.7.7 Capital Markets Authority/Nairobi Stock Exchange

Kenya's capital market is well developed and served by many specialised institutions and agencies. It has been providing both debt and equity finance to investors over the years. HFIs should fully harness the potential of the market with a few companies issuing debts or mortgage for development, such as medium and long-term bonds.

The KENSUP will explore the use of the capital market for housing development since it will provide individual and institutional investors an indirect and efficient way of investing in housing. It could also attract foreign investors to invest in the KENSUP.

Existing mortgage portfolio and specific public funded housing schemes could be refinanced through the capital market to bring in new funds to finance the KENSUP. This will raise funds for HFIs and Government agencies such as NHC that would be used to finance new upgrading projects. In addition, the housing market would be made more liquid to attract institutional investors who otherwise consider housing too long-term and illiquid to meet their investment needs.

11.7.8 Occupational and Individual Pension Schemes

The KENSUP seeks to harness the potential of retirement benefits schemes/funds in accessing the resources required to improve the housing conditions of their

contributors. Currently it is estimated that the entire retirement benefits industry holds an accumulated market value of assets in excess of US$ 2 billion, which translates to 20% of GDP. According to the current laws and regulations, the schemes can invest up to 30% of their funds directly in property. Such funds can be invested in housing development bonds and directly in housing.

11.7.9 International Financial Institutions

In the past Kenya benefited from direct loans to public and private developers for housing and infrastructure development from international financial institutions including the World Bank, Commonwealth Development Corporation, Shelter Afrique, USAID, African Development Bank and other multilateral development agencies. Some of these loans, especially to parastatals, were secured by government guarantee. Recent changes in public fiscal policies and liberalization of the market may however curtail guarantee by Government. The KENSUP will therefore encourage developers, whether private or public, to structure viable upgrading projects that can meet the lending requirements of these institutions without recourse to the Government.

11.7.10 Foreign Investors

International financial institutions will be encouraged to simplify the process of accessing such funds and make them more affordable to majority of Kenyans.

The Government recognises that not all the programmes under the KENSUP could be commercially financed through market sources. In order to ensure affordability and accessibility by the poor and vulnerable groups, projects such as the Kenya Slum Upgrading and Rural Housing will be funded through grants and soft loans. The UN-Habitat was mandated to mobilise financing from the donor community towards the Slum Upgrading and Low-cost Housing and Infrastructure Fund including from the Cities Alliance Initiative. Already some bilateral and multilateral agencies such as SIDA have shown interest in funding capacity building and an appropriate information, education and communication strategy for KENSUP.

CHAPTER 12

THE ENERGY SECTOR

Wind-power

12.1 Introduction

Energy is a cross-sectoral commodity and is literally required for achievement of all the 8 MDGs. The broad categories of energy sources dealt with in this report are the traditional types (firewood, charcoal and other vegetation-based fuels) and conventional or commercial energy types mainly in form of electricity (both from the main and minihydros), and petroleum products e.g. white fuels, kerosene, and diesel, and liquefied petroleum gas (LPG). There are also new and renewable sources of energy in form of wind and solar which have significant potential in meeting energy requirements. Other energy types such as biogas can contribute particularly to household energy requirements.

12.2 Situation Analysis

The major sectors in terms of energy needs are households (both rural and urban), cottage or small-scale industries, commerce and industry, institutions, agriculture, and transport. At household and institutional level, energy is needed for cooking, lighting, pumping water and a host of other needs such as operation of electronic gadgets. For industry and commercial enterprises, energy is the engine that drives productivity – manufacturing, heating and cooling purposes and driving various machines to do a number of economic activities. Cleanliness, which is vital for maternal health and prevention of child mortality and many other ailments, requires significant amounts of appropriate energy. The transport industry requires fuel oil for mobility while agriculture and agro-based industries cannot do without energy. Households take the lion's share of all energy types, accounting for 73.1%. Small-scale industries take about 10%. The data shows the dominant role of biomass

energy (80.5%), while petroleum products account for 18% and electricity only 1.4% (see Study on Kenya's Energy Demand, Supply and Policy Strategy for Households, Small-Scale Industries and Service Establishments, 2002, by Kamfor Company for Ministry of Energy).

Table 12.1: Total energy consumption for all sectors in '000' gigajoules (year 2000)

Category/Fuels	Firewood	Wood for Charcoal	Industrial Wood	Wood Wastes	Farm Residue	Petroleum	Electricity	Total	% Share
Rural Household	225,040	121,999	-	2,183	36,835	6,819	336	393,212	56.8
Urban Household	5,739	96,331	-	1,342	178	6,656	2,603	112,849	16.3
Cottages	20,900	45,774				401	1,273	68,349	9.9
Sub-total	251,680	264,104	-	3,525	37,013	13,876	4,212	574,409	
Agriculture						4,496	-	4,496	0.6
Transport						45,678	-	45,678	6.6
Commerce	-	-	1,747	-	-	60,910	5,622	68,280	9.9
Total	251,680	264,104	1,747	3,525	37,013	124,960	9,834	692,863	100.0
%Share	36.3	38.1	0.3	0.5	5.3	18.0	1.4	100	

The MDGs cannot be achieved without provision of sustainable, affordable and appropriate energy at all times. Indeed, supply of adequate and affordable types of energy for growth and development is the central theme of the Government's energy policy. For a country to make a transition from a subsistent to a fast growing economy, the minimum per capita consumption of modern energy is expected to be at least 300 Koe (kilogrammes of oil equivalent), which is about four times what is consumed in Kenya (89.4 Koe). The Kenya consumption of commercial fuels compares unfavourably with other countries, with Koe/capita being 517 for Sub-Saharan Africa, 2,514 for South Africa, and 5,694 for developed economies.

Poverty eradication will entail increased use of appropriate energy sources (mainly electricity) for cooking, water heating and income-generating activities. Provision of energy to households to reduce poverty and hunger also benefits women who are freed from drudgery of collecting firewood, while children have better chances of learning with adequate light for longer hours. The annual energy requirement by households and their small income-generating activities is approximately 675 million gigajoules.

It is difficult to achieve UPE without provision of adequate and appropriate energy for lighting and cooking in day and boarding schools. However, there is inadequate information on energy requirements for boarding and day schools in the country, hence the need to generate primary data to determine consumption and energy preferences for various spatial domains and agro-ecological zones.

In most parts of the country, the collection of biomass fuel is the primary responsibility of women. Promoting gender equality and empowering women requires provision of other cleaner types of energy. At the farm level, there is need for sustainable supply of biomass, and for women to have tree tenure (usufruct rights) and have a say in planting trees and utilization of tree products. In most situations, women can only use tree branches and crop waste as it is mainly men who make decisions on wood resources.

The achievement of health-related goals (child mortality, maternal health, combating HIV/AIDS, malaria and other diseases) will require provision of energy for lighting, cooking and driving a number of life support systems and other electronic equipment in health facilities. Disease prevention – a better and more cost effective strategy than treatment – is indeed dependent on adequate provision of appropriate energy, which in most cases is electricity. There is a need to provide electricity to remote health centers with decentralized stand-alone systems e.g. mini-hydro, solar and wind or even thermal electricity.

12.2.1 Energy Requirements by Major Types

12.2.1.1 Biomass energy

Total biomas annual consumption in 2000 was approximately 35,119,615 tonnes and this was projected to 49,164,960 tonnes by year 2015 resulting into annual deficit of 31,180,555 tonnes by then if policy strategies are not put in place. The energy needs for this exercise assumes implementation of policy strategies and funding for the same, in which case the observed annual deficit of 20 million tonnes in year 2000 will be reduced from 31 million tonnes to 5 million tonnes in 2015, and eliminated altogether in year 2020. The projections for biomass energy requirements assume gradual energy switch from biomass energy to other cleaner forms of energy like LPG and electricity.

There has been great reliance on biomass energy, resulting in degradation in farms, rangelands and even in gazetted forest areas due to heavy scavenging of wood fuel. This has led to environmental degradation in terms of deforestation, soil erosion, silting of water bodies, and general air pollution. What is needed is sustainable supply of biomass, proper management of biomass energy, and shift to cleaner energy types.

12.2.1.2 Electricity

Electricity is the most modern and convenient fuel and ranks highest on the energy ladder. Households use electricity mainly for lighting and cooking. However, due to

the high cost of electricity, only about 46% of urban and 3.8% of rural households have access to electricity. Nationally, this translates to only 15%. Mean annual household consumption averages 844 kilowatt hours (kWh) in urban and 544 kWh in rural areas. Higher income urban households consume the largest amount of electricity (1,352 kWh) compared to 606 kWh by the low-income group. The national grid only serves a small proportion of the country. It is relatively cheaper to connect urban people, but quite expensive to connect rural households because of the scattered nature of settlements. On average, it costs about KShs 200,000 to connect a rural household.

12.2.1.3 Petroleum

Kenya does not yet have oil and most of the petroleum products are all imported either refined or in crude form. There has been oil exploration particularly at the coast and prospects are promising. The main petroleum products required for energy purposes by the various end uses are LPG, kerosene, jet fuel, premium gasoline, gas/diesel and fuel oil.LPG is not widely used, and only 7.8% (23% urban and 1.8% rural) of households use it.

In 2003, consumption of motor gasoline (premium and regular) was 361,000 tonnes. Out of 2.3 million tonnes of petroleum requirements, gasoline accounts for about 16% of market share. The share of gas/diesel is quite high compared to other fuels, at around 603,000 tonnes or about 26% of petroleum products. Most commercial vehicles and a few private diesel vehicles are the main users. The use of fuel oil is also substantial at 548,000 tonnes or 24 % of the oil market. The balance of 34% is accounted for by LPG, kerosene and jet fuel.

12.2.1.4 Solar

The main use of solar energy is for lighting and heating water. It is a clean form of energy. Most households that use solar energy have a single photovoltaic panel with a power rating of 12-25 watts. The marketing of solar panels mainly takes place through private initiatives. The main issue is the capital cost as most consumers find the technology expensive. Skilled technicians for backup maintenance are also in short supply and one of the consequences of this is that once solar panels are installed, quite a big proportion does not function well after a few years. For areas away from national grid, use of solar remains one of the best options of using clean energy.

12.2.1.5 Biogas

Biogas is not widely used in Kenya**.** However, according to the Intermediate Technology Development Group (ITDG), approximately 1,100 biogas units were operational in Kenya. However, scarcity of maintenance technology and the fact that most households do not have piped water were among the constraints to wider adoption of biogas.

12.2.1.6 Other energy types

It is estimated that 73% of households use 1.5v dry cell batteries and 8.5% use 12v vehicle batteries, despite the fact that this is an extremely expensive form of energy. Candles are also used in retail markets, in the rural areas for lighting, and in urban areas when electricity is rationed.

12.2.2 Projections of Energy Needs (2005-2015)

The projection of energy types takes into account the population growth and economic growth. While modern conventional energy types are very sensitive to economic growth, biomass energy growth is greatly influenced by the population. It is more dependent on the number of people, much more than the conventional energy whose consumption greatly depends on peoples' affluence and economic development. The projected energy needs only covers the major energy sources, namely, biomass, electricity and petroleum products.

12.2.2.1 Biomass

Without policy intervention measures, consumption of biomass energy was projected to grow from 35 million tonnes in year 2000 to 53 million tonnes in year 2020 without policy intervention, and to 30 million with policy intervention. The policy interventions are demand reduction and supply enhancements through efficiency improvement at the energy production and use stages, and sustainable development of biomass production in all categories of lands. The overall population growth is estimated at 2%, and that of the urban population at about 4%. The projected consumption was for years 2005, 2010, 2015 and 2020, while biomass needs in the intermediate years are obtained by assuming uniform annual reduction in consumption.

Table 12.2: Projection of energy needs by the major types, 2005-2015

Categories/ Years	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Population											
Rural	25,083,839	25,534,382	25,989,436	26,448,955	26,912,891	27,381,191	27,850,784	28,326,062	28,807,044	29,293,745	29,786,181
Urban	8,361,280	8,511,461	8,663,145	8,816,318	8,970,964	9,127,064	9,283,595	9,442,021	9,602,348	9,764,582	9,928,727
Total	33,445,119	34,045,843	34,652,581	35,265,273	35,883,854	36,508,255	37,134,378	37,768,083	38,409,392	39,058,327	39,714,908
Overall Pop growth %	2	2	2	2	2	2	2	2	2	2	2
Biomass energy (tons)											
Fuel wood	18,704,064	18,450,481	18,196,898	17,943,315	17,689,733	17,436,150	17,246,609	17,057,068	16,867,528	16,677,987	16,488,447
Wood for charcoal	16,586,622	16,361,747	16,136,872	15,911,997	15,687,121	15,462,246	15,294,163	15,126,080	14,957,996	14,789,913	14,621,831
Sub-total Biomass	35,290,686	34,812,228	34,333,770	33,855,312	33,376,854	32,898,396	32,540,772	32,183,148	31,825,524	31,467,900	31,110,278
	564,651	556,996	549,340	541,685	534,030	526,374	520,652	514,930	509,208	503,486	497,764
Electricity (GWh)											
Hydro	3,036	3,058	3,109	3,217	3,352	3,700	3,560	3,541	3,474	3,546	3,602
Geothermal	891	890	890	1,156	1,135	1,135	1,694	2,206	2,158	2,161	2,158
Thermal	1,190	1,480	1,666	1,410	1,224	1,236	1,197	1,104	810	1,176	1,586
Imports	-	-	-	-	832	832	832	832	1,664	1,664	1,664
Sub-total electricity	5,117	5,428	5,665	5,783	6,543	6,903	7,283	7,683	8,106	8,547	9,010
Petroleum ("000" tones)											
LPG	53	62	72	83	97	113	127	143	162	182	205
Premium gasoline	262	298	339	386	439	499	524	550	577	605	635
Regular gasoline	139					-					-
Kerosene	382	398	414	430	448	466	487	508	530	554	578
Jet fuel	347	371	396	423	451	482	513	546	581	618	658
Gas/diesel	656	687	720	755	791	829	870	913	958	1,005	1,055
Fuel oil	603	615	628	641	654	668	688	709	730	752	778
Sub-total petroleum	2,442	2,431	2,569	2,718	2,880	3,057	3,208	3,368	3,537	3,716	3,909

12.2.2.2 Electricity

This report uses the projections of annual energy needs prepared by the Kenya Power and Lighting Company (KPLC) for 2003 up to year 2020. The projections are based on the Least Cost Development Plan that takes into account four major sources of electricity, namely, hydro, thermal oil, geothermal and the import component of future electricity. The power requirements are projected to grow from 5118 GWh in 2005 to 9010 GWh in 2015. This will require adding capacity from 1125MW in 2005 to 1714MW in 2015. The proposed importation of electricity from southern African countries is important because of high domestic costs of electricity at US cents 9 per unit compared with Southern African countries at US Cents 2 per unit.

12.2.2.3 Petroleum products

The Final Report of the study on Kenya Petroleum Refinery Limited for the Ministry of Energy (May 2004) has projected petroleum requirements. The petroleum demand has been projected for the years 2005, 2010, 2015 and 2020. The annual projections have been made using the growth computed between the four intervals.

12.3 Interventions and Resource Requirements

The major goal of the Government is to have sustainable supply of affordable and appropriate energy to spur socioeconomic development in Kenyan. The proposed intervention measures and the resource requirements aims at ensuring adequate supply of energy and by implication, attainment of MDG goals and targets in view of the dominant role that energy plays in facilitating income generation for employment and poverty reduction, and women empowerment in view of the fact that they are the ones responsible for procurement and use of energy for household needs. The proposed interventions are based on the major energy types, namely, biomass, petroleum products, electricity, and other renewable energy types. In particular, development of sustainable biomass energy supply will generate employment and income, and lead to increased forest cover. In case of biomass, the interventions are meant to wipe out the anticipated annual deficit, which were projected to increase from 20 million tonnes per annum in base year 2000 to 31 million tonnes in 2020 if no policy action is taken.

12.3.1 Biomass Energy Interventions

12.3.1.1 Fuel wood Supply Strategies

initiate commercialization of fuel wood in farms: Approximately 500,000 ha can be initiated by development of woodlots in private farms where land is idle and/or unsuitable for agriculture. It is estimated that a possible 504,000ha of plantations can be mobilized with a yield of 14.29 tonnes/ha/year, with total annual supply of an impressive 7,202,160 tonnes/year. Models of such plantations show a high internal rate of return (IRR) conservatively estimated at 45%.

establishment of 25,000ha of fuel wood: This should be developed in appropriate areas of gazetted forest areas where biodiversity and water catchment aspects will not be compromised. The aim is to have reliable areas to provide fuel wood to neighbouring households and industries. Implementation of this strategy would result into an extra supply of 803,500 tonnes of fuel wood annually. The key ministries to initiate and guide the strategy are Energy and Environment and Natural Resources.

better management scheme of forests: Adopt better management of the existing gazetted indigenous forests and plantations to improve their yields significantly. This

supply could sustainably yield 350,000 tonnes annually from logging waste and small wood extraction from the indigenous vegetation.

resource assessment of rangelands to indicate sustainable uptake: This should be undertaken followed by efficient management of rangelands through enrichment planting and controlled harvesting for charcoal. Resources required would be formation of viable groups of charcoal makers who can then be licensed to exploit charcoal at a fee, proceeds from which will be applied to sustainable management of vegetation including community mobilization, supervision, replanting and education.

12.3.1.2 Charcoal Conservation Strategies

improvement of efficiency of earth kilns: Efficiency to be increased from the current 15% to 20% through intensive training of charcoal makers by mobile artisans. Most charcoal in Kenya is produced using earth kilns, which, at best, have recovery efficiency of 15%. An efficiency of 20% would translate to reduction in wood requirement from 13 million to 9.7 million cubic metres, an impressive 25% reduction of feedstock. This programme can efficiently be undertaken through training charcoal burners in improvement of charcoal burning efficiency.

increased use of improved cookstoves: Necessary activities should be undertaken to increase the percentage of households using improved cook stoves from 47% to 80% in order to reduce charcoal demand even further, a process that would save 504,000 tonnes.

increase percentage of people using kuni mbili stoves: The percentage of rural people using the improved Kuni Mbili and other improved firewood stoves to be increased from 4% to 15%, a strategy that will result into a saving of about 7.7 million tonnes of wood. The use of Kuni Mbili is not well known by most people. The Ministry of Energy and home economics department of the Ministry of Agriculture should undertake information dissemination and marketing for mass adoption in rural areas.

sustainable charcoal supply: Despite charcoal having a big market, most of the charcoal trade remains informal, illegal and based on supplies from non-sustainable sources, mainly rangelands. Efforts should be made to streamline and legalize the charcoal industry. Towards this end, the government has, in Sessional Paper No. 4 of 2004 on Energy, put in place a policy commitment of licensing charcoal production to encourage its commercial production in a sustainable manner.

adoption of energy conservation measures by households and institutions: These measures can be undertaken using effective dissemination of information through institutions with extension networks such as Ministry of Agriculture, NGOs, CBOs, and other media such as radio and newspapers.

12.3.2 Interventions on Petroleum Products

12.3.2.1 Promotion of petroleum exploration

Strategies should be developed to promote more intensive oil exploration in view of the fact that most oil companies are more interested in areas of high oil potential e.g. Sudan, Angola and Mozambique.

12.3.2.2 Branding of kerosene conspicuously

This should be done to minimize or eliminate adulteration of other petroleum products. Kerosene is currently bio-coded and there are already penalties for such malpractices, but detecting the presence of kerosene in other oil products is difficult for the common person because it is colourless.

12.3.2.3 Gas valves and regulators be standardized

This will enable clients to buy gas from any dealer. The different LPG regulators used by the various companies is one of the constraints for wider LPG use.

12.3.2.4 Retail LPG in smaller quantities for wider use

LPG is currently marketed in definite quantities such as 3 kg, 6 kg and 12.5 kg; the policy of government is to standardize the cylinders for local use at 3 kg, 6 kg and 13 kg. The retailing system does not allow other quantities such as 1 kg or 4 kg, thus creating a major marketing barrier.

12.3.2.5 Establish better storage and distribution system of kerosene and LPG

Currently, the distribution system of kerosene and LPG is expensive and leads to unreasonably high price mark-up for the commodities. For example, mark-ups of up to 300% in kerosene prices have been reported in remote parts of the country.

12.3.2.6 Reduce taxes on LPG appliances

Zero-rating on all LPG appliances including LPG steel would help reduce their price and increase use of LPG, thus reducing reliance on biomass.

12.3.3 Interventions on Electricity

12.3.3.1 Promote private electricity production and sale

This strategy will remove some of the constraints in development of mini-hydros or other alternative sources of energy in some remote areas of country not covered by the national grid.

12.3.3.2 Re-strategize rural electrification programme (REP)

New strategies in management of REP should be put in place to ensure that most of the levy funds is used on the network expansion or extension and that the Government target of connecting 150,000 households per annum be realized.

Towards this end, Sessional Paper No. 4 of 2004 has recommended the creation of the Rural Electrification Authority (REA) to effectively plan for and execute rural electrification programmes.

12.3.3.3 Importation of cheaper electricity

Efforts to acquire cheaper electricity from other countries, particularly Southern African countries, should be intensified.

12.3.3.4 Protect and manage water catchments more aggressively

A master plan of major catchments and their sustainable management is important in view of importance of hydropower. Although most catchments fall under the jurisdiction of the Ministry of Agriculture (MoA), the Ministry of Environment and Natural Resources (MENR) and Kenya Wildlife Service (KWS), their promotion for power generation should be initiated and guided by Ministry of Energy (MoE) and Kenya Electricity Generating Company (KenGen). An inter-ministerial team should thus be formed and a lead agency identified.

12.3.3.5 Promotion of solar energy

Promote photovoltaic panels (PVs) and solar heaters for institutions or groups of households, as they would be cheaper and more practical than electricity in specific areas of the country. This would include removal of constraints such as lack of technical backups by trained artisans and information dissemination. The equipment dealers do not have sufficient staff to undertake installation and maintenance and many systems are installed and maintained by untrained technicians.

12.3.3.6 Promote mini-hydros

Promotion and development of minihydros should be undertaken both in high and low potential areas in view of the current potential especially in communities with no access to the national grid (some estimates put mini-hydros potential at 3000MW). There are other people who have no access to electricity although high power lines pass through their areas.

12.3.3.7 Promote wider use of wind energy

Despite high potential of wind energy in Kenya, areas of installation have not been well identified and technical backup is lacking. Promotion includes proper survey and training of backup artisans and digitization of wind power sites and their potential in GIS format for quick decision making.

12.3.4 Intervention on Biogas

12.3.4.1 Increase biogas use

Promote use of biogas where possible through research and training of technicians who would in turn train others to sustainably undertake installation and maintenance of new units. Wide adoption would lower the capital price, which is currently about KShs 35,000 per small unit.

12.3.5 Institution Strengthening to Promote Sustainable Energy Supply

12.3.5.1 Coordination of different authorities on energy

The Ministry of Energy should enter into a memorandum of understanding with the ministries of Environment and Natural Resources, Agriculture, and Local Authority on matters of biomass energy management and utilization.

12.3.5.2 Energy research and development

The Ministry of Energy should formulate a national strategy for coordinating energy research to ensure timely and relevant interventions that will lead to provision of affordable energy to households. Currently, such research is either lacking or quite isolated and with very little funding.

12.4 Investment Programmes

The Ministry of Energy should continue providing policy guidance to all players especially in the commercial energy sector, and undertake routine monitoring to facilitate strategic planning, and recruiting strategic partners in order to enhance cost-effective supply of sustainable energy resources. Currently, a number of issues affecting energy production and use are under the mandate of several quasi-government organizations. The main role of the Ministry of Energy will be coordination of activities of all stakeholders. The investment programme therefore includes capacity building of the ministry staff at district levels.

Table 12.3 indicates summary investment to the year 2015, while details are given in Table 12.4. Investment on biomass is based on earlier estimates made in 2002 by the MOE (Kamfor Report) but modified to reflect requirements regardless of the budgetary provisions of the key ministries. Other costs have similarly been estimated based on requirements and assumes some capacity building to effectively address energy issues.

Data on petroleum investment is based on the information from the MOE and oil industry. Data on electricity is based on discussions with KenGen, KPLC, and report titled "The Least Cost Power Development Plan Update 2005-2025 by the Kenya Power and Lighting". Other energy types are based on MOE information and the ITDG especially on the costing of minihydro. Total energy investment amounts to Ksh 771,586.8 million over the 10-year period.

Table 12.3: Summary cost of investment on energy requirements for MDGs, 2005-2015

Type of Energy	Ksh "000,000"	Percentage share
Administrative Strategies	85,561.4	11.1
Fuel wood Supply Strategies	25,221.2	3.3
Charcoal Conservation Strategies	15,655.9	2.0
Petroleum Products	179,466.8	23.3
Electricity	239,079.8	31.0
New And Renewable Energy	226,601.6	29.4
Total	**771,586.8**	**100.0**

Figure12.3: Cost of Investment on Energy 2005-2015

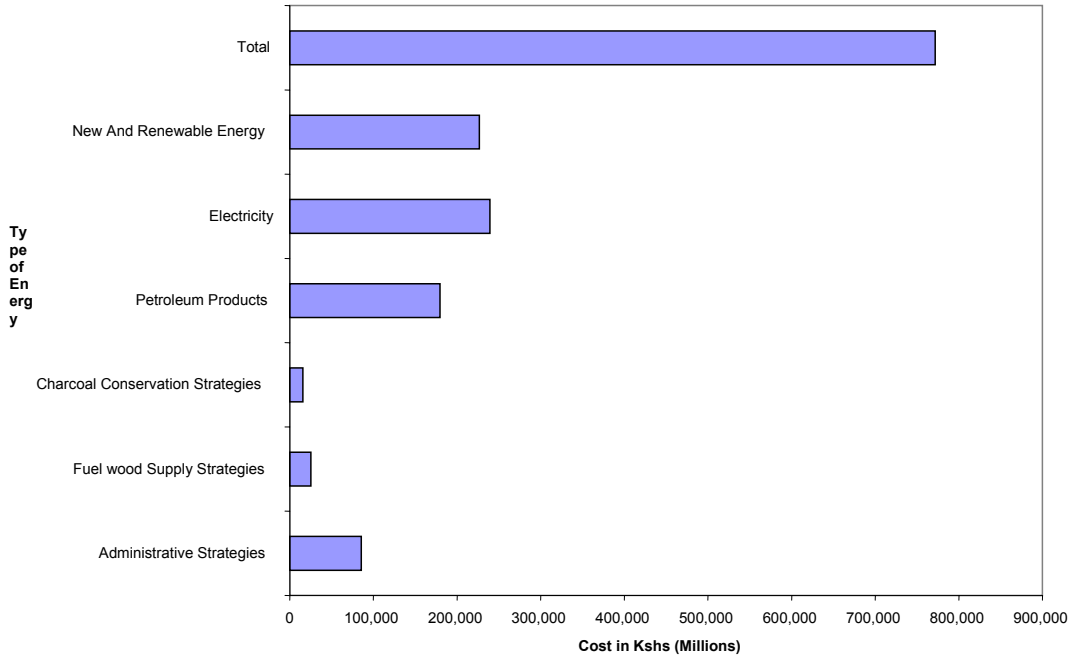


Table 12.4: Required investment for various energy types, 2005-2015

	2005	2010	2015	Total	%
1. ADMINISTRATIVE STRATEGIES					
1.1 Energy Development Fund	45.0	225.0	225.0	495.0	
1.2 Energy monitoring services	75.0	375.0	375.0	825.0	
1.3 District energy monitoring & database	1,864.2	9,320.9	9,320.9	20,506.0	
1.4 District capacity building	4,621.0	23,105.0	23,105.0	50,831.0	
1.5 Energy strategies for gender	1,100.4	5,502.0	5,502.0	12,104.4	
1.6 Regional information on energy data	40.9	204.5	204.5	450.0	
1.7 Establish regional energy network	31.8	159.1	159.1	350.0	
Sub-Total				85,561.4	11
2. FUELWOOD SUPPLY STRATEGIES					
2.1 Management and planting plan of GZF	345.0	1,725.0	1,725.0	3,795.0	
2.2 Fuelwood in gazetted forests (1400 ha/yr)	250.0	1,250.0	-	1,500.0	
2.3 Master Plan for farm woodlots	165.0	164.0	-	329.0	
2.4 Farm Fuelwood Commerce.(28000ha/yr)	896.0	5,198.5	6,634.8	12,729.3	
2.5 Natural vegetation management	345.0	2,001.7	2,554.7	4,901.3	
2.6 Financial incentives on biomass prom	138.0	800.7	1,021.9	1,960.5	
2.7 Fuelwood for school feeding programmes	0.5	2.7	2.7	6.0	
Sub-Total				25,221.2	3
3. CHARCOAL CONSERVATION STRATEGIES					
3.1 Research in Kiln/Charcoal Recovery	132.0	765.9	977.4	1,875.3	
3.2 Stoves Market Surveys and Monitoring	60.0	348.1	444.3	852.4	
3.3 Stoves Promotion and Education	69.0	400.3	510.9	980.3	
3.4 Sustainable Supply Devel. Studies	40.0	232.1	296.2	568.3	
3.5 Market Organization & Financial Support	250.0	1,450.5	1,851.2	3,551.7	
3.6 District level charcoal education and training	711.6	3,558.2	3,558.2	7,828.0	
Sub-Total				15,655.9	2
4 PETROLEUM PRODUCTS					
LPG					
4.1 Household use from 7.8%to50%	8,011.6	40,057.9	40,057.9	88,127.4	
4.2 Increased cottage industry use	606.9	3,034.7	3,034.7	6,676.3	
4.3 Use by 20% of remote schools	8.4	42.1	42.1	92.7	
4.4 Cooking gas for remote schools	0.9	4.6	4.6	10.2	
4.5 Female headed hse support	6,104.1	30,520.3	30,520.3	67,144.7	
Gas Diesel					
4.6 Supply gas/diesel for irrigation	1,548.0	7,739.8	7,739.8	17,027.5	

4.7 Supply fuel oil for grain driers	12.4	61.8	61.8	136.0	
Kerosene					
4.8 Kerosene for cottage industry	22.9	114.5	114.5	252.0	
Subtotal petroleum				179,466.8	23
5 ELECTRICITY					
5.1 Water Catchment master plan	150.0	80.0		230.0	
5.2 Water Catchment development	226.0	1,130.1	1,130.1	2,486.2	
5.3 Rural connections 4-40%	10,130.4	50,652.0	50,652.0	111,434.4	
5.4 Cottage industry	5,909.1	29,545.4	29,545.4	64,999.9	
5.5Irrigation power	2,822.4	14,112.0	14,112.0	31,046.4	
5.6 Schools support	872.7	4,363.6	4,363.6	9,600.0	
5.7 Hospitals& health centres	436.4	2,181.8	2,181.8	4,800.0	
5.8 Kerosene substitution	10.5	52.7	52.7	115.9	
5.9 Street lighting for slums	479.5	2,397.7	2,397.7	5,275.0	
5.10 Backgenerators for hospitals	3.3	16.4	16.4	36.0	
5.11 Electricity importation infrastructure	823.3	4,116.4	4,116.4	9,056.0	
Sub-Total				239,079.8	31
NEW AND RENEWABLE ENERGY					
6. MINI HYDRO					
6.1 Mini hydro develop and installation	12,502.0	56,259.0	56,259.0	125,020.0	
7. WIND ENERGY					
7.1 Wind energy promotion	138.0	800.7	1,021.9	1,960.5	
7.2 Research & Dev. /Wind	9.5	55.1	70.3	135.0	
7.3 Wind energy development	6,400.0	37,132.2	47,391.2	90,923.4	
8. SOLAR ENERGY					
8.1 Solar energy training	69.0	488.5	982.5	1,540.0	
8.2 Solar energy development	200.0	1,160.4	1,481.0	2,841.4	
9. BIOGAS					
9.1 Biogas training	34.5	200.2	255.5	490.1	
9.2 Biogas development	50.0	290.1	370.2	710.3	
10. ENERGY EDUCATION					
10.1 Efficient use of biomass in health sector	3.6	18.2	18.2	40.0	
10.2 Energy Audit and Education	207.0	1,201.0	1,532.8	2,940.8	
Sub-Total 6-0 renewables				226,601.6	29
GRAND TOTAL				771,586.8	100

The energy needs for MDG One on eradication of poverty and hunger includes increase of households with electricity (15% to 75%), use of LPG from 7.8% to 50%, support to 30% of rural households with gas/diesel and power for irrigation as well some fuel oil provision for grain drying. The interventions to support Universal Primary Education include fuel wood for school feeding programmes, and provision of off-grid electricity based on wind, solar and minihydros particularly in the remote schools in ASALs. The interventions on gender include targeting female-headed households in provision of gas appliances, improved cook stoves, support of women groups, and empowerment to own tree resources as well as income generation through sale of seedlings.

The promotion of health requires provision of decentralized electricity based on wind, solar and minihydros for health facilities without access to electricity, generator backups, and training on efficient use of biomass to prevent respiratory diseases. Support to household energy needs also greatly contributes to maternal health. If women can be retained in schools longer, they become better mothers, and there are therefore strong, long-term synergies between energy support to school programmes, maternal welfare, and childhood indicators (e.g. child mortality).

The nexus between energy and environmental sustainability is supported mainly through provision of cleaner energy to households (and hence save forests and other endangered vegetation), sustainable management of water catchments (the water towers of the country), provision of street lights to slum dwellers, and giving priority to slum dwellers in selecting candidate households for cleaner energy provision. There is also room for global partnerships in the energy sector, mainly for regional energy networks, electricity connection to other sources of cheaper electricity in the region, exchange of information and data on various aspects of energy, and in oil exploration.

12.5 Conclusion and Recommendations

The model presented for the MDGs is not adequate for analysing energy requirements as it is not responsive to key variables in assessing energy needs. It is therefore recommended that a model capturing all the major energy types, biomass, electricity and petroleum products be developed urgently for local use and applied for future planning.

Energy data is scattered and investors may not have easily available information such as wind regime in various parts of the country and specific sites of potential mini-hydro development. Most of the metrology data deal mainly with rainfall and temperatures. There is a need to digitise most of the energy data in GIS format for quick retrieval.

There is limited collection and maintenance of data at district level and most planning is top-bottom, hence the urgent need for capacity building at district level to respond to various challenges of supply of appropriate and affordable energy. It is currently very difficult to analyze district energy requirements for transport, commerce and industry.

The achievement of the MDG on poverty reduction can reduce reliance on environmentally destructive practices. In addition, the provision of adequate, appropriate, and affordable energy will be necessary for any activity geared towards poverty reduction. Energy is a cross-sectoral infrastructure affecting all aspects of development. There is therefore urgent need to implement the strategies outlined in this chapter.

CHAPTER 13

CREATING AN ENABLING ENVIRONMENT FOR THE ACHIEVEMENT OF THE MILLENNIUM DEVELOPMENT GOALS

13.1 Introduction

This chapter deals with thematic areas that did not form part of the needs assessment studies under the MDG project, but are important and constitute the framework without which the achievement of the Millennium Development Goals will not be possible. They are necessary in the process of setting an enabling environment that will allow the realization of the goals. Broadly, they include infrastructure, service delivery mechanisms and governance (especially public expenditure management), science and technology, trade and industry, the international trade and aid environment, and security. This chapter deals with infrastructure and the international trade system. Issues of governance and service delivery mechanisms will be the subject matter of the next chapter.

13.2 Infrastructure

Lack of adequate infrastructure services is one of the problems that hinder the reduction of poverty in the developing world and by extension hinders the achievement of the other MDGs.

In Kenya, the infrastructure sector accounts for approximately 10% of the GDP and employed 183,000 workers in 2002, with over KShs 51.4 billion in wage payments. The ERS recognizes the importance of infrastructure development and lays emphasis on rehabilitation and extension of the existing systems to foster development. Physical infrastructure is an important prerequisite in creating and supporting a business environment that facilitates private sector investment, growth and job creation. The challenge in Kenya is the dilapidated nature of the road network, inadequate and dilapidated railway network, unreliable supply and high cost of electricity, poor telecommunications, neglect of information technology, and inadequate and poor quality of water supply and sanitation systems.

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13.2.1 Road Transport

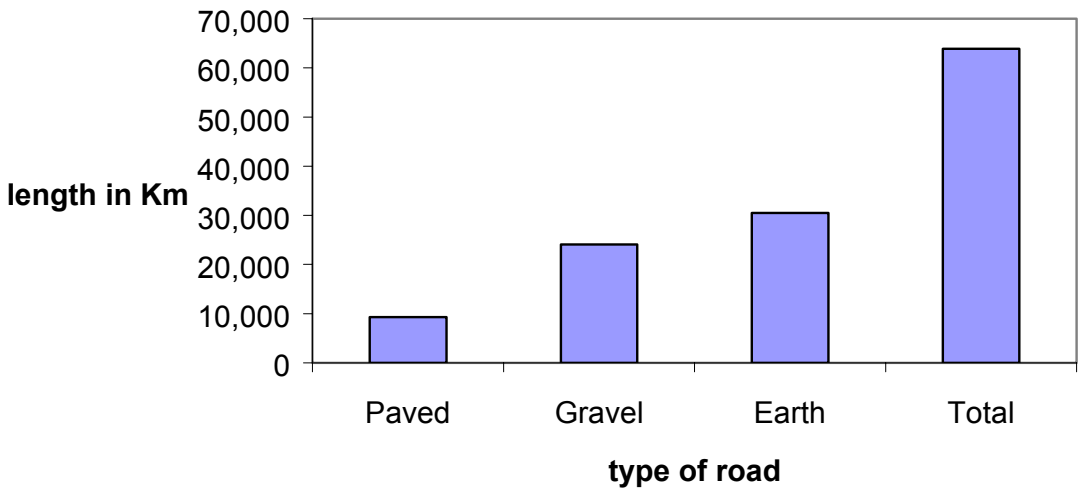
Kenya has a large road network of about 195,000 km long, about 6% of which is paved. A significant part of the network has fallen into disrepair and neglect during the past decade. The government is currently carrying out an inventory and survey of conditions of the classified roads. Preliminary data show that about 43% of the classified roads network is in poor condition. Table 13.1 summarizes the length of major road network in Kenya.

Table 13.1: Length of road network in Kenya (km)

	Paved	Gravel	Earth	Total
Classified Roads	9,337	24,050	30,503	63,890
Urban Roads	2,491	12,937	0	15,428
County/Council	7	116,254	0	116,261
Total	**11,835**	**153,241**	**30,503**	**195,579**

Source: Project Appraisal Document, Northern Corridors Transport Improvement Project, World Bank, 2004.

Figure 13.1: Length of Classified Roads



13.2.1.1 Maintenance needs

Funding for the maintenance of classified road network has been through the Road Maintenance Levy Fund (RMFL) and Roads 2000 programme, which has been inadequate. About KShs 9.4 billion is required annually (most of it from RMFL) to finance the maintenance of the 57% of the classified network while KShs 45 billion is required to rehabilitate the 43% of the classified network that is in poor state. The poor state of access roads to tourist potential areas has resulted to astronomical vehicle operating costs, loss of time, and passenger discomfort. About 150,000 km

of road would require upgrading or reconstruction annually until the entire network is in a maintainable condition.

13.2.1.2 Capital investment needs

The ERS estimates that about KShs 19 billion is required to reduce the share of classified roads in poor condition from 43% to 20%. It lists other projects worth about KShs 81 billion as priority projects to be carried out during the 2003-2007 period. Over the three-year MTEF period 2005/06 to 2007/08, the Government plans to undertake road construction and rehabilitation worth about KShs 20 billion per year. This is equivalent to KShs 220 billion over the period 2005-2015, which is a conservative estimate based on current budget constraints. Additional funding would be desirable to upgrade heavily trafficked unpaved roads. It is very unlikely that the Government can provide funding of this magnitude within the time required. There will therefore be a need to explore other sources of funding.

Table 13.2: Priority capital requirements in road sector (2003-2007 period)

Improvement	(KShs million)
Construction and rehabilitation of the road network	19,200
Rehabilitation and upgrading of key road links	10,990
Rehabilitation of rural access roads (Roads 2000 programme)	10,802
Concessioning of the Mombassa-Malaba Highway	15,003
Development of roads under East African Roads Network Programme	11,505
Rehabilitation of roads in national parks	5,506
Improving roads in ASAL areas	3,203
Construction of Northern and Southern bypasses in Nairobi and Mombassa	4,803
Total	**81,012**

Source: ERS March 2004

The options available to government besides external funding is the use of private sector finance, serviced either directly through tolls or through an increased fuel levy over and above what is required to cover maintenance expenditure. Long-term performance based rehabilitation and maintenance contracts can be funded through an agreed schedule of annual payments, or on the basis of shadow tolls. Private sector capital funding may appear expensive, but it can be viable on heavily trafficked roads.

Given the shortfalls in overall funding, Kenya could prioritise its use of resources, and make better use of existing funds. A carefully thought-out road strategy is needed; this should include proposals to better leverage and attract funding from donors. In addition, ways to involve the private sector to a greater degree – and in a manner that enhances incentives for good performance – are needed. If done appropriately, this would enhance efficiency, as well as increase funding for the sector.

Other measures the government is taking include the following:

(i) Updating the roads design manual to include the latest technology in both design and construction. This can be applied in, for example, the recently proposed concrete pavement construction, which is more durable and less costly to maintain;
(ii) Enhancing cost-effective designs for roads and other civil engineering structures;
(iii) Enhancing quality control during construction, maintenance and rehabilitation of all works;
(iv) General reform for the roads sector: Crucial sections of the roads department involved in road construction will be headed by competent directors for better delivery of services.

13.2.2 Rail Transport

The problems affecting rail service include outmoded technology as reflected in aged locomotives, wagons and equipment as well as poor signalling and telecommunication systems. The government strategy for addressing problems facing rail system in Kenya is through private sector participation in railways. It is estimated that between 2004 and 2007, an estimated that KShs 18 billion will be needed to enable a business and traffic throughput of 5 million tonnes per annum. The investment cost will cover signalling and telecommunication, Kisumu line upgrading, Thika-Nanyuki branch line relaying and Nairobi-Mombasa mainline spot rehabilitation, locomotives, rolling stock, and plant and equipment. The other strategy government is undertaking is divesting from Gulf Services on Lake Victoria. The improvement of the rail system will enable Kenya Railways to regain 50% of the share of the Mombasa-Nairobi-Malaba traffic and lead to less damage to the road network.

13.2.3 Air Transport

Air transport is the main transport mode for tourists, high-value exports and imports and perishable goods. The government has in the last few years undertaken reforms aimed at improving capacity and efficiency of the sub-sector such as liberalization, privatisation of Kenya Airways, establishment of Kenya Civil Aviation Authority, and establishment of Kenya Airports Authority. Even with these reforms, air services are still not efficient and the investment plans for the sub-sector include upgrading Kisumu, Malindi, Wilson and other tourism airports; modernizing the air traffic management system under Phase I (including accident investigation) and Global Navigation satellite system; privatisation of the commercial and non-regulatory services at the airports and exploring the possibility of private sector participation in building capacity for passenger terminal facilities. The provision of these services is estimated to cost KShs 1.7 billion annually.

13.2.3 Maritime and Inland Waterways

Maritime transport still remains the cheapest mode of transporting heavy and bulky goods, and strengthening this system would contribute significantly to the economic development of the country. Mombasa port is the principal seaport in Kenya. The port also serves several other hinterland countries. The performance of the port at 10 million tonnes in 2002 is still below its capacity of 22 million tonnes. Reforms, aimed at computerizing key operations, have been undertaken in the recent past to improve its performance. However, further reforms are the envisaged conversion of the port of Mombasa into a landlord port; enhancement of container handling capacity; integration of information technology network between Kenya Ports Authority, Kenya Revenue Authority, Kenya Railways and other port users; dredging of the port; construction of a new access road across Kipevu Bridge; establishment of a ship open registry and a Maritime Regulatory Authority to de-link seafaring administration activities from the Kenya Ports Authority's core business; enhancement of maritime safety and security development of a Maritime Search and Rescue Centre at Mombasa; and development of Cruise Ship facilities. A total of KShs 3 billion will be required annually for this sub-sector to supplement envisaged resources from the private sector players.

13.2.4 Telecommunications

The expansion of the telecommunications sector is one of the necessary conditions for accelerating growth in other productive sectors of the economy and thus leads to the achievement of the MDGs. The poor performance of the fixed-line telecom sector has been due to inefficiency and monopolistic structure in the sector. The government has taken steps to end the monopoly by fully liberalising the sector and allowed other operators to provide public payphone services and inter-corporate data exchange. As a result, tele-density has drastically improved. The subscriber base for the current two mobile phone operators stands at over 3 million against a potential demand of 9.4 million. A third mobile operator has already been licensed. The fixed lines stand at 4 lines per 100 people in urban areas and 0.16 lines per 100 people in rural areas. The Internet backbone is being liberalized through opening competition to Jambonet owned by Telkom, which has been the only Internet gateway. Currently there 80 licensed Internet service providers and about 1.3 million users.

The performance of information and communication has drastically improved in terms of access to reliable information and communication services as a result of liberalization of the sector. The licensing of private broadcasters has expanded the democratic space by facilitating the freedom of expression through community radio stations and variety of national private broadcasters. The print media has also grown rapidly. However, the information and communication is still faced with various challenges which include delayed finalization of an ICT policy; high cost of airtime for use of mobile services; use of outdated and dilapidated equipment and facilities

under public establishment; ever changing technology; and high investment technology among others.

The ICT industry in particular is hampered by lack of skills, low access to telecommunications and financial services, and inadequate legislative framework. The interventions being implemented in this area include the development of the ICT infrastructure to improve access to information and communication, development of a policy framework on ICT and films, and standardization of training and education. The e-government initiative will also entail building the government information infrastructure, implementing the Government Information Technology Investment Management (GITIM) framework, and establishing e-government services. A total of KShs 8 billion is required per year to implement priority projects in the sector.

13.2.5 Meteorological Services

The meteorological services are constrained by the slow adoption to technology to give accurate information for planning and forecasting, especially the early warning systems. Programmes for improvement are thus being directed at weather observation, analysis, forecasting and dissemination. The enhancement of the drought monitoring systems and weather related disasters are of paramount importance to the vulnerable groups and areas. The specific programmes include the rehabilitation of weather stations, and installation of modern equipment to monitor the weather, pollution and early warning systems at an estimated annual cost of KShs 7 billion.

13.2.6 Other Physical Infrastructure

There are several other physical facilities, lack of which exposes people to natural hazards and disturbance of their livelihoods. Protection of land and property from erosion caused by sea and rivers, such as the Lamu Sea Wall ensures the stability of the road and buildings fronting the sea. A lot of arable land especially around Malindi is threatened by the sea and require protection. Creation and protection of beaches is important for breaking sea waves on the coastline, especially during natural hazards such as tsunami.

Populations living next to the sea use sea transport to supplement road transport. In this regard jetties facilitate easy safe access to coastal towns and neighbouring islands by fishermen, community members, civil servants and tourists. The construction of Malindi Jetty Ph. II, Mukowe Jetty in Lamu, Shimoni Jetty, Jetties on Lake Victoria, and Jetties on Lake Naivasha is estimated to cost KShs 1.7 billion.

13.3 Science and Technology

A nation's ability to solve problems and initiate and sustain economic growth partly depends on its capabilities in science, technology and innovation. Science and technology are linked to economic growth; scientific and technical capabilities determine the ability to provide clean water, good healthcare, adequate infrastructure and safe food. In order to achieve sustainable development, developing countries need to develop their own capabilities for science, technology and innovation.

The role of science, technology and innovation has been identified as crucial in achieving all the MDGs. On energy, it recognizes that over the long-term, the use of fossil fuels is unsustainable and environmentally unfriendly due to emissions that exacerbate the greenhouse effect. One promising solution for reducing these emissions is the development of small, environmentally benign power plants, units and systems. Development of hydrogen fuel cells and gas-fuelled micro-turbines and other renewable energy forms are opening up new opportunities for expanding the base for energy sources.

Science, technology and innovation policy needs to be oriented toward finding vaccines and cures for HIV/AIDS, malaria and tuberculosis. Science, technology and innovation could also be key in the management of freshwater resources, development of drought-tolerant crops using both conventional breeding methods and genetic engineering, and in enhancing national and international security. Other areas include natural disasters such as earthquakes, tsunamis, floods, locusts and droughts. The challenges that need to be addressed in this area include development of relevant policy and capacity building through education and training.

13.4 Trade and Industry

This sector accounts for over 20% of GDP and employs about 300,000 people in the formal sector and 3.7 million in the informal sector. In 2002, the sector accounted for over 43% of Kenya's total export earnings. The recurring trade deficit is an indication of the need to expand production and trade in goods and services. There is therefore need to put in place infrastructure, and appropriate trade policies to boost production and reduce the costs of doing business. The investments specified in various MDG goals and the enabling factors in this chapter will go a long way in making industry competitive.

Given the sector's key role in employment creation and poverty reduction, it is a major contributor to the achievement of the MDGs targets. The expansion of trade

and industry is mainly pegged on the stability of macroeconomic environment, promotion of export opportunities regionally and internationally, and reduction of trade malpractices.

The strategies that the government is implementing to provide incentives for the trade and industry sector to thrive include improvement of infrastructure base in the country, promoting an enabling macroeconomic policy framework, creating an enabling trade regulatory framework, development of the human resource, expanding the export base (through participation in trading blocks, diversification and value addition), facilitating availability of credit to small and medium-enterprises through strengthening of micro finance institutions, strengthening of anti-dumping laws, and development of a management information system and data bank for both the Joint Loans Board Scheme and trade-related information through Trade Monitoring, Information & Research.

BOX:13.1

Government has initiated appropriate measures to:

- Improve the investment environment by putting in place an Investment Code to create a one-stop Investment Authority;
- Expand and strengthen partnership with the private sector especially in negotiating trade protocols and other business-related issues;
- Identify suitable zones with basic infrastructure that will serve as basic incubators for small and micro enterprises;
- Develop an export development strategy that considers all sectors of export potential and review the existing export development incentive schemes;
- Review the Sessional Paper No. 2 of 1997 on Industrial Transformation to the year 2020 as a prerequisite for preparing a comprehensive Industrial Master Plan;
- Complete the Sessional Paper on micro and small enterprises with a focus on employment creation and poverty reduction; and
- Focus on garments or clothing manufacturing to take advantage of the AGOA market.

An estimated total investment of KShs 2 billion is required per annum to run the ongoing programmes and implement new ones.

13.5 Tourism

The performance of tourism has been constrained by the increased competition from other emerging tourist destinations in the region, insecurity, non-diversified tourism products and markets, declining standards in the hotel industry, poor and

inadequate infrastructure, and lately, escalation of global terrorism. However, the tourism sector continues to play an important role in the country's economic development in terms of its contribution to GDP, foreign exchange earnings and employment. The measures being put in place to revamp the sector include re-launching Kenya as a global tourism destination (KShs 1.2 billion per annum); diversifying and improving tourism products (KShs 150 million per annum), circuits and source markets; upgrading of the Tourist Police Unit; ensuring maintenance of standards; refurbishment of hotels and other accommodation facilities; involvement of local communities in tourism development; provision of skilled manpower (KShs 200 million per annum); promotion of domestic tourism; development of a tourism policy, tourism development plan, legislation and regulatory framework; and creation of a tourism information system. The cost of some of the activities will be supplemented by the private sector, while the public sector will spend up to KShs 5 billion per year to support them.

13.6 Summary of Costs for Selected Enablers

There are no comprehensive studies to determine the investment costs for the supporting sectors towards meeting the MDGs. However, indicative costs have been developed during the development of the IP-ERS and the MTEF budget process. It is estimated that the road sector requires at least KShs 45 billion to rehabilitate classified roads to maintainable standards. It is only after that state has been achieved that about KShs 9.4 billion may be sufficient for normal maintenance. Capital investments are estimated at least KShs 19 billion per annum. The rail transport requires KShs 18 billion to rehabilitate the system countrywide, while KShs 1.7 billion is required annually to rehabilitate airports and improve their security systems. The improvement and maintenance of maritime transport is estimated to cost Kshs 3 billion per annum. The construction and rehabilitation of jetties at the Kenyan coast and inland lakes is estimated to cost KShs 1.7 billion.

The expansion of the information and telecommunication services that includes e-government and other priority projects is estimated to cost KShs 8 billion annually while the improvement of the weather monitoring capabilities and early warning systems will cost KShs 7 billion per year. Trade, tourism and industry activities are likely to cost KShs 8.5 billion annually.

CHAPTER 14

THE MANAGEMENT OF PUBLIC AFFAIRS

14.1 Public Governance

The major issues concerning governance include (a) rural-urban divide facilitated by centralized governance and with a very hierarchical decentralization system; and (b) ethnic differences and marginalisation, where the major concerns are gender, children, and religion. The major political issue in Kenya concerns the finalization of the constitutional review process. The contentious issues in the review process lie in the relationship between the powers of the President and the Prime Minister, the Kadhi-courts, and most importantly devolution of power.

The reform measures should include urgent completion of the constitution review process (as it contains numerous instruments to fight corruption); amend The Public Officer Ethics Act, 2003, to provide that the public shall have access to the contents of the declaration of assets and liabilities of public officers; and make it a policy that serving public officers, against whom there is prima facie evidence of misconduct and other corruption, be suspended pending investigation and prosecution.

14.2 Enhancing Integrity and Accountability

The traditional instruments that contain sanctions against public officials for wrongdoing in the course of their official duties were the Code of Regulations for civil servants and the Public Service Commission Act. The instruments were first prepared during the colonial period, and are incomplete when it comes to issues of standards.

The Government enacted two major pieces of anti-corruption legislation: The Anti-Corruption and Economic Crimes Act, 2003 and the Public Officer Ethics Act, 2003. The first Act expands the definition of corruption and economic crime to include various forms of abuse of office, conflict of interest, misappropriation, theft and plunder of public resources. It also establishes an anti-corruption commission with investigative, prevention, public education and asset recovery functions.

The second Act legislates a mandatory code of conduct for all public officers, including members of Parliament, the Judiciary, Civil Service, Cooperative societies, Local Government and parastatals. The codes of conduct, which are legally enforceable, prohibit corruption, conflict of interest, ethnicity, and nepotism in the public service. Most popularly it provides for the declaration of assets and liabilities of public officers (including those of their spouses and dependent children), an

innovation although it doesn't provide for access to the information by the public. The Public Audit Act, 2003, has been enacted, while other instruments such as the Public Procurement and Disposal Bill, 2003, the Privatization Bill, 2004, and the Government Financial Management Bill, 2003 await debate and enactment. Another initiative that will facilitate this reform agenda is the creation of a department in President's office to deal specifically with the fight against corruption, headed by a Permanent Secretary reporting directly to the President.

14.3 Service Delivery

The quality of public service ethics in Kenya remains generally low. This is a reflection of poor public service ethics that obviously undermines efficient public service delivery and development in the country. Faced with the problem of poor service delivery and declining morale of the civil servants, the Government in 1999 announced a five-year comprehensive and integrated Public Sector Reform Programme, which would tackle the challenges facing, not only the civil service, but also the whole public sector. The objectives were mainly to improve the quality and timeliness of the delivery of public services; sharply focus Government financial and human resources on the efficient performance of clearly identified core functions and services and to divest from non-core functions and services; reduce the overlaps and duplications within and between Ministries; and improve planning, budgeting, monitoring, management and accounting systems so that resources are more sharply focused on priorities, accountability is clear, spending is transparent and public expenditure is more efficiently controlled.

The Government launched a "Strategy for Performance Improvement in the Public Service", in April 2002. The objective of this reform area is to introduce Results Oriented Management (ROM) in the public service with an aim of improving quality, efficiency and effectiveness of services and performance on a continuous basis. This involves undertaking service delivery surveys in ministries/departments; developing service delivery standards, benchmarks and charters; introducing annual work plans, and work improvement teams; reviewing staff performance appraisal; and introducing merit-based promotion and performance contracts in the public service.

The other aspects include establishment of work-plans in all service areas and the introduction of "a performance service contract" for senior executives and managers in order to hold them personally responsible for the performance of their ministries/departments or areas of responsibility. The Government is training staff to close the skill gaps caused mainly by poor succession management. There is also ongoing work to determine the right size of Government and to take the process of determining the core business of Government further.

Other measures have included the establishment control and management of the payroll, introduction of information technology in the public service, and decentralization. In an effort to control and arrest payroll fraud, the Government has developed the Integrated Payroll and Personnel Database (IPPD) system. The IPPD will be implemented in all ministries and Teachers Service Commission (TSC). There have also been measures to deepen decentralization. However, in Kenya, decentralization has been viewed as "administrative decentralization" i.e. de-concentration to regional or local offices (mainly districts) rather than devolution of powers and responsibilities from central government to local governments. The other arm of decentralization has been to increase the resource base of local authorities (through Local Authority Transfer Fund and as undertakers for the Kenya Roads Board), but leaving the institutional and legal setup largely intact.

14.4 Parliament and the Reform Agenda

Parliamentary oversight and control of the executive is one of the central pillars in a system of separation of powers, and this also applies to presidential systems where the executive is not rooted in parliament. The National Assembly in Kenyan for most of the nation's history was neither independent nor effective. However, by the end of 2000, the National Assembly had demonstrated independence, and by 2002, important strides had been made in making it a more effective institution. In 1999, Parliament passed legislation establishing the Parliamentary Service Commission, thus giving Parliament authority over its own budget and staffing, and over virtually all matters related to its management.

During the same period, there was evolution of a more effective committee system and a heavier investment in the institutional needs of the National Assembly itself. Prior to 1998, most of the work of the Kenyan Parliament, with the exception of the oversight work of the Public Accounts and Public Investments Committees, occurred in plenary. But changes to the Parliament's Standing Orders made in 1997 established departmental committees, and required that these committees review legislation. By 2001, the initiative for policy change had shifted to Parliament's committees. These Committees are playing an increasing role in instilling discipline in the management of public affairs, and have the capacity to prevent mismanagement of public funds before it happens and thus are useful in the fight against corruption. Parliament also passed a legislation that each Member of Parliament be given a constituency development fund to be used to support development projects in their areas. There are also plans to repeal Sections 58 and 59 of the Constitution (which give the president authority to prorogue Parliament).

14.5 Public Financial Management and Accounting Reform

The public financial management reform in Kenya includes the adoption of Medium-Term Expenditure Framework (MTEF), Accounting Reform, Audit Reform, and Procurement Reform.

The objective of accounting reform is to counter poor financial management and accounting and the lack of reliable and timely financial information. The reform measures include: introduction of a computerized Integrated Financial Management System (IFMS) to facilitate more accurate and timely accounting procedures throughout the Government; integration of district Treasuries in the design of IFMS where district treasuries function as sub-treasuries; and integration of the IFMIS and IPPD Systems for budgetary forecasting purposes.

As part of the audit reforms, the Offices of Auditor-General Corporations and Controller and Auditor General were merged in June 2002. The Audit Act was to establish the office of the Controller and Auditor-General and set out its functions, which exclude the current function of control and accountability of funds. This function will be transferred to the Treasury under the Financial Management and Accountability Act. The Internal Audit Department is being strengthened and appropriate training programmes and a suitable Scheme of Service for Auditors are being developed.

The objective of procurement reform is to introduce transparency into public procurement and contracting procedures. To achieve this objective, the Kenya Government has introduced new Public Procurement Regulations; established a Public Procurement Directorate (PPD) to oversee implementation of public procurement regulations; developed and implemented training programmes for public procurement officers; and included the private sector participation in the procurement committees/tender boards. The procurement function has been undermined by problems such as over-pricing, lack of competitive bidding and tendering, and weak compliance with procurement regulations.

14.6 Public Expenditure Management

Public Expenditure Management (PEM) refers to the processes and institutions for MTEF preparation, annual budgeting, budget execution and monitoring. The ERS listed five specific weaknesses in PEM: (i) significant variations between budgeted and actual expenditures; (ii) inadequate recording and tracking of donor-funded programmes; (iii) administrative classification rather than an economic one; (iv)

failure to comply with multi-year MTEF projections; and (v) poor budgetary control leading to pending bills.

However, some reform measures have been undertaken. The reforms that have been initiated include: (a) an economic classification of the budget is being developed; (b) Internal Audit is being extended from pre-audit to systems audit; (c) enactment of the Public Audit Act and the Government Financial Management Bill 2003, and placing before parliament the Public Procurement and Disposal Bill 2003; (d) the piloting of the Accounting Module of the IFMIS in selected ministries and local authorities; (e) the initiation of Public Expenditure Tracking Surveys (PETS) in several Ministries; and (f) suspension of procurement officers in 2003/04 to address institutionalized corruption in procurement.

The role of parliament in the budget process is clearly demarcated, but in practice the legislature has had little real authority to hold the executive accountable for financial mismanagement, wastage or fraud. Parliament lacks capacity for independent fiscal research or analysis. It does not have the time, information or skills needed to scrutinise and debate relevant budget issues. Secrecy legislation and regulations have been used to justify the non-disclosure of important and relevant budget information, especially in Government departments related with security.

14.7 The Impact of International Trade Environment on Kenya[6]

The first seven millennium development goals focus on outcomes, identifying standards of well being to be achieved by 2015 and concern both the nature of the lives individuals lead and the environment in which they live. Goal 8 focuses on relationships, identifying various aspects of the global partnership for development that should be forged to support the realization of these standards. The international trading system has profound impact on the wealth of countries engaged in trade and on the internal distribution of income depending on how external trade affects individual households. The cost of international trade restrictions includes the extra debt incurred that might have been unnecessary if Kenya was getting the full benefits of free trade. The links between poverty reduction and trade liberalization is mainly through factor markets and the distribution of productive assets. Trade theory is about identifying whose hand is in whose pocket and trade policy is about who should take it out. Trade policy should include the need for, and cost of, complementary policies to ease the adjustment strains e.g. infrastructure support (including telecommunications and functioning credit markets), development of market institutions, and measures to reduce transaction costs.

[6] This section is based on a paper titled "The Implications Of International Trade Restrictions On Kenya: A Preliminary Analysis", by John T. Mukui, prepared for UNDP, Nairobi, 2003

The World Trade Organization (WTO) agreement, signed in Marrakesh in 1995, defines the new international framework for trade and development strategies for the future. The major thrust of WTO is a worldwide free trade arrangement. The main means for accomplishing this task are the adoption of tariff bounds, the dismantling of non-tariff barriers (NTBs) in the near future, and a full coverage of all sectors and activities (including the agricultural, services and infrastructure sectors). This section focuses only on the probable effects of support to agriculture (through producer price support and export subsidies) and sanitary and phytosanitary (SPS) measures.

14.8 Restrictions on Trade in Agricultural Commodities

In the OECD countries, agriculture receives support of close to $1 billion per day or over $300 per capita. The most protected segments are agriculture (mainly grains, dairy, livestock and sugar) and textiles and apparel. The regions that protect more agriculture are the Quad countries (Canada, European Union, Japan and USA). A further issue concerning market access is the special agricultural safeguards. Safeguards are contingency restrictions on imports taken temporarily to deal with special circumstances such as a sudden surge in imports. Textiles and clothing are particularly affected by the use of anti-dumping duties and special safeguards. The measures appear to increase global production, forcing down world prices.

The trade-distorting support to agriculture in OECD countries is likely to affect Kenya through both restrictions on exports and low prices paid for food imports. Kenya's main food imports are wheat, followed by sugar, maize, rice, and fruits and vegetables. The main sources of wheat and maize are the OECD member countries, whose support to domestic agriculture has created problems for local producers after the liberalization of the agricultural sector in the early nineties. There are also restrictive quotas e.g. of sugar imports from Kenya, health and environmental standards, which have affected fish exports to EU, stringent packaging and labelling requirements, and non-trade restrictions (e.g. core labour standards).

The major export crops (tea and coffee) do not have a problem of accessing markets in developed countries, as over 70% of agricultural exports are to EU where applied tariffs and NTBs are low. The reduction in tariffs and the tariffication of non-tariff measures is most likely to be beneficial to Kenya's fish industry (SITC-034) and horticultural products (SITC 054-062). Most of the Kenya's export products have faced declining world prices, partly due to the operations of buyer-driven global commodity chains. The member countries of the European Union are the major importers of specified food items from Kenya that are likely to be affected by SPS measures. For example, UK is the major importer of beans, peas and lentils; while the major importers of pineapples are Italy, Germany, UK and Netherlands.

14.9 Sanitary and Phytosanitary Measures

Apart from tariff barriers, Kenya's exports to developed countries have been barred by instances of arbitrary imposition of Sanitary and Phytosanitary (SPS) measures e.g. ban on fish exports in 1999 and 2000, and the minimum residual pesticide requirement by EU on horticultural produce. The key objectives of the Agreement on SPS measures were to protect and improve the current human health, animal health, and phytosanitary situation of all WTO Member countries, and to protect Members from arbitrary or unjustifiable discrimination due to sanitary and phytosanitary standards. The agreement on SPS measures takes the form of inspection of products, permission to use certain additives, determination of maximum levels of pesticides and designation of disease (e.g. quarantine requirements).

CHAPTER 15

TOWARDS A REALISTIC MACROECONOMIC FRAMEWORK

15.1 Introduction

The report of the MDG National Needs Assessment provides a synthesis of the current situation in Kenya for each of the goals and comes up with the cost of attaining them. For Kenya to achieve the MDGs, it is estimated that there will be a need for annual expenditures in the economy to the tune of US$5,546.7 million, totalling to US$ 61,014.6 million over the period 2005-2015.

The Kenya Institute for Public Policy Research and Analysis (KIPPRA) has prepared comments on a number of issues that arise with respect to the estimated costs of achieving the MDGs. First, there is need to recognize current efforts that have an impact on the MDGs. These include the core poverty programmes (CPP) and other resource allocations within the budget that are relevant to MDGs. Secondly synergies exist between various targets (e.g. between investments in education and health). In addition, productivity that would have a bearing on the ability of the country to address MDG Goal 1 on poverty and hunger would benefit from synergistic effects of investments in health and education. The existence of positive externalities or synergies implies that adding up the individual costs could result in overestimation of the costs. The synergistic effects could be used to scale downwards the MDG cost currently given in the Needs Assessment.

Third, average unit costs have been used in the report principally to come up with total costs, hence excluding the effects of economies or diseconomies of scale. Average costs may also depend on certain parameters that do not remain constant overtime. Fourth, different institutional and policy environments entail different costs, which are methodologically challenging to capture in the costing exercise. Fifth, the estimated costs reflect requirements that if financed, without due consideration to attendant factors, could lead to macroeconomic instability.

Thus, the cost reflected under each MDG should be considered in the context of the foregoing comments.

Before analysing the feasible macroeconomic framework with respect to increased fiscal space, the KIPPRA report first establishes the costs that relate to MDGs and are already included in the Government fiscal framework. The analysts also addresses the link between MDG costs to the various potential sources of funding, namely, taxation, foreign aid, cost recovery, and public-private partnerships within a stable and realistic macroeconomic framework.

15.2 A Feasible Macroeconomic Framework for MDGs in Kenya

The starting point of the analysis should be whether sectoral interventions at the levels estimated in the Needs Assessment when spent through the budget framework would be destabilising to the macroeconomy. If found to be destabilising, the next question is how much can be absorbed given that the country has to have a sustained path towards the achievement of the MDGs. Kenya at the moment runs a budget that is slightly under US$4.5 billion. Were the estimated additional annual investments to be over and above this current spending, the MDGs needs assessment is then pointing at doubling the Government budget. It is imperative therefore to examine carefully the macroeconomic implication of the estimated vast level of spending required for realising the MDGs.

15.2.1 Macroeconomic Implications of Public Spending on Costs with Direct Effects on MDGs

It is possible to classify the estimated sectoral MDGs costs into two main categories. The first category is the costs with direct effects on MDGs and the second category that relates to the broad developmental goals and objectives. Over the last ten years or so, there has been a remarkable shift in Overseas Development Assistance (ODA) towards the social sectors. Therefore, it is reasonable to assume that the costs with direct effects on MDGs could be financed from external sources. Indeed, the Government can be encouraged, subject to absorption capacity and an expanded fiscal and monetary policy space, to work towards mobilising resources externally, in the form of grants and highly concessional loans to fund directly some of the MDGs-related activities falling under the social sectors.

The costs related to education, health, water and sanitation, HIV/AIDS prevention can be identified as having a direct effect on MDGs. For Kenya to achieve these goals, annual investments of US$1,220.30 million are required. However, the Government is executing core poverty programmes and other investment projects that can be directly linked to the above four MDGs. This therefore allows us to reduce the US$ 1,220.30 million estimates by their current budgetary provisions totalling to US$ 233 million. Hence the revised cost of executing programmes with direct effect on MDGs will be US$ 987.3 million.

To appreciate the macroeconomic implications of the MDGs-oriented expenditures, it is necessary to consider what impacts these expenditures (estimated at US$987.3 million annually) would have on macroeconomic stability. The results based on increased government expenditures through domestic resource mobilisation indicate the precariousness of the Kenyan economy, with a free fall in the exchange rate and rising inflation. Moreover, the ability of the

economy to register the implied GDP growth can be called into question. This implies that unless there are major changes in the economic structure and the social conditions, the social MDGs costs cannot be fully absorbed without creating instability in the economy. The MDGs related to education and health in particular have longer gestation period in terms of their positive contribution to the economy, compared to the more growth and development enabling interventions of MDGs.

If the required expenditures are financed from external sources, principally in the form of foreign grants, the economic outcomes in terms of GDP growth are not much different from those that emerge when the expenditures are met through domestic financing except that the exchange rate does not depreciate as rapidly as in the domestic financing scenario. While the same concern arises as to the ability of the economy to attain the projected growth, the macroeconomic outcomes are much more favourable. Even though the inflation profile remains fairly similar, there is a subdued depreciation of the exchange rate compared to the dramatic depreciation accompanying domestic financing. The external performance in the form of current account balance indicates deterioration in the first few years, while the fiscal position of the Government benefits from the accompanying growth in the economy. The ensuing high inflation seems to play a major part in undermining private consumption and investment, resulting in a cyclical decline in the economic performance in the period starting 2008.

The implications of the foregoing analysis suggest that unless there is a relaxation of the monetary policy space, the economy is not likely to be in a position to absorb the huge expenditures with direct impacts on the MDGs. In the same vein, an expanded fiscal space will also be necessary, allowing the fiscal deficit to breach the current targets, unless the financing directed at MDGs costs can be sourced externally in the form of grants. In effect, spending targeted directly at the MDGs will need to be accompanied with significant growth-enhancing investments, which allow the economy to sustain a long cycle of high growth rate. This is the question that is addressed in the next section.

15.2.2 The Macroeconomic Implications of Costs Related with Growth MDGs

The second category relates to the interventions that are related to the broader growth goals – the MDGs enabling interventions. These are the costs that relate to urban and rural development and some of the infrastructure investments. The users are in a position to finance some of these costs and therefore, the estimated costs need not be fully related to the Government budget. Indeed, growth realised as a result of positive impacts from the investments that have direct impacts on MDGs (the first category above) could help finance some of the growth-enabling interventions in support of the MDGs. What this means then, is that the macroeconomic implications of the costs related to broader growth goals are not treated in this analysis as if they are all funded by the government.

The country requires an estimated annual investment of US$4,057 million if it is to address the MDGs Goals 1 and 8 and also create the environment for sustaining the gains that address all the other MDGs. Like in the previous case we net out the Government development expenditures that are related to Core Poverty Projects and other investment projects totalling US$ 1,236.9. Consequently the amount of investments that is needed to address the MDG goals 1 and 8 can be revised to US$ 2,820.4 million.

In order to analyse the macroeconomic implications of the estimated costs, there is the question of what proportion of the expected expenditures can be catered for directly by the public sector and how much can be met by the households and the rest of the private sector. For instance, it might not be a realistic and sustainable option for the Government to consider free provision of fertiliser or organic manure, but it could address the issues that make fertiliser expensive in Kenya and at the same time provide some reasonable fertiliser subsidies almost in a means-testing approach.

With respect to the estimated expenditures associated with the enabling sectors such as roads, railways, maritime etc. there is the option that the private sector could play a key role in the financing mechanisms and as a result the Government contribution would be expected to be much lower.

The slum-upgrading programme, which relates to construction activities, is another area where the public-private partnership could play a key role. But in making these arguments, it should not be lost that Kenya's per capita incomes remain low and the private sector and households are not endowed sufficiently to provide the large injections identified in the MDGs needs assessment. The public sector will remain a major actor and investor in the foreseeable future.

Injecting into the economy the costs that directly affect growth gives high GDP growth rates above the baseline. Given that Kenya's long-term economic growth potential is currently estimated at 4.5%, the large injections could easily end up destabilising the economy. This would send inflation increasing over the years and the exchange rate spiralling downwards at a very high rate. However, since the economic activities remain vibrant, the budget deficits improve and the current account balance worsens initially although at a slow rate. It would take an average GDP growth rate of 12% for the economy to absorb the huge amounts of expenditure. The question we would ask at this point is the absorptive capacity of the economy to mobilize the resources and use them without destabilizing the economy.

The analysis to this point, leads to the next question, what then is the most feasible macroeconomic framework that would be supportive of the MDGs for Kenya?

15.2.3 Towards a Feasible Macroeconomic Framework for MDGs Achievements

The higher case scenario is informed by the limits that have been identified in the foregoing analysis, where it has been shown that implementing programmes aimed directly at MDGs will not only require significant amounts of money but that they will pose a challenge to the continued stability of the economy. The macroeconomic stability questions that emerged are summarised.

The first relates to the limited growth potential. Unless there is a rapid and sustained restructuring of the economy and the social conditions in the country, the long-term growth potential is currently estimated at only 4.5% per year. Unless the fiscal and monetary policy spaces are opened up significantly, the absorptive capacity of the economy would remain low and the country will not be in a position to withstand large injections required to achieve the MDGs without creating instabilities in the economy.

Secondly, MDGs interventions could lead to high inflation, especially for interventions towards MDGs Goals 2, 4, 5 and 6 due to increased government consumption.

Thirdly, there is unrealistic depreciation of the exchange rate. Deficit financing is likely to be characterized by rising inflation and significant depreciation of the exchange rate. Even when financing was assumed to come from external sources, depreciation associated with high inflation continued at a destabilising rate although lower than when the interventions are financed through domestic borrowing.

Finally, implementing the required interventions for MDGs could create unsustainable current account and budget deficits. They clearly point out that at a future point, high taxation would have to be considered.

Given the macroeconomic concerns that it raises, does it mean that the MDGs are just a dream? Clearly, the economic and social costs of the current situation that the MDGs are trying to eliminate cannot be compared to the macroeconomic instability issues that we have raised. Consequently, a macroeconomic framework is proposed, which could move the country in mid-sized steps towards achieving the MDGs targets. The macroeconomic framework proposes the need for the enlargement of the fiscal and monetary policy space to that optimal point where it does not negate the gains made through the various steps towards the MDGs Goals.

In order to move forward then, it is important to prioritise the MDGs interventions, slightly relax fiscal and monetary policy constraints, and assume a high inflow of foreign grants in financing the interventions required, especially in the initial years.

The proposed macroeconomic framework starts from the position that due to the limited capacity, only a proportion of the MDGs interventions can be undertaken. But for practical purposes, the macroeconomic framework further makes three provisions. First, in the first three years (2005-2007) the main focus will be on beefing up the human capacity e.g. personnel (hiring more teachers, health workers and agricultural extension officers), operations and maintenance (mainly for increased teaching materials, provision of anti-malarial drugs and treated mosquito nets, and ARVs), and only a fifth to the costs directed towards investments that will build capacity in the economy to absorb higher levels of MDGs interventions.

In the medium term, the structure of the public expenditures related to the MDGs will continuously be oriented more towards sustaining the additional human capital and accelerating the other MDG enabling-investments especially in infrastructure (the major trunk roads and rural access roads), energy, and the physical infrastructure for the education and health sectors. The proportion of MDGs costs will be restructured as follows: personnel (28%); operations and maintenance (39%) and development expenditures (33%).

The macroeconomic framework proposed here assumes a financing arrangement where the government finances the development expenditures, while the personnel and operations and maintenance costs that have direct impacts on the MDGs are to be taken care of through foreign grants.

Assuming the benchmark of the estimated costs given in the Needs Assessment, in the first year (2005), only 7% of costs can be absorbed. However, in spite of this

low absorption rate, if the resources could at this early stage be used to enhance institutional capacity important benefits could be realised. These early interventions would target the useful areas of quality and productivity.

From the second year onwards, capacity in the economy will begin to expand such that by 2006, 11% of the MDGs estimated costs could be absorbed. As the policy space is gradually opened up, it will be possible for the economy's capacity to be scaled up from its current long-term growth potential of 4.5% to at least 6%, and by 2012, it will be able to absorb up to 54% of the annual estimated intervention costs, over and above the normal budget operations.

15.3 Financing Framework of the MDGs Needs in Kenya

In order to derive the financing framework consistent with the macroeconomic framework described under the higher case scenario, it would be important to first revise the MDG costs to factor current government expenditure commitments that can directly be linked to the MDGs, considering the fact that all the Core Poverty Programmes and other investments projects are linked to a number of MDGs. Netting out the estimated costs (US $ 1,470.2 billion) out of the total MDG costs (US$ 5,546.7 billion) yields a new cost of US$ 4,076.5 billion annually. This is the cost that has been used to determine the maximum absorptive capacity of the economy under the feasible macroeconomic framework above.

The financing framework suggested above indicates that the bulk of MDG related expenditures would be financed mainly by donor support in the form of grants in the initial years. The government could finance these costs to a maximum of 22% in the first year but higher in later years.

15.4 Exploiting MDGs Synergies and Gains from Current ERS Investments

There are two main perspectives to exploiting synergies in MDGs: the two-way causality in the targets that creates a multiplier effect or positive externalities; and the change in baseline values for each target over time such that the required investments in some of the interventions may decline over time.

Public investment and strategic policy choices with regard to the optimal path to achieving MDGs should therefore be analyzed taking into account the dynamic mechanism and interactions between the targets. The correlation between literacy rates and child and maternal mortality means that increasing the literacy levels impacts on the achievement of the latter. Clearly it is not possible to map all the interactions in a model, or map them in a two-dimensional matrix, and it is even more difficult to capture them in a micro-simulation model when the direction of causality is not clear.

Education and health are major prerequisites for human resource development for any economy. All these goals including reducing poverty incidence by half by 2015 are interlinked, partly due to the social and private returns to human capital development. The interactions between, say, achievements in health and education, could be used to revise the MDGs costs in the two sectors.

15.5 Conclusion

The assessment of the cost requirements to meet MDGs is dogged with many methodological challenges. The key challenges relate to the need to take into account the inter-relationships between the MDGs targets and therefore the cost implications. Different delivery mechanisms and policy environments imply different cost structures. Over an extended period of time, structural changes are likely to take place in an economy. Projected resource requirements that do not take into account such possible changes are likely to be unrealistic. The KIPPRA analysis has analyzed the macroeconomic implications of the estimated costs and comes to a conclusion that all financing cannot be accommodated without serious macroeconomic instability. The feasible macroeconomic framework allows for the absorption of only about 7% of the estimated annual cost in 2005 but increasing over time.

The analysis report has also discussed some of the synergies that exist between the different targets. The implication is since resources are scarce and the economy cannot absorb all the MDG resources, there is need to think seriously as to how the synergies can be exploited in a strategic framework to meet the MDGs.

Despite the methodological challenges involved in the establishment of the MDGs resource requirements, the costing provides a framework through which the Millennium Development Goals can be aligned and integrated into the national planning and budgetary process. In this regard, it is advisable to prepare clear set targets (short-medium term) with the resource requirements in line with the MDGs for inclusion in the national budget process. The comprehensiveness of the intervention list for each sector of the MDGs and the indicative cost estimates provide useful data and information for long term planning of the economy. It is thus logical to expect in coming up with the next medium and long term strategies for Kenya, the MDGs needs assessment report will provide useful information that will guide the general framework of future plans.

ANNEXES

FURTHER INFORMATION AND INSIGHTS ON THE MACROECONOMIC FRAMEWORRK

BOX 0.1:Annexed items

I. **Introduction**

II. **A Feasible Macroeconomic Framework**

III. **Financing Framework of the MDGs Needs in Kenya**

IV. **Exploiting Mdgs Synergies and Gains from Current ERS Investments**

V. **Conclusion**

I. Introduction

There are a number of issues that arise with respect to the estimated costs of achieving the MDGs as contained in the draft report *The Cost of Achieving the Millennium Development Goals in Kenya: A Report of the Needs Assessment and Costing Study* are. First, there is need to recognize current efforts that have an impact on the MDGs. There are for instance core poverty programmes (CPPs) that are currently allocated resources in the budget to address specific areas that are consistent with the MDGs agenda. The current budget allocation for the fiscal year 2004/2005 is US$586 million both for recurrent and development budget. The key

social sectors; education and health take total of about US$286 million for non-wage spending under the CPPs. In addition, there are also other indicative resource allocations within the Medium Term Expenditure Framework (MTEF) budget that are relevant to MDGs. To obtain a realistic cost estimate for achieving MDGs, it is therefore important that current government spending on CPPs and MDG related expenditures contained in the MTEF be taken into account. Second, different interventions towards achieving the MDGs may be complementary since the targets are interrelated. Synergies exist for instance between investments in the education-related MDGs and the health MDGs and vice-versa. In addition, productivity that would have a bearing on the ability of the country to address MDG Goal 1 on poverty and hunger would benefit from synergistic effects of investments in health and education. Quantifying the cost implications of these synergies is methodologically challenging. The existence of positive externalities or synergies implies that adding up the individual costs would result in a serious over-estimation of the costs. These synergistic effects or positive externalities would have to be captured to eliminate overestimations.

Third, average unit costs have been used in the report principally to come up with total costs. Fourth, different institutional and policy environments entail different costs. Although this is an important aspect, it is methodologically challenging to capture it in the costing. Fifth, the estimated costs do reflect the requirements that if financed would not undermine macroeconomic stability. The report does not address the implications of financing the estimated costs on macroeconomic stability. Despite the practical challenges, MDG costing with clear intermediate targets provides a framework through the international development goals can be aligned to the national budget process.

This report attempts to detemine the amount of additional resources that the macroeconomic framework can absorb without undermining macroeconomic stability. Before analysing the feasible macroeconomic framework with respect to increased fiscal space, this report first establishes the costs that relate to MDGs and are already included in the Government fiscal framework. In particular, the core poverty programmes that the Government has been running over the last few years are seen to be directly linked with the MDGs targets and thus need to taken into account when developing the macroeconomic framework. Another important related issue that the report addresses relates to MDG financing by trying to link the MDG costs to the various potential sources of funding namely: taxation; foreign aid; cost recovery and public-private partnerships within a stable and realistic macroeconomic framework.

The report further explores the synergistic effects that can be relied upon to inform strategic choices with regard to the optimal path towards achieving MDG goals. The synergistic effects could be used to scale downwards the MDG cost currently given in the draft report, and also shade some light on the need to consider the long-term policies and strategies for achieving MDGs.

II. A Feasible Macroeconomic Framework for MDGs in Kenya

The draft report *The Cost of Achieving the Millennium Development Goals in Kenya: A Report of the Needs Assessment and Costing Study* does not analyse the macroeconomic consequences of the required MDGs spending. This section addresses the gap by uncovering the macroeconomic implications of undertaking expenditures aimed at financing the MDGs cost requirements. It aims at highlighting whether the proposed magnitudes of intervention are likely to bring about macroeconomic instability[7]. Given Kenya's growth potential, this section analyses to the extent to which fiscal space can be created that would allow the country address the MDGs without undermining the same MDGs targets that such spending is supposed to address.

The starting point of the analysis is to examine whether sectoral interventions at the levels estimated in the draft report *The Cost of Achieving the Millennium Development Goals in Kenya: A Report of the Needs Assessment and Costing Study* when spent through the budget framework would be destabilising to the macroeconomy. If found to be destabilising, the next question is how much can be absorbed given that the country has to have a sustained path towards the achievement of the MDGs? The level of resources estimated in the draft report is US$5.5 billion annually for the next ten years. As already noted, it is important to establish whether this amount of resources is to be spent over and above what the country is currently spending. Based on the most recent budget figures, Kenya at the moment runs a budget that is slightly under US$4.5 billion. Were the estimated additional annual investments to be over and above this current spending, then, the MDGs needs assessment is pointing at doubling the Government budget. It is imperative therefore to examine carefully the macroeconomic implication of the estimated vast level of spending that is identified to be required for realising the MDGs.

a) Macroeconomic Implications of Public Spending on Costs with Direct Effects on MDGs

It is possible to classify the estimated sectoral MDGs costs into two main categories. The first category is the costs with direct effects on MDGs and the second that relates to the broad developmental goals and objectives[8]. Evaluations of Overseas Development Assistance (ODA) over the last ten years or so indicate a remarkable shift in these flows towards the social sectors. Therefore, it is reasonable to assume that the costs with direct effects on MDGs could be financed from external sources. Indeed, the Government can be encouraged, subject to absorption capacity and set macroeconomic targets within an expanded fiscal and

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monetary policy space, to work towards mobilising resources externally, in the form of grants and highly concessional loans to fund directly some of the MDGs related activities falling under the social sectors.

From the draft report *The Cost of Achieving the Millennium Development Goals in Kenya: A Report of the Needs Assessment and Costing Study*, costs related to Education, Health, Water and Sanitation, HIV/AIDS prevention can be identified as having a direct effect on MDGs. Table II.1 provides a breakdown of the estimated costs of achieving the MDGs related to education, health and the water and sanitation interventions. The interventions indicated in the table have costs that relate directly to the MDGs Goals 2, 4, 5 and 6. For Kenya to achieve these goals, annual investments of US$1,220.30 million are required as indicated in the table. However, the Government under its current fiscal framework, executes core poverty programmes and other investment projects, that can be directly linked to the above four MDGs. This therefore allows us to reduce the US$ 1,220.30 million estimates by their budget items totalling to US$ 233 million. Hence the revised cost of executing programmes with direct effect on MDGs will be US$ 987.3 million. In analysing the macroeconomic implications of these costs several assumptions were made.

a) It is assumed that only 80 percent of the estimated costs will be financed through the Government budget, with the remaining 20 percent being taken care of by the beneficiaries and other actors such as those in the civil society. Thus, in the simulation, the macroeconomic effect analysed is based on estimated annual expenditures through the budget of US$789.84 million. This amount will primarily be in the form of recurrent expenditure.

b) With respect to anticipated costs in education, administration and teacher cost are considered as wages and salaries, and other items as goods and services. In the case of health, the assessed costs for maternal and child health, it is assumed that it is expended through personnel acquisition while in the case of HIV/AIDS, malaria and other diseases, it is assumed the spending is in goods and services.

c) Water related expenditures are factored as goods and services.

Table II.1: Interventions with direct effect on MDGs Goals 2, 4, 5 and 6 (US$)

INTERVENTIONS	Annual Expenditure	2005-2015
EDUCATION		
ECDE	3.3	37
Primary Education and Mobile Schools	109.1	1201
Secondary Education	51.4	566
Adult Basic Education	4.3	47
HIV/AIDS	29.1	320
Special Education	7.4	81
Capacity Building	8.7	95
Quality Assurance and Standards	5.9	65
Non-Formal Schools	0.4	4
School Feeding, Health and Nutrition	18.7	206
Monitoring and Evaluation	0.1	1
Administration and Teachers Costs	122.5	1347
SUB-TOTAL	360.9	3,970
MATERNAL & CHILD HEALTH		
Maternal Health Care	5.9	65.2
Child health	25	274.7
SUB-TOTAL	30.9	339.9
HIV/AIDS, MALARIA & OTHER DISEASES		
Care And Treatment Of HIV/AIDS	506.1	5,567.50
HIV/AIDS Prevention	205.1	2,255.90
Malaria Treatment, Prevention & Administration	37.7	415
TB (Treatment, Prevention, Facilities & Admin)	5.4	59.6
SUB-TOTAL	754.3	8,298
WATER (Excl. costs not in the MDG Model)		
Provision of Rural Water	15.1	166
Provision of Urban Water	34.3	377
Provision of Rural Sanitation	4.4	48.6
Provision of Urban Sanitation	17.2	189.6
Waste Water Treatment	1.7	18.8
Hygiene Education	1.5	16.6
SUB-TOTAL	74.2	816.6
GRAND TOTAL	**1,220.30**	**13,424.50**
Expenditures on Core Poverty Programmes	233.0	2,563.00
Revised MDG intervention	**987.3**	**10,861.50**

Source: *The Cost of Achieving the Millennium Development Goals in Kenya: A Report of the Needs Assessment and Costing Study*, Draft Report; Budget Estimates 2004/05

The macroeconomic analysis baseline

The macroeconomic effects of annual costs indicated in Table II.1 were examined using the KIPPRA-Treasury Macro Model as earlier explained. This model is only able to give realistic projections that cover the short- to medium-term. The analysis was therefore undertaken up to the period 2013, which is a reasonable horizon that allows conclusions to be made about the feasibility of the public spending targeted at the MDGs needs.

In undertaking the analysis, a baseline was constructed by extending the current ERS baseline to 2013. The baseline projection of selected macroeconomic indicators is presented in Table II.2 below. The underlying assumptions in building the baseline are that the international environment pertaining at the time of preparing the ERS will persist. It is also assumed that the monetary policy space will remain restricted through a targeted underlying (core) inflation of an average of 3.5 percent. A gradual depreciation of the exchange rate to accompany the tight monetary policy environment and to maintain competitiveness is assumed. The economic growth baseline is further informed by the estimated Kenya's GDP growth potential of 4.5 percent per year given the economy's current economic and social conditions (see World Bank 2003[9]).

Table II.2: Selected baseline macroeconomic indicators

Variable	2005	2006	2007	2008	2009	2010	2011	2012	2013
Real GDP	3.4	3.8	4.1	4.3	3.7	4.3	4.0	4.7	5.0
Inflation	6.8	4.3	3.5	3.4	3.4	3.3	3.1	3.3	3.1
Exchange rate	79.8	80.2	80.5	80.9	83.6	86.1	87.7	88.2	89.5
Current account	-2.9	-3.7	-5.1	-6.0	-7.2	-7.2	-7.4	-7.2	-7.3
Budget deficit	-6.1	-7.1	-7.4	-7.1	-6.5	-6.1	-5.7	-5.4	-4.9

Note: The current and budget deficits are reported as a proportion of total GDP.

Macroeconomic implications of costs with direct impacts on MDGs: Deviations from the Baseline

To appreciate the macroeconomic implications of the MDGs-oriented expenditures, it is necessary to consider what impacts they would have on indicators of macroeconomic stability. These expenditures are estimated at US$987.3 million annually. Table II.3 reports the impacts of these additional budgetary expenditures in terns of deviations[10] from the baseline. The reported results in Table II.3 are based on increased government expenditures through

[9] World Bank (2003), Kenya: A Policy Agenda to Restore Growth, The World Bank

[10] It is important to note the difference between absolute figures such as those reported in the baseline and deviations from the baseline. A positive deviation implies an increase in the macro indicator and vice versa .

domestic mobilisation of financing resources. The results indicate the precariousness of the Kenyan economy when faced with the burden of domestically financing the MDGs as can be seen by the free fall in the exchange rate and rising inflation. Moreover, the ability of the economy to register the implied GDP growth can be called into question, given that the economic growth has a limit as earlier noted. The implication then of this analysis is that unless there are changes in the economic structure and the social conditions, the GDP implied by the social MDGs is unlikely to be achieved and as such the MDGs costs cannot be fully absorbed without creating instability in the economy.

But it is important to note that an economic growth rate beyond the current economy's potential will result in inflation associated with the higher expenditures above the current inflation target of 3.5 percent. The relaxation of the monetary policy space and the widening of both the current and budget deficits will lead to a rapid depreciation of the shilling, especially given that most of the social MDGs are, at least in the short to medium term are associated with increased consumption in the economy. The MDGs related to education and health in particular have longer gestation period in terms of their positive contribution to the economy, compared to the more growth and development enabling interventions of MDGs.

Table II.3: Macroeconomic implications of public spending with direct effects on MDGs through increased domestic borrowing (deviations from baseline)

Variable	2005	2006	2007	2008	2009	2010	2011	2012	2013
Real GDP	9.9	5.0	4.7	1.6	-0.9	-1.9	-1.8	-0.6	0.9
Inflation	-0.2	2.0	5.0	6.9	7.9	7.9	7.2	6.1	5.4
Exchange rate	0.0	4.2	11.1	17.7	25.3	34.6	45.6	58.7	74.0
Current account	-2.0	-2.8	-1.8	-1.5	-1.1	-0.9	-0.7	-0.7	-0.5
Budget deficit	-3.9	-2.1	-0.7	0.0	0.1	-0.2	-0.6	-0.6	-0.4

The summarised impacts in Table II.3 assume that the financing is from domestic borrowing. But suppose that Kenya was in a position to mobilise the required expenditures from other sources, principally in the form of foreign grants. Can the economy absorb the high level of spending without creating macroeconomic instability? The results assuming foreign financing of the costs with direct impacts on MDGs are shown in Table II.4. The economic outcomes in terms of GDP growth are not much different from those that emerge when the expenditures are met through domestic financing[11] except that the exchange rate does not

[11] KTMM has rigid monetary transmission mechanism. As a result, the interest rate structure underpinning results given in Tables II.3 and II.4 is similar.

depreciate as rapidly as in the domestic financing scenario. While the same concern arises as to the ability of the economy to attain the projected growth, the macroeconomic outcomes are much more favourable. Even though the inflation profile remains similar to that reported in Table II.3; there is a subdued depreciation of the exchange rate compared to the dramatic depreciation[12] accompanying domestic financing. The external performance in the form of current account balance indicates deterioration in the first few years, while the fiscal position of the Government benefits from the accompanying growth in the economy. Initially, there is an increase by 10.1, 5.3 and 4.4 percentage points in real GDP above the base in the first three years, but this growth spurt is not sustained and is followed by a rapid slow down over the period 2008-2013. The ensuing high inflation seems to play a major part in undermining private consumption and investment, resulting in a cyclical decline in the economic performance in the period starting 2008.

The implications of the foregoing analysis suggest that unless there is a relaxation of the monetary policy space, the economy is not likely to be in a position to absorb the huge expenditures with direct impacts on the MDGs. In the same vein, an expanded fiscal space will also be necessary, allowing the fiscal deficit to breach the current targets, unless the financing directed at MDGs costs can be sourced externally in the form of grants. Putting the growth potential of the economy into the picture, even with the relaxation of the monetary and fiscal space, it is apparent that the economy will not be able to sustain the initial growth spurt, as it quickly enters into a cyclical slow down. In effect, spending targeted directly at the MDGs will need to be accompanied with significant growth enhancing investments, which allow the economy to sustain a long cycle of high growth rate. This is the question that is addressed in the next section.

Table II.4: Macroeconomic implications of public spending with direct effects on MDGs through foreign grants (deviations from baseline)

Variable	2005	2006	2007	2008	2009	2010	2011	2012	2013
Real GDP	10.1	5.3	4.4	0.9	-1.9	-3.3	-3.4	-2.2	-0.7
Inflation	-0.2	2.1	5.1	6.8	7.6	7.1	5.8	4.0	2.6
Exchange rate	0.0	4.4	11.3	17.6	24.4	32.2	40.6	49.5	58.8
Current account	-2.2	-2.8	-1.7	-1.2	-0.7	-0.3	0.1	0.4	0.7
Budget deficit	1.5	3.3	4.6	5.0	5.0	4.7	4.3	4.2	4.3

[12] This depreciation could even be understated given that the interest rates were not allowed to significantly increase compared to the baseline (see footnote regarding the monetary transmission mechanism in KTMM).

b) The Macroeconomic Implications of Costs related with Growth MDGs

The second category relates to the interventions that are related to the broader growth goals – the MDGs enabling interventions. These are the costs that relate to urban and rural development and some of the infrastructure investments. The users are in a position to finance some of these costs and therefore, the estimated costs need not be fully related to the Government budget. Indeed, growth realised as a result of positive impacts from the investments that have direct impacts on MDGs as discussed in the first category, could help finance some of the growth enabling interventions in support of the MDGs. What this means then, is that the macroeconomic implications of the costs related to broader growth goals are not treated in this analysis as if they are direct spending by the government.

The estimated total costs of the growth related MDGs as given in the draft report *The Cost of Achieving the Millennium Development Goals in Kenya: A Report of the Needs Assessment and Costing Study* is summarised in Table II.5. The country requires an estimated annual investment of US$4,057 million if it is to address the MDGs Goals 1 and 8 and also create the environment for sustaining the gains that address all the other MDGs. Like in the previous case we net out the Government development expenditures that are related to Core Poverty Projects and other investment projects totalling US$ 1,236.9. Consequently the amount of investments that is needed to address the MDG goals 1 & 8 can be revised to US$ 2,820.4 million. The challenge like in the case of the costs that have direct impacts on other MDGs[13] (2, 4, 5, and 6) is the capacity of the economy to absorb the expenditures without creating macroeconomic instabilities.

In order to analyse the macroeconomic implications of the estimated costs, there is the question of what proportion of the expected expenditures can be catered for directly by the public sector and how much can be met by the households and the rest of the private sector.

With respect to the estimated expenditures associated with the enabling sectors such as roads, railways, maritime etc. there is the option that the private sector could play a key role in the financing mechanisms and as a result the Government contribution would be expected to be much lower in comparison to the costs shown in Table II.5. The ERS clearly identifies the private sector participation in the financing of MDGs needs assessed costs that have direct impact on growth.

[13] It is reasonable and efficient to assume that MDGs Goals 3 and 7 are mainstreamed in the interventions of all the other MDGs Goals.

Table II.5: Estimated cost of growth oriented MDGs (US$ million)

INTERVENTIONS	Annual Expenditure	2005-2015
HUNGER		
Agricultural Productivity	291	3,201
Rural Income Generation	195	2,143
Nutrition Interventions	248	2,729
Capacity Building	41	451
SUB-TOTAL	775	8,524
ENERGY		
Administrative Strategies	97.2	1,069.50
Fuelwood Supply Strategies	28.7	315.3
Charcoal Conservation Strategies	17.8	195.7
Petroleum Products	203.9	2,243.30
Electricity	271.7	2,988.50
New and Renewable Energy	257.5	2,832.50
SUB-TOTAL	876.8	9,644.80
SLUMS IMPROVEMENT		
Enabling Environment for Accessing Land & secure Tenure	1.1	12.5
Upgrading and Deterring New Formations	893.2	9,825.00
Integrated Urban Planning	6.8	75
Capacity Building for Stakeholder Participation	5	55
Integrated Communication Framework	1.1	12.5
SUB-TOTAL	907.2	9,980.00
MDG – OTHER ENABLING SECTORS		
Roads	917	10,087.50
Railways	225	2,475.00
Maritime Transport	37.5	412.5
Jetties	25	275
Information and Communication	100	1,100.00
Meteorology	87.5	962.5
Trade and Industry	106.3	1,168.80
SUB-TOTAL	1,498.30	16,481.30
GRAND TOTAL	**4,057.30**	**44,630.30**
Expenditures on Core Poverty Programmes	1,236.90	13,605.40
Revised MDG intervention	**2,820.40**	**31,024.90**

Source: *The Cost of Achieving the Millennium Development Goals in Kenya: A Report of the Needs Assessment and Costing Study*, Draft Report, and Revised Estimates 2004/05

The slum-upgrading programme, which relates to construction activities, is another area where the public-private partnership could play a key role. The private sector currently contributes a significantly higher share compared to the public sector. Therefore, in evaluating the macro impacts of the slum-upgrading programme, it is reasonable to assume that the public sector is a secondary player in terms of implementation. But in making these arguments, it should not be lost that Kenya's per capita incomes remain low and the private sector and households for that matter are not endowed sufficiently to provide the large injections identified in the MDGs needs assessment and costs. The public sector will remain a major actor and investor to the foreseeable future.

Given this background, the following simplifying assumptions were made:

a) 25 percent of the estimated US$ 2.82 billion is expended in the form of recurrent spending with the remainder treated as development. Accordingly, recurrent expenditure is estimated at US$ 705.1 million and it is assumed that part of it comes from the Government and the rest from the beneficiaries. Taking the example of the fertilisers and manure, and even soil conservation, it is reasonable to assume that the Government can contribute only up to a maximum of 50 percent (thus US$ 352.6 million) and the farmers contribute the rest.

b) In the case of development expenditure, it is assumed that the public sector will contribute 70 percent of the US$ 2,115.3 million and the private sector the remainder. So for simulation purposes, the Government will have to raise US$ 1,480.0 million annually with the private sector contributing a further US$ 634.6 million.

Macroeconomic implications of MDGs enabling growth and development related interventions: deviations from the baseline

Table II.6: Macroeconomic implications of public spending on MDGs with broader growth effects (deviations from baseline)

Variable	2005	2006	2007	2008	2009	2010	2011	2012	2013
Real GDP	20.0	13.9	10.8	3.2	-2.6	-4.9	-6.8	-5.0	-3.4
Inflation	-0.8	5.3	11.9	16.9	18.7	18.2	14.6	10.1	5.7
Exchange rate	0.1	10.8	27.7	46.2	67.7	96.0	126.8	160.2	191.5
Current account	-5.3	-6.3	-4.5	-3.4	-2.9	-1.5	-0.6	0.6	1.5
Budget deficit	2.9	7.0	9.9	10.8	11.4	11.5	11.6	12.3	13.2

Injecting the costs that directly affect growth from the draft report *The Cost of Achieving the Millennium Development Goals in Kenya: A Report of the Needs Assessment and Costing Study* into the economy, give high GDP growth rates above the baseline, for instance, there will be an additional 20 percentage points in 2005 and substantial positive deviations in the subsequent years. Given that Kenya's long-term economic growth potential is currently estimated at 4.5 percent, the large injections could easily end up destabilising the economy. This would send inflation increasing over the years (see the deviations above the inflation target of 3.5 percent) and the exchange rate spiralling downwards at a very high rate. However, since the economic activities remain vibrant, the budget deficits improve and the current account balance worsens initially although at a slow rate. It would take an average GDP growth rate[14] of 12% for the economy to absorb the huge amounts of expenditure. The question we would ask at this point is the absorptive capacity of the economy to mobilize the resources and use them without destabilizing the economy.

From the above analysis, the limits of the economy come into play. Even when the financing[15] question of the large sums of money is considered, the outcomes, though lower in magnitude, remain beyond the capacity of the economy.

The analysis to this point, leads to the next question, what then is the most feasible macroeconomic framework that would be supportive of the MDGs for Kenya? This question is addressed in the following subsection.

c) Towards a Feasible Macroeconomic Framework for MDGs Achievements: A Higher Case Scenario for the ERS

In this section, what is considered to be a realistic higher case scenario is developed. This scenario, is informed by the limits that have been identified in the foregoing analysis, where it has been shown that implementing programmes aimed directly at MDGs will not only require significant amounts of money but that they will pose a challenge to the continued stability of the economy. The macroeconomic stability questions that emerged can be summarised below:

- **Limited economy's growth potential:** Whether one looks simply at implementing the interventions that have direct effects on MDGs or interventions that are supportive of growth that would eventually help in the MDGs attainment, there exists today in the economy limited capacity. Unless there is a rapid and sustained restructuring of the economy and the

[14] The economy would have to grow by an average annual growth rate of 18 percent when the costs with direct effects on MDGs are taken into account. This is way above the mark when looked against the growth potential of the economy as already discussed.

[15] The scenario that took account of the financing requirements of the development expenditure was drawn using the foreign cash grants route. This is in line with the stated policy that in future all efforts will be made to mobilize foreign financing in form of grants or at worst concessionary loans.

social conditions in the country, the long-term growth potential as currently estimated is 4.5 percent per year. Unless the fiscal and monetary policy spaces are opened up significantly, the absorptive capacity of the economy would remain low and the country will not be in a position to withstand large injections foreseen as required to achieve the MDGs without creating instabilities in the macroeconomy.

- **MDGs interventions could lead to high inflation:** It is also clear from the analysis that given that most of the interventions foreseen require the purchase of goods and services; inflation emerged as an issue of concern. In particular, interventions that have direct impacts in MDGs Goals 2, 4, 5 and 6 will mainly lead to increased government consumption. This indicated clearly that it could pose inflation problems.

- **Unrealistic depreciation of the exchange rate:** When the MDGs interventions were assumed to be undertaken through deficit financing, there was, in addition to the rising inflation, significant depreciation of the exchange rate. When accompanied with the high inflation, the competitive position of the country does not actually improve. Even when financing was assumed could be sourced externally, depreciation associated with high inflation continued at a destabilising rate although lower than when the interventions are to be financed through domestic borrowing.

- **Unsustainable current account and budget deficits:** Implementing the required interventions for MDGs will also pose serious challenges on the side of the macroeconomic balances. The large deficits that ensue raise sustainability questions. They clearly point out that at a future point, high taxation (which could reverse gains made by the vulnerable that might have broken the poverty barrier) would have to be considered.

Given the above summary and the macroeconomic concerns that it raises, the critical question that has been posed many times over then comes to the fore. Does it mean that the MDGs are just a dream? Clearly, the economic and social costs of the current situation that the MDGs are trying to eliminate cannot be compared to the macroeconomic instability issues that we have raised. In other words, rising mortality of children and mothers; controlling the spread of malaria and HIV/AIDS cannot be compared in the same breadth as concerns regarding the macroeconomic environment. Increasing poverty weighed against the macroeconomic costs has to be looked at in the context of the welfare benefits and costs of one vis-à-vis the other. In the remainder of this section, these questions are put into perspective and a macroeconomic framework is proposed, which is felt will move the country in mid-sized steps towards achieving the MDGs targets. The macroeconomic framework proposes the need for the enlargement of the fiscal and monetary policy space to that optimal point where it does not negate the gains made through the various steps towards the MDGs Goals.

In order to move forward then, the following points outline how the macroeconomic framework was designed and give insights into the key assumptions.

(a) *Prioritisation of the MDGs interventions:* Given the limited capacity both in terms of financing capacity (domestic and uncertain external) and the ability of the economy to absorb the large injections, it was necessary to consider the key MDGs that would have synergistic effects that would ultimately impact on the others. Moreover, MDGs Goals 3 and 7 could easily be mainstreamed in the prioritised ones. For the purposes of the analysis, the focus is on how much of the estimated costs can be absorbed. Once found to meet the macro stability criteria set (with created fiscal and monetary policy space), the next agenda at the operational level will be the prioritisation.

(b) *Relaxation of fiscal and monetary policy constraints:* The designed macroeconomic framework proposes the creation of fiscal space, without which MDGs will remain unattainable. The economic and social costs of poverty for instance are considered to be much higher than similar costs of higher fiscal deficit. But this fiscal space can be created to a limit. Similarly, the monetary policy space is proposed requires opening up, again to a limit. The macroeconomic framework therefore proposes that in the early years, as the capacity of the economy is strengthened, larger fiscal deficits could be entertained. The deficits would mainly be used to finance operations and maintenance and development expenditures in priority areas. On the monetary side, the macroeconomic framework proposes that the limit for overall inflation be set at between 10 – 12 percent. Beyond this rate, it is thought that the country could enter an unsustainable high inflation period. There is empirical justification that a window exists in an inflation profile where below a certain rate and above a certain rate, inflation would limit growth. But anywhere between the minima and maxima, growth could be achieved without being undermined.

(c) The international solidarity on the MDGs underlines the assumption that foreign grants will be the main source of financing the interventions required, especially on operations and maintenance and the first three years of expanding human capital through hiring of more health workers and teachers.

The proposed macroeconomic framework outlined below (see summary of the maximum absorbable expenditures and resulting macroeconomic outcomes of selected indicators in Table II.7) starts from the position that due to the limited capacity, only a proportion of the MDGs interventions can be undertaken. It is then assumed that the absorbable MDGs cost will need to be prioritised on the basis of the targets that are currently being pursued. But for practical purposes, the macroeconomic framework further notes the following:

- Of the absorbable MDGs costs, for the first three years (2005-2007) the focus will be on beefing up the human capacity in which case about 42 percent will go to personnel mainly in hiring more teachers, health workers and agricultural extension officers. About 39 percent will be allocated to operations and maintenance (mainly for increased teaching materials, provision of anti-malarial drugs and treated mosquito nets and also ARVs acquisition. About 19 percent of the costs will have to be directed towards investments that will build capacity in the economy to absorb higher levels of MDGs interventions.

- In the medium term, the structure of the public expenditures related to the MDGs will continuously be oriented more towards sustaining the additional human capital and accelerating the other MDG enabling investments especially in infrastructure (especially in the major trunk roads and rural access roads), energy, including the physical infrastructure for the education and health sector. The proportion of MDGs costs will be restructured as follows: personnel (28%); operations and maintenance (39%) and development expenditures (33%).

Table II.7: Proposed macroeconomic framework: Higher case scenario

	2005	2006	2007	2008	2009	2010	2011	2012	2013
MDGs costs[16] (Kshs million)	21,750	34,804	43,505	65,257	87,010	108,763	152,268	174,020	174,020
% of total costs	7%	11%	14%	20%	27%	34%	47%	54%	54%
Distribution of additional expenditures addressing MDG interventions (Kshs million)									
Personnel	9,135	14,618	18,272	18,272	18,272	18,272	18,272	18,272	18,272
Operations and maintenance	8,483	13,574	16,967	25,450	33,934	42,418	59,385	67,868	67,868
Development expenditures	4,132	6,613	8,266	21,535	28,713	35,892	50,248	57,427	57,427
Macroeconomic results									
GDP (%)	5.8	6.9	7.3	8.1	6.5	6.4	6.2	6.1	5.9
Overall inflation (%)	6.7	4.9	5.4	6.6	8.0	9.2	10.1	11.1	11.5
Fiscal deficit (% GDP)	6.0	6.4	5.9	5.4	4.2	3.5	3.0	2.3	1.2
Current account deficit (% GDP)	3.6	5.0	6.3	7.5	8.8	8.8	9.2	9.1	8.7

Source: KIPPRA, KIPPRA-Treasury Macro Model Simulations

[16] The total MDGs related costs have been revised to net out the current expenditures programmed and being undertaken by the Government under the Core Poverty Programmes and Other Investment Programmes that can be linked to the MDGs. They in effect scale-up the current ERS programme of activities.

- The macroeconomic framework developed herein assumes a financing arrangement where the government finances the development expenditures[17] while the personnel and operations and maintenance costs that have direct impacts on the MDGs are to be taken care of through the foreign grants.

Table II.7 summarises the growth outcomes of the higher case scenario that could scale up the current ERS macroeconomic framework. This scaled up framework, will not absorb all the estimated costs of the MDGs interventions due to associated macroeconomic costs and risks as revealed macroeconomic simulations. Absorbing injections beyond a certain level will be destabilising and this could negate the objectives being pursued such as creating an enabling environment for achieving the MDGs.
It is clear from Table II.7 that assuming the benchmark of the estimated costs as given in the draft report *The Cost of Achieving the Millennium Development Goals in Kenya: A Report of the Needs Assessment and Costing Study,* in the first year (2005), only 7 percent of costs can be absorbed. However, in spite of this low absorption rate, if the resources could at this early stage be used to enhance institutional capacity important benefits could be realised. These early interventions would target the useful areas of quality and productivity.

From the second year onwards, capacity in the economy will begin to expand such that by 2006, 11 percent of the MDGs estimated costs could be absorbed. Again, Table II.7 summarises the proposed the allocation of the interventions that could be beneficial to the economy. It is important to highlight that at this point, it will be necessary to open up the policy space both from the fiscal and monetary side in order to realise the expected gains.

As the policy space is gradually opened up, it will be possible for the economy's capacity to be scaled up from its current long-term growth potential of 4.5 percent to at least 6 percent, and by 2012, it will be able to absorb up to 54 percent of the annual estimated intervention costs, over and above the normal budget operations.

[17] The public-private partnership could be taken into account in the financing framework for development expenditures, given that the MDG enabling investments are to a large extent interventions that the private sector could do quite well in.

III Financing Framework of the MDGs Needs in Kenya

This section attempts to draw up a financing plan for MDGs identifying the various sources of resource mobilization. Using macro econometric model simulations based on KTMM, this section attempts to other the question as to how much of the MDGs financial requirements could be met from domestic sources given the feasible macroeconomic framework. The current Government financing framework is thus evaluated to take in to account the financing gap for MDGs. The financing gap after taking care of the domestic resources and the committed donor inflows is the one that financing strategies should be drawn, identifying the various options available for more international inflows and private sector contributions.

In order to derive the financing framework consistent with the macroeconomic framework described under the higher case scenario, it would be important to first revise the MDG costs contained in the Needs Assessment and Costing study report to factor current government expenditure commitments that can directly be linked to the MDG. Considering the fact that all the Core Poverty Programmes and other Investments projects contained in the current budget and targeted at reducing poverty and creating employment under the ERS are linked to a number of MDG goals allows us to revise the MDG costs. These costs are estimated to total US $ 1,470.2 billion. Netted out of the MDG costs contained in the Needs Assessment and Costing study report of US$ 5,546.7 billion yields a new cost of US$ 4,076.5 billion to be spent annually so as to meet the MDG goals. This is the cost that has been used to determine the maximum absorptive capacity of the economy under the feasible macroeconomic framework above. The above macroeconomic framework stipulates the maximum level of this cost that can be absorbed and that is consistent with the Macroeconomic framework under the higher case scenario. Detailed below is the resulting financing framework implied with the above simulations.

Table III.1: Proposed financing framework consistent with the higher case macroeconomic scenario

	2005	2006	2007	2008	2009	2010	2011	2012	2013
Distribution of resources and sources of resources to meet the costs of MDG interventions (Kshs million)									
Government Financing From Additional Revenues arising from higher Government Expenditures	4,985	15,235	29,458	48,774	76,488	106,990	144,851	191,946	247,447
Donor support in the form of Grants	17,618	28,855	37,549	48,373	61,819	77,546	103,754	125,373	143,785

Source: KIPPRA, KIPPRA-Treasury Macro Model Simulations

The financing framework suggested above indicates that the bulk of MDG related expenditures would be financed mainly by donor support in the form of grants in the initial years. The government could finance these costs to a maximum of 22% in the first year but higher in later years. These resources will principally arise from enhanced revenue receipts arising from higher government expenditures. It is important to note that at the initial period there is no government borrowing. This creates room for domestic borrowing to support the MDG related expenditures should the government no be able to attract the assumed level of donor support. One distinctive outcome of these simulations are that as the government spends more on the MDG related expenditures, its revenue capacity also expands (also supported by the higher economic growth). Consequently, more resources, in the form of revenues and also donor support become available to support government programmes. This depicts a case where either the government could reduce its reliance on the donor support or could increase the implementation rate of the MDG related projects.

IV. Exploiting MDGs Synergies and Gains from Current ERS Investments

a) Introduction

There are three perspectives to exploiting synergies in MDGs:

- The first perspective is in the two-way causality in the targets that creates a multiplier effect or positive externalities.
- The second synergy emanates from the change in baseline values for each target over time such that the required investments in some of the interventions may decline over time.
- The third synergy is from other non MDG activities in the case for Kenya the other ERS related investments

Public investment and strategic policy choices with regard to the optimal path to achieving MDGs should therefore be analyzed taking into account the dynamic mechanism and interactions between the targets. The correlation between literacy rates and child and maternal mortality means that increasing the literacy levels impacts on the achievement of the later. The achievement of target 6 combating infectious diseases relates to the gender equality—women are healthcare providers of the last resort—when the burden of disease is reduced, this frees up time for women to engage in more productive activities. Increasing access to safe water, for instance, creates synergies for goals 3, 4 and 5 and also goal 6. Clearly it is not possible to map all the interactions in a model, or map them in a two-dimensional matrix and it is even more difficult to capture in a micro simulation model when the direction of causality is not clear.

Taking cognizance of these limitations, this section explores some of the synergies through MDGs interactions and other ERS investments using two approaches. In the first approach the interactions between achievements in health and education are explored that could be used to revise the MDGs costs in the two sectors. In the second approach Social Accounting Multiplier Analysis is used to point to the activities which have the strongest backward linkages with the rest of the economy which therefore if given priority in public investment, in the IP ERS, have potential for achieving the MDG targets through the multiplier effect or positive externalities and thus have implications for the estimated costs.

b) Synergies in Health and Education Spending

Education and health are major prerequisites for human resource development for any economy. MDGs in education sector include: achieving Universal Primary Education by 2015; promote gender equality at primary and secondary education levels by 2005 and at all levels of education by 2015; and reduce illiteracy rates by half by 2015. Based on the ERS, Kenya's education targets are to: achieve 100% primary NER by 2007; gender equity by 2005; primary completion rate of 60% by 2005; secondary GER of 45% by 2007; a transition rate from primary to secondary schools of 70% (65% public) by 2008; a pupil-to-textbook ratio of 1:3 and 1:2 for lower and upper primary levels respectively. In the health sector, related MDGs include reducing mortality rates, improving maternal health, improving health systems and reducing HIV/AIDs prevalence, TB and malaria incidence. All these goals including reducing poverty incidence by half by 2015 are interlinked, partly due to the social and private returns to human capital development.

Studies on human capital externalities and returns to education in Kenya (Manda et al (2002)) have established that human capital has a positive impact on earnings and that a general increase in the level of education benefits all workers. The general increase in female education benefits both men and women, but men benefit more than women. On the other hand private returns to education generally increase with level of education and basic education has the highest social returns. These findings have implications on financing mix and the strategic policy choices for attaining MDGs in Kenya. For instance, with the increase in private returns as the level of education increases, there may signal for the need to shift public resources from tertiary to basic education where social returns are higher and strengthen private-public sector partnerships in provision and financing of tertiary education. Studies have also established that both non-health and health expenditures have impacts on health status (See for instance, Kimalu, 2002; Filmer & Pritchet, 1999).

Although in the early 1990's Kenya had made significant progress in achieving health related MDGs such Infant Mortality Rate (IMR) and Child Mortality Rate (CMR), in early 2000's, the gains had been reversed. The situation implies that Kenya needs to contain the situation and scale up activities to achieve MDGs by 2015. The synergies in education can also be observed in health. For instance, health status (measured through CMR) is negatively related to: Primary education spending; Real GDP per capita; and education outcomes (Primary education completion rates and literacy rates). Thus when reallocating resources among the two sectors, the synergies between

health and education can be explored particularly in increasing primary education, for improved health outcomes.

In addition to the above synergies in Education and Health, there are other inter-relationships. For example, WHO has estimated that poor physical environment is responsible for one fourth of all preventable diseases. According to the Needs Assessment and Costing Study there are cross cutting issues that are not directly related to health but have significant impact. Provision of water, sanitation and hygienic education, use of clean cooking fuels, condom use and widespread use insecticide-treated nets can reduce total health costs by 20-35 percent in different countries.

c) A Social Accounting Multiplier Analysis

In this section we use a multiplier analysis to explore synergies that would be used in the possible scaling down costs as well as provide further insights in possible strategic policy choices on the path optimal path to achieving MDGs. The multiplier analysis is based on the 2001 SAM (Social Accounting Matrix) for Kenya developed by IFPRI.

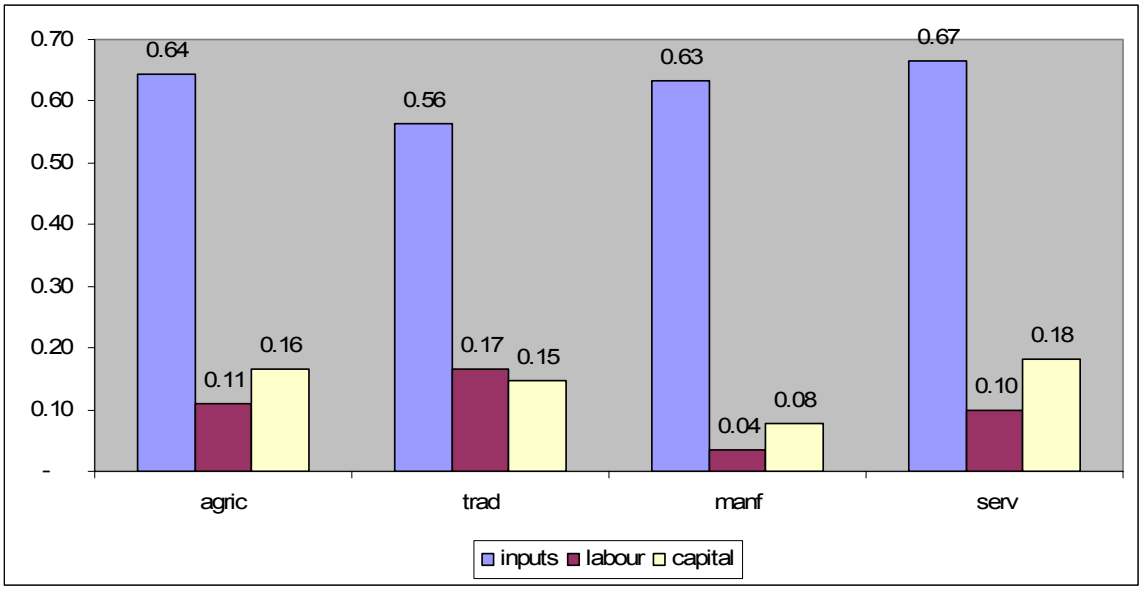
A SAM is a matrix that captures all the transactions in an economy in one period, usually a year. The SAM is like a double entry accounting framework where the row accounts represent revenues and the column accounts represent expenditures and the revenue and expenditure account must balance. The SAM integrates input- output, consumption, flow of funds and foreign transactions in a consistent framework capturing the economic inter linkages between sectors and economic agents. The 2001 IFPRI SAM for Kenya is highly disaggregated with 58 sectors but for the purposes of this analysis it has been aggregated to 38 sectors as follows:

Activities/ Commodities	***Factors/ Value added***
Roots, Tubers, pulses and sugarcane	Wage labor agricultural
Maize and other cereals	Wage labor non agricultural
Fruits Vegetables and cut flowers	Agricultural capital
Tea and Coffee	Non Agricultural capital
Beef, veal, milk &dairy, other livestock	
Fishing, Forestry &logging	***Households***
Mining	Rural Female ultra poor
Food	Rural female poor
Textiles &Wood	Rural female non poor
Petroleum &other chemicals	Rural male ultra poor
Non metallic industries	Rural male poor
Metallic industries	Rural male non poor
Utilities	Urban Female ultra poor
Construction	Urban female poor
Trade	Urban female non poor
Transport & communication	Urban male ultra poor
Owned housing	Urban male poor
Other services	Urban male non poor
Public services	
Public administration	Health
education	Agricultural service

The SAM can be used as a static modelling framework through a multiplier analysis, (forward and backward linkages) in an economy. The linkages determine income distribution and expenditure pattern as a result of change in the structure of production arising from certain interventions for example government policy or a change in export demand, or increase in the demand of a given product. This analysis is based on the envisaged government interventions towards achieving the MDGs and the IP ERS targets.

To undertake the multiplier analysis the first step is to determine the endogenous and exogenous accounts of the SAM.Besides the multipliers, average expenditure propensities provide some useful insights into the structure of production and income distribution. We discuss the expenditure propensities first to illuminate the ensuing discussion on multipliers.

Table 2.1 Average expenditure Propensities



The table shows that in agriculture for instance, the labour share in gross output is 11% and the capital share is 16% and intermediate inputs take 64%. Traditional activities, fishing, forestry and mining are the only activities where labor share is higher than capital share. Labor takes the lowest share in manufacturing activities at only 4%. The value addition in the structure of production is very low in most of the activities. Since most of the households are endowed with labor and not capital the structure of production perpetuates a situation where most households remain trapped in poverty. Reading this table together with Annex 2 shows the savings dilemma (and therefore investment) facing the country. Only three household groups have the potential to save from their income; the rural non-poor male headed households, urban non-poor female-headed households and the non-poor male-headed urban households. The other household groups consume over 91% of their incomes. An investment programme aimed at reducing poverty should therefore be based on an in-depth understating of the economic structure.

i. Multipliers of the Kenyan Economy

The Multipliers for the Kenya economy based on the conditions prevailing during the year 2001 are presented in Table 2.2. The table has gross output multipliers and GDP (value added) multipliers. The multipliers are greater than 1 because of the initial injection into the activity.

Another useful set of multipliers is247 household income multipliers, (by

social economic groups) which can provide useful insights into the pro poor government investment interventions. The household income multipliers show the distributional impact of different interventions. These sets of multipliers are discussedbelow.

Table 2.2 Gross Output and Value Added Multipliers

Activity	gross output multiplier	GDP (VA) multiplier
Maize	5.20	1.01
Other Cereals	5.26	1.36
Roots and Tubers	6.31	1.42
Pulses	6.26	1.30
Sugar Cane	6.64	1.44
Fruits	6.25	1.44
Vegetables	6.39	1.30
Cut flowers	6.22	1.34
Tea	6.21	1.25
Coffee, Green	6.13	1.28
Beef & Veal	6.49	1.37
Milk & Dairy	6.32	1.40
Other Livestock	5.97	1.35
Fishing	6.55	1.72
Forestry & Logging	4.97	1.23
Mining	5.14	0.74
Food	6.12	1.20
Textiles, Leather & Footwear	4.16	0.53
Wood & Paper	4.19	0.66
Petroleum	5.64	0.68
Other Chemicals	2.48	0.29
Non metallic	4.65	0.71
Metal Products (incl. Mach & Equ)	1.55	0.08
Electricity, Gas & Water	7.04	0.96
Construction	6.62	1.27
Trade	7.20	1.62
Transport & Communication	5.73	1.33
Owned Housing	6.97	1.95
Other Private Services (incl. Hotels, Restaurants & Financial Services)	6.20	1.35
Public Admin	7.20	1.26
Education	7.42	1.08
Health	7.18	1.48
Agricultural Services	7.15	1.51

It can be seen from the multipliers that the highest multiplier effects are in the agricultural activities but fishing has a much higher multiplier at 1.72. In manufacturing only food related activities have a multiplier greater than one. Owned housing is the other high multiplier activity at 1.95, the highest among all the economic activities. Agricultural export activities have the lowest multipliers, with tea having the lowest at 1.25. The multiplier for coffee is 1.28 and cut flowers at 1.34, compared to 1.44 for fruits and sugarcane. Roots and tubers have a multiplier of 1.42 for roots while the multiplier for other cereals is 1.36.

Public services: among the public services education has the highest gross output multiplier at 7.42. However, the Value added (GDP) multiplier for agricultural services is the highest multiplier at 1.51, followed by health services at 1.48.

ii. Household Income Multipliers**:**

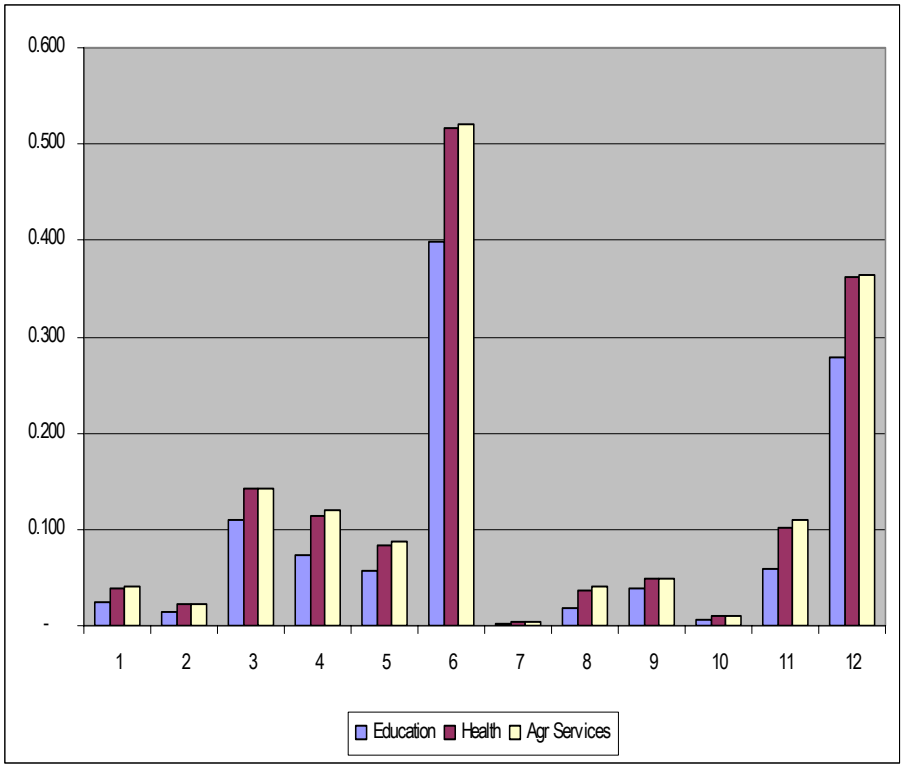
Detailed household income multipliers are presented in table 2.3. We use a few examples to interpret the meaning of the multipliers, based on different exogenous shocks.

- ***Increase in demand of cut flowers by 100 units***: the impact on household incomes would be as follows: the income of non poor male headed rural households would increase by 50 units, for rural non poor female headed households would increase by 16 units and for the rural ultra poor female headed housed holds by only 6 units. For the urban households, this would translate to an increase of 0.2 units for the ultra poor female headed households, 0.7 units for the ultra poor male and 21 units for the non poor male headed households. *(see row 8 in table 2.3)*
- ***Increase in public health investment by 100 units***: for the rural households this would translate to an increase of **4 units** in the incomes of ultra poor female-headed households, **14 units** for the non-poor female headed and **51 units** for the **non-poor male-headed** households. For the urban households the external injection would increase the income of the ultra poor female-headed household by **0.4 units**, for the **non-poor female** by **5 units** and for the **non-poor male**-headed households by **36 units**.

Chart 1 summarizes the differential impact of public

interventions in health education and agricultural services.

Chart1 Household Income Multipliers from Investment in Health, Education & Agriculture.



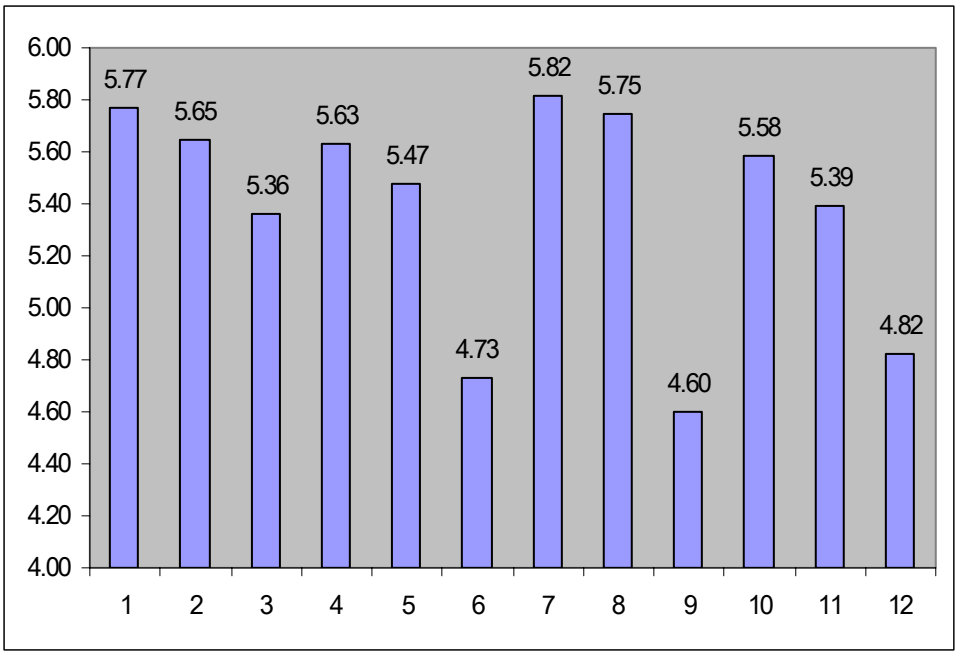
1. Rural Female ultra poor
2. Rural female poor
3. Rural female non poor
4. Rural male ultra poor
5. Rural male poor
6. Rural male non poor
7. Urban Female ultra poor
8. Urban female poor
9. Urban female non poor
10. Urban male ultra poor
11. Urban male poor
12. Urban male non poor

Source: Constructed from table 2.3.

The table shows that the income multipliers are skewed in favor of high-income households. An important fact to bear in mind is that this reflects the 2001 economic conditions before the introduction of free primary education that might explain the low education multipliers, during this period enrollment rates were declining. The skewed nature of the multipliers might be used to build a case for more targeted interventions, rather than universal provision. However, targeting is highly controversial and difficult to implement policy but worth considering, it might be a good option for reducing the estimated cost.

Targeted Interventions: One way to analyze the impact of targeted interventions is to trace the impact, on the rest of the economy, of a transfer of 100 units from the government to a socio-economic group. The gross output multipliers are presented in chart 2.

Chart 2. Gross output Multipliers$_{250}$ from Targeted Transfers



1. Rural Female ultra poor
2. Rural female poor
3. Rural female non poor
4. Rural male ultra poor
5. Rural male poor
6. Rural male non poor
7. Urban Female ultra poor
8. Urban female poor
9. Urban female non poor
10. Urban male ultra poor
11. Urban male poor
12. Urban male non poor

The GDP multipliers closely mimic the gross output multipliers and are therefore not presented here. The chart shows that a transfer of 100 units from the government (e.g. in the form of a bursary or fertilizer subsidy) to an urban ultra poor female-headed household has the greatest potential for spurring economic activity. Such a transfer to the rural ultra poor female headed household increases the production of maize by 49 units compared to an increase of 19 units when the same transfer is targeted to the urban non poor male headed household (see table 2.3 row I column 1 and column 12 respectively).

From the foregoing analysis it is evident that the same level of government intervention can achieve completely different outcomes and the total cost can be significantly reduced if the multipliers from different activities are used as the basis for prioritization.

V. Conclusion

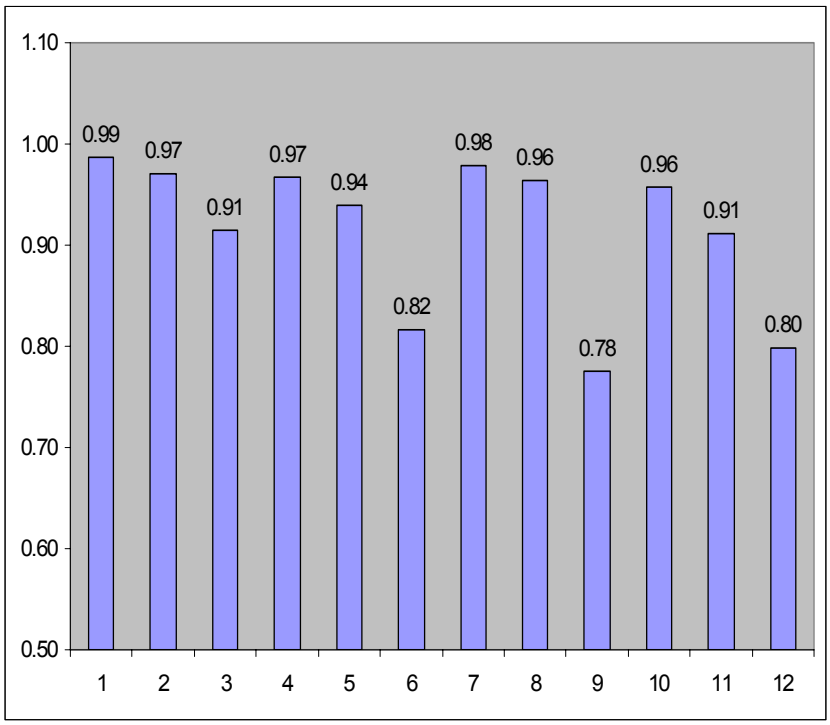
The assessment of the cost requirements to meet MDGs is dogged with many methodological challenges. The key challenges relate to the need to take into account the inter-relationships between the MDGs targets and therefore the cost implications. Different delivery mechanisms and policy environments imply different cost structures. Over an extended period of time, structural changes are likely to take place in251 an economy. Projected resource

requirements that do not take into account such possible changes are likely to be unrealistic. This report has analyzed the macroeconomic implications of the estimated costs and comes to a conclusion that all financing cannot be accommodated without serious macroeconomic instability. The feasible macroeconomic framework allows for the absorption of only about 7 percent of the estimated annual cost in 2005 but increasing over time.

This report has also discussed at length some of the synergies that exist between the different targets. The implication is since resources are scarce and the economy cannot absorb all the MDG resources, there is need to think seriously as to how the synergies can be exploited in a strategic framework to meet the MDGs. An analysis of some of the synergies reveals the potential to achieve the goals in an indirect way through interventions say in agriculture, rather than focusing purely on the each target alone. The analysis also indicates that targeted interventions may be considered, taking into account the difficulties usually associated with targeting.

Generally, despite the methodological challenges involved in the establishment of the MDGs resource requirements, the costing provides a framework through which the International Development Goals can be aligned and integrated into the national planning and budgetary process. In this regard, it is advisable to prepare clear set targets (short-medium term) with the resource requirements in line with the MDGs for inclusion in the national budget process.

Figure 2. Share of Expenditure in Total Household Income



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