



**Ethiopia: The Millennium Development Goals (MDGs) Needs Assessment
Synthesis Report**

**Development Planning and Research Department
Ministry of Finance and Economic Development
(MoFED)**

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List of Acronyms

ABEC	Alternative Basic Education Center
ADLI	Agricultural Development Led Industrialization

AIDS	Acquired Human Immunodeficiency Syndrome
ARI	Acute Respiratory Infections
ARV	
BAU	Business as Usual
CGE	Computable General Equilibrium
CSA	Central Statistical Authority
DA	Development Agents
DAG	Development Assistance Group
DPT	Diphtheria, Pertusis and Tetanus
EEPCO	Ethiopian Electric Power Cooperation
EOC	
ETC	Ethiopian Telecommunication Cooperation
FDI	Foreign Direct Investment
FHHs	
GDP	Gross Domestic Product
GER	Gross Enrolment Ratio
HAART	Highly Active Anti Retroviral Therapy
HEP	Health Extension Program
HICE	Household Income Consumption Expenditure
ICOR	Incremental Capita l- Output Ration
ICT	Information Communication Technology
IDA	International Development Agency
IMF	International Monetary Fund
JBAR	Joint Budget and Aid Review
JBS	Joint Budget Support
LSP	
MAMs	MAquette for MDGs Simulation) Model
MDGs	Millennium Development Goals
MEDaC	Ministry of Economic Development and Cooperation
MEFF	Macro Economic Fiscal Framework
MFI	Micro Finance Institutions
M&E	Monitoring and Evaluation
MoE	Ministry of Education
MoFED	Ministry of Finance and Economic Development
MoTI	Ministry of Trade and Industry
MoU	Memorandum of Understanding
NBI	Nile Basin Initiative
NGOs	Non-Governmental Organizations
NPL	Non-Performing Loan
OIs	
ORT	
PASDEP	A Plan for Accelerated and Sustained Development to End Poverty
PIP	Public Investment Program
PLWHA	People Living With HIV/AIDS
PMCTC	Prevention of Mother to Child Transmission
PRSP	Poverty Reduction Strategy Paper
SAM	Social Accountability Matrix
SDPRP	Sustainable Development Poverty Reduction Program
SMEs	Small and Medium Enterprises
SSA	Sub-Saharan Africa

STDs	Sexually Transmitted Diseases
TB	Tuberculosis
TBA s	
TEVT	Technical Vocational Education and Training
TFP	Total Factor Productivity
THP	Traditional Harmful Practices
TPR	Teacher Pupil Ratio
TTC	Teacher Training College
UNAIDS	United Nations AIDS
UNCT	United Nations Country Team
UNDP	United Nations Development Program
VAT	Value Added Tax
VCT	Voluntary Counselling and Testing
WAO	Women's Affairs Office
WATSAN	Water/Sanitation
WM	Welfare Monitoring
WMSP	Welfare Monitoring System Program
WMU	Welfare Monitoring Unit
WTO	World Trade Organization

Foreword

The Ethiopian Government has long subscribed to the goals of human development and poverty eradication as guiding principles for its development strategy and programs. By adopting the overall objective to reach the MDGs, we aim to follow the concrete and monitorable framework that they offer to guide our policies.

This Report represents the outcome of efforts over more than a year to quantify the needs of our country, to find practical and actionable solutions and to bring them together into an overall strategy. The combination of bottom-up and synthetic analysis we produced is quite unique and has shown how to translate the vision of the MDGs into practice. In these efforts, we have been guided by available best practices and support from our development partners, the Millennium Project, the United Nations Country Team (UNCT) in Addis Ababa and the World Bank. Not all of the efforts summarised in this Report have been easy to undertake. Issues such as planning the infrastructure expansion needed to support the MDG strategy, for example, raise questions, which even the most sophisticated modelling, cannot answer. Rather than eschewing the issue in this Report, we have adopted the bold solutions, which are necessary to sustain the shift to a higher growth path in Ethiopia. We, indeed, believe that reaching the MDGs require a new and different way of thinking, and that reaching the MDGs needs to pave the way for continued and sustained growth in our country.

This Report has the valuable role of reminding us all of the task ahead: refusing to proceed with business as usual and engaging in a new partnership to realise the promise of the MDGs to the millions of people in this country whose lives are blighted by deprivation. It is in this spirit of partnership and unity towards a common goal that I present it to you.

Sufian Ahmed
Minister
MoFED

Acknowledgments

This report provides an assessment of what it takes to meet the MDGs in Ethiopia.

The vision of Professor Jeffrey Sachs, and the technical assistance that he provided together with the team of the Millennium Project, have been essential to animate this effort and to shape its approach.

MOFED has produced this Report in collaboration with relevant line ministries/institutions based on detailed sectoral assessments conducted from August 2004 to October 2004. The close collaboration of all the partners involved in the conduct of the sectoral needs assessments is gratefully acknowledged. In particular, the contributions of the following sectoral ministries have been essential to this undertaking:

- a. The Ministry of Education;
- b. The Ministry of Agriculture and Rural Development;
- c. The Ministry of Health;
- d. The Ministry of Water Resources;
- e. The Ministry of Trade and Industry;
- f. The Ministry of Federal Affairs;
- g. The Ethiopian Road Authority;
- h. The National Office of Population (MOFED);

The synthesis report has built on these sectoral inputs and benefited from the leadership of H.E. Ato Mekonnen Manyazewal, State Minister of MOFED, and his Team headed by Ato Getachew Adem who is Head of the Development Planning and Research Department (MOFED) responsible for the overall coordination of the MDG Needs Assessment process and preparation of this Report. Support by the World Bank on technical aspects of the current analysis is gratefully acknowledged. Thanks are also due to the UNCT in Addis Ababa for facilitating the overall MDGs process in Ethiopia and also for contributing to the improvement of this Report.

Reaching the MDGs will require a partnership and collaboration among all the development partners, the civil society, the donor community, and the public at large. The donor community was involved in the task force created to steer the process. Among them, United Nations Development Program (UNDP) needs to be mentioned in particular for its support, and its coordination and leadership of the donors' engagement, particularly in the initial critical phase of the MDGs Needs Assessment process. Its financial support, particularly for the completion of sectoral MDGs needs assessment and subsequently this Synthesis is gratefully acknowledged.

Sufian Ahmed
Minister
MoFED

Introduction: Ethiopia's Commitment to the MDGs

“Urgent action is needed if we are to usher in a decade of bold ambition to achieve the Millennium Development Goals”, says the Millennium Project in concluding its *Investing in Development* Report on how the MDGs can be achieved globally and in each country. This call to action permeates the present effort to suggest an MDG strategy for Ethiopia. At the Millennium Summit held in 2000 a commitment was made by more than 147 heads of state “...to a common set of principles and targets that would bring all peoples to a minimum acceptable standard of development by the year 2015”. Such commitment, enshrined in the adoption of 8 goals (box 0.1) and 18 targets, is now called into question by the inadequate progress made globally over the last five years.

Box 0.1: MDGs at a Glance

- Eradicate extreme poverty and hunger by 2015
- Achieve universal primary education by 2015
- Promote gender equality and empower women
- Reduce child mortality
- Improve maternal health
- Combat HIV/AIDS, malaria and other diseases
- Ensure environmental sustainability
- Develop a global partnership for development

Scaling up investments in service delivery, strengthening capacity and improving infrastructure within a coherent framework aimed at rapid progress are Ethiopia's planned response to that commitment. It is with this objective that the MDG needs assessment process was launched in July 2004. A task force, led by MoFED, was created to steer the process, comprising the heads of the technical staff of the line ministries and representatives from the UNCT, the World Bank and bilateral donors. Nine sectoral reports, requiring detailed strategy and resource assessments, aimed to build the strategy bottom-up. The analysis produced by each sector was based on the review of relevant documents and existing sectoral strategies and has been informed as appropriate by other MDGs need assessment such as the country case studies conducted by the Millennium Development Project in Uganda and Tanzania. Working groups, brainstorming sessions, and informal interviews have been used to identify the pertinent interventions. The scale of interventions needed to reach the MDGs or to favour their achievement (in the case of sectors for which no direct MDG target had been set) has then been determined, and the sectoral plan has then been costed.

This synthesis report represents the culmination of this process of technical analysis and dialogue among the various stakeholder involved. The report reviews and consolidates the results of the sectoral assessments into an overall investment plan, building from the original sectoral estimates and considering the potential synergies that can be reaped between different types of interventions. The macro-economic and systemic effects of the plans are then presented, focusing on alternative scenarios for financing and on different assumptions on government

efficiency and synergies. Finally, monitoring and evaluation system, which will allow to track progress towards the MDG, is presented.

The growth strategy that underlies the report remains the Agricultural Development Led Industrialization (ADLI), as articulated in the existing SDPRP (Ethiopia's first Poverty Reduction Strategy Paper (PRSP), the Sustainable Development and Poverty Reduction Program). The ADLI strategy is being complemented by the Government's on-going efforts to expand infrastructure (roads, telecom and power, etc.), strengthen urban development and to address possible bottlenecks, which might emerge from the scaling up (e.g. through increased demand for skilled workers in service delivery and through increased pressure on local capacity). Structural and institutional reforms to enable the private sector to respond to improved infrastructure provision and heavy investment in human capital need also to be introduced. Further, the positive feedbacks on growth that will be generated by progressive achievement of the MDGs over the medium term need to be integrated in an overall growth strategy, and priority areas of intervention for the following decade need to be identified, if the planned efforts cannot all be undertaken within this time frame.

The structure of this report is as follows: Chapter I review the case of scaling up, highlighting the seriousness of the challenge as well as the policy efforts to increase pro-poor spending and the efficiency of delivery. Chapter II reviews the emerging growth agenda in light of Ethiopia's recent growth performance and the risks and opportunities ahead. Chapter III summarises the sectoral reports, highlighting the situation in terms of key MDG indicators, the main issues, which need to be addressed, the priorities for action and the costs for sectoral interventions. Chapter IV builds on the sectoral assessment, identifying the overall resource envelope and sketching the macroeconomic consequences of following the sectoral plans. Chapter V describes the possible monitoring and evaluation system that would track inputs, outputs, outcomes as well as impacts and describes the process to arrive at an efficient implementation of the Ethiopian MDGs strategy/Plan. The last Chapter, Chapter VI, articulates the conclusion and the way forward.

Chapter I: Ethiopia and the MDGs: Sound Foundations for Scaling up

The fight by the Government of Ethiopia against poverty in its many dimensions started well before work was undertaken to produce an MDG strategy, as reflected for example in the 2002 SDPRP, which states that *Poverty reduction is the core objective of the Ethiopian government* (page 36). The SDPRP includes among its main components rapid growth in the agricultural sector and a focus on achieving food security; major investments in education and capacity building; and improved governance and empowerment of the poor. The SDPRP is currently in its last year of implementation. The MDG strategy presented in this report will be a central element of the **Plan for Accelerated and Sustained Development to End Poverty (PASDEP)**, anchoring development objectives directly to a longer-term strategy for achieving the MDGs.

This chapter will detail how the need for scaling up to accelerate progress is urgent (section 1.1), while there are sound basis for scaling-up (section 1.2). Finally it will also detail how the present effort at elaborating an MDG strategy for the next decade will be integrated with the PASDEP process (section 1.3).

1.1. The need for scaling-up is urgent

Despite Ethiopia's commitment to poverty reduction, and the efforts so far, poverty is deep rooted. Table 1.1 below contrasts the recent performance on a sub-set of MDG indicators. Despite remarkable efforts towards universal education, gender equality and women empowerment, reducing child mortality and improving maternal health, fighting against HIV/AIDS, malaria and other diseases, it is clear that more needs to be done if Ethiopia is not to miss its chance to reach the targets it has set for itself. Larger amounts of physical and financial resources and capacity will be needed for the task. Commitment from the international community and the national and international civil society is needed to complement the government's and Ethiopian people's efforts. As the Blair Commission stated "*With continued progress, prospects for a significant ramping up in aid levels [to Ethiopia] seem possible, and indeed would be desirable if a serious efforts is to be made at reaching the MDGs* (p. 335).

Table 1.1: Required Rates of Change and Recent Trends to Meet Selected MDGs

	Trends Since the Mid 1990's (% p.a.)	Trends During 2000 -2005 (% p.a.)	Required rate of change To reach MDG (% p.a.)
Poverty head count rate	-0.73	-2.5	-3.8
Food poverty head count index	-2.4	-3.4	-3.2
Gross primary enrolment rates	12.4	5.0	3.8
Under five child mortality	-1.0	?	-7.0
Access to clean water	1.0	6.5	6.5

Source: World Bank, 2005(b)

1.2. A credible commitment rooted in sustained policy efforts

The Millennium Project global report underscores how serious are Ethiopia's commitment to the MDGs defining it "credible and ambitious". Such a commitment is rooted in its continuity with the ongoing policy efforts laid out in the PASDEP – a strategy that has poverty reduction as its core objective. Further, while capacity building is needed and monitoring and evaluation

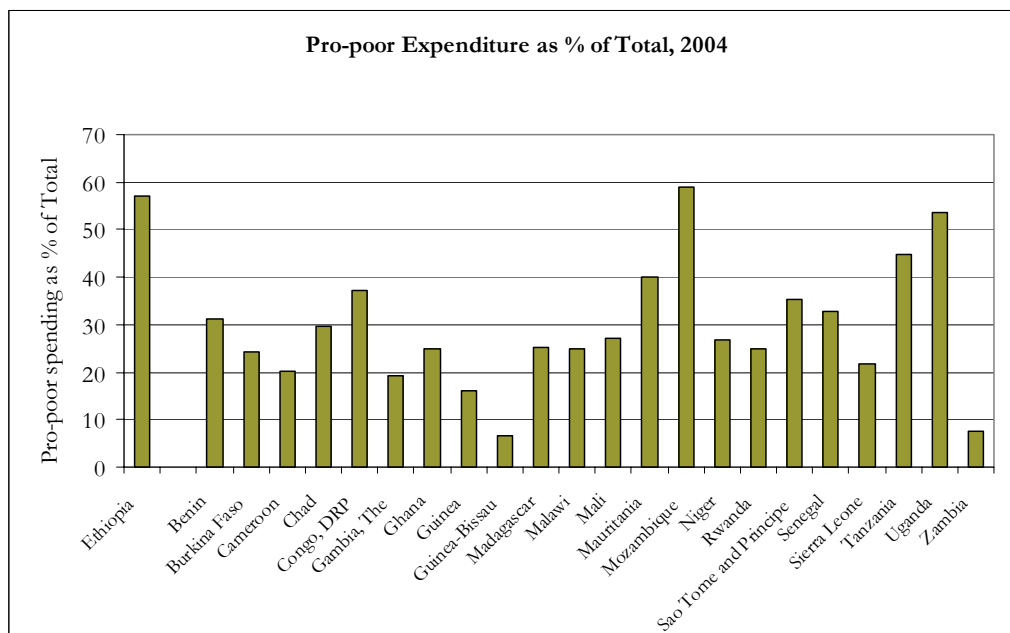
system need to be strengthened, several policy developments are contributing to increasing the efficiency of delivery:

- a well-functioning budget process is in place and priority is given to pro-poor expenditure (section 1.2.1),
- The recent increase in aid through budget support following the end of the border conflict has shown the positive effects of increasing donor coordination (section 1.2.2),
- The ongoing process of decentralization offers a sound basis for social mobilization and devolving implementation to the local level (section 1.2.3), while
- Coordination in public investment planning is ensured by the Public Investment Plan (section 1.2.4).

1.2.1. Pro-poor budgets

Since 1991 Ethiopia has given priority to raising domestic revenue and increasing the allocation of expenditure in favour of pro-poor sectors, both at the national and sub national level. Comparisons with other African countries for which data are available show indeed that Ethiopia is one of the top-performers in terms of pro-poor expenditures (Figure 1.1)

Figure 1.1.

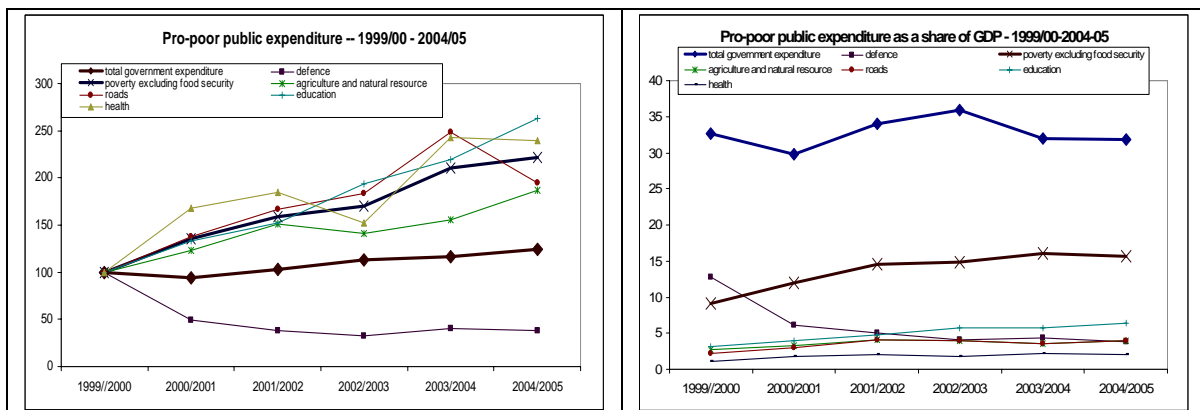


Source: International Monetary Fund (IMF). Note the definition of “pro-poor” is based on the priorities declared in the country’s PRSPs

Ethiopia’s ongoing commitment to poverty reduction and human development has manifested itself in substantial increases of pro-poor expenditure since 1999/2000 both in real terms and as a share of GDP. As figure 1.2 show this is true for each of the broad categories of key social and economic development spending programs over the period as a whole. The figures also show a significant real decline in defence spending – now it is only 38 percent of the level in 2000. According to the 2004/05 budget, substantial absolute increases in pro-poor spending continue

rising to 18.3% of Gross Domestic Product (GDP). Further increases are revealed as indicated in the recent Macro Economic Fiscal Framework (MEFF) (2005/06 to 2007/08) which foresees poverty-targeted spending rising from 61% in the fiscal year 2004/05 to 71% by the fiscal year 2007/08.

Figure 1.2. Index of Real Government Expenditure & Share in percent of GDP



International evidence shows that basic service provision tends to be more pro-poor than other types of sectoral expenditure. This depends both on the type of services provided and the effective use that households in different income groups make of a given service. In the Ethiopian case, sectoral evidence on the distribution of benefits is limited. Comparing Ethiopia's educational sector distributional performance to both a sample of 10 African countries and one of 18 other developing countries shows in both cases that it is more progressive than about half of the sample – yet there is space for improvement (World Bank 2005, a). In Ethiopia the bottom quintile of the population gets 20% of the resources spent on primary, but only 3% of those spent on higher education. Looking forward, it can be expected that focusing on primary education will continue being very pro-poor, as expanding primary education is likely to reach poor people who were not previously benefiting and more likely to drop out.

The efforts at keeping the emphasis on pro-poor expenditure face obvious constraints in the national resource base. Domestic resources are mobilized mostly through taxation rising from around 16 % of GDP to about 20% of GDP in the last year. It is expected that domestic revenue mobilisation will increase as ongoing efforts to implement tax and institutional reforms start paying-off.¹ This will not happen, however, at the expense of pro-poor policies. This has been the case, for example, of the coffee export tax, abolished in 2002 after a negative price shock, in order to boost supply and protect poor people's incomes. Domestic borrowing is also projected to increase over the medium term as long as macro economic stability is not compromised.

1.2.2. The Role of Development Partners

External financing has been stable at around 12% of GDP. Net aid per capita is however much lower than in other countries in Africa – Ethiopia currently received 13 dollar per capita, against the 28 dollars average of Sub-Saharan Africa, 35 dollars of Tanzania, 44 of Rwanda and 112 of

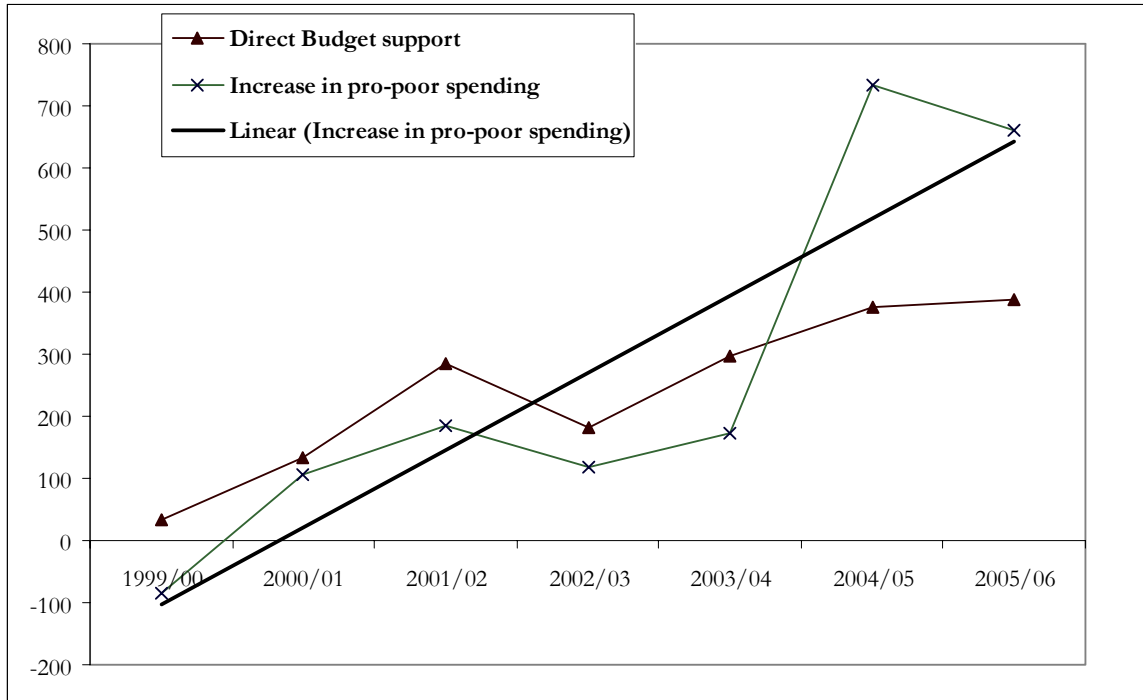
¹ These include reforms in Value Added Tax (VAT) administration, automating service delivery in all revenue collecting institutions, and strengthening tax compliance enforcement mechanisms

Mozambique.² On this basis, as well as considering the scale of the country’s needs, its stable macro-economy and the apparent lack of adverse effects on competitiveness of large aid inflows (the so-called “Dutch Disease”), the Blair Commission and the UN Millennium Project suggested that there is ample room for increasing flows.

The on-going Capacity Building Program and Civil Service Reform will support these efforts by enhancing implementation and absorptive capacity.

An important recent development is the steady progress made by donors in harmonizing their lending plans and support to the Government. Three notable areas where this has taken place are budgetary support, the overhauling of the system of food aid in kind and assistance for capacity building. Budget support is a key area in which progress has been made, with two rounds of financing completed over the last two years. The number of partners providing direct budget support as well as the total amount of resources provided through this instrument has increased over time. Improvements have been made on predictability of budget support (with 57% of indicative commitments disbursed within the first two quarters of 2005 compared to 11% in 2006). There is, however, still a long way to go in aligning disbursements to the Government budget cycle and also not much progress in harmonizing or lowering transaction costs in non-budget support forms of assistance. Figure 1.3 below illustrates how budget support is contributing to sustain the Government’s increase in pro-poor spending.

Figure 1.3: Donor budget support and pro-poor spending in Ethiopia 1999/00 – 2007/08



Government and partners have agreed on the key due diligence mechanisms that provide information to development partners on the progress of implementation. These are the Joint Budget and Aid Review (JBAR), fiduciary assessments, implementation of the SDPRP Monitoring and Evaluation (M&E) Action Plan, and reports from the GOE-DAG sector review/coordination groups that exist in the SDPRP Structures. The Joint Budget Support (JBS)

² These data, which are the latest available, refer to 2002 and might therefore be influenced by a process of gradual built up in donor support following the war.

has now stabilized into a cycle of two missions per year carried out jointly by development partners, aligned with the Government's budget and sector review cycles, and benefiting from the year-round policy and implementation engagement that takes place.

1.2.3. Decentralization and Increased Efficiency for Service Delivery

Decentralization of government decision-making, the transfer of fiscal responsibility to the local levels and improved governance are central elements of the SDPRP. The stated objectives of decentralization were: to improve the quality of government and service delivery and to empower local communities to take more responsibility for determining their priorities and recognizing the rich diversity of the country. Since 2001 between 40 and 60% of all government revenues have been transferred to the local level, together with full responsibility for managing social services and increasing shares of capital investment. These efforts seem to pay off: since decentralization efforts began, significant improvements have been registered in terms of gross enrolment, and access to health services and clean water.

The process of decentralization is ongoing and will be significantly reinforced by the planned three-fold increase in the regional subsidy for the next fiscal year. Work is ongoing on fine-tuning the block-grant formula used to allocate resources to the regions, and further improvements in the progressive nature of the transfers are possible. The allocations are determined mainly with reference to the developmental needs of the various regions and to population level, aiming to strike a balance between the needs in terms of recurrent costs of delivering services to larger populations and alleviating the greatest needs. The on-going effort to bridge capacity gaps at the local level (woreda level) would help enhance absorption capacity at the regional and sub regional level.

1.2.4. Public Investment Planning

Effective scaling up requires a good system to plan public investment and to coordinate between policies, plan and budget. The overall responsibility for ensuring the coherence of Ethiopia's MDGs investment plan is with MOFED, which elaborates the Public Investment Program (PIP) – a three-year rolling plan of investment by federal public bodies, updated annually. The PIP focuses on the planning of capital expenditure by Federal public bodies and consists of two elements:

- A macroeconomic policy and fiscal framework,³ which forecasts over a three year period GDP, aggregate revenue and expenditure, the split of aggregate expenditure between Federal and Regional level, the split of Federal expenditure between capital and recurrent and the sectoral allocation of capital expenditures amongst the Federal public bodies. The macro-economic and fiscal framework also identifies resource constraints and establishes investment target for each public body.
- A three-year public investment program prepared by the public bodies at federal level based on their indicative planning figure (an indication by MOFED of the resources that will be available from federal government sources for capital investment). Public bodies conduct this investment program in line with objectives, targeted outputs in the strategic plan and investment targets. They also prepare investment plan for programs and projects.

³ This is now being prepared using the EPPD-MOFED Macro Model (EMM) for budget preparation, forecasting and policy analysis

The PIP provides a good framework for coordination at several levels: it provides information on sources of financing for future expenditure helping to improve aid management; it enables the government to be more proactive in directing donor funding towards sectors, program and projects in line with its overall investment priorities and needs; it anchors public bodies' forecasts of capital expenditures to the funding available in the capital budget.

The financial calendar, which has been effective since 2004 needs to be further strengthened and adopted by Regional State and *woredas*. While devoted to capital investment, the PIP needs to take into consideration also the availability of appropriate recurrent resources for operation and maintenance, particularly as the stock of infrastructure grows. The ongoing process of decentralization and the expectations of high capital expenditure at the regional level mean that ways of ensuring the coherence of regional expenditure while respecting local priorities need to be devised. Further, closer linkages need to be built between the formulation of the macro-fiscal framework and the identification of a growth strategy. Furthermore, MOFED's involvement needs to go beyond the selection of projects to be financed towards actual examination of how they are appraised on the ground. National guidelines for project appraisal have been issued in 2004 for effective monitoring of development projects and programs.

1.3. Integrating the MDGs Strategy in the SDPRP process

The MDGs Needs Assessment Methodology Paper (Millennium Project, 2004) suggests that low-income country Governments follow three stage-planning processes to align their respective domestic policies strategies and programs with the MDGs.

The first stage is the conduct of a needs assessment that compares its current situation with MDGs targets and thereby identifies the combination of public investments that would enable the country to meet the MDGs by 2015. The second stage of the planning process is the formulation of a long-term policy plan for achieving the MDGs building up on the results of the MDGs needs assessment. The present report presents the results of these two stages. The third stage in the planning process is for each country to formulate its medium term (3 to 5 years) PRSP based on the long-term plan.

In the case of Ethiopia, the third year (2004/05) of implementation of the first SDPRP (2002/03-2004/05) has just been completed. The policies, strategies and programs upon which the SDPRP I is built⁴ are still going to be relevant for the time-span of PASDEP and even beyond. The time horizon of PASDEP is going to be five years (2005/06-2009/10). Ethiopia's second PRSP needs to link several things to the MDGs in a meaningful way. It needs clear actions aimed at achieving the MDGs by the 2015 timeline. It needs to ensure that targets are ambitious enough and that key parts of the population are reached and recognize fully the multidimensional nature of poverty and the interdependence of sector policies. It needs to address the challenges of strengthening governance and institutional capacity. For the PASDEP to be implemented in an MDG perspective, its content needs to be an extract of the fully-fledged Ten Year MDGs Plan.

Annex Table 1.1 articulates physical targets for the MDGs timeline (up to 2014/15) and for the middle year of the MDGs plan (2009/10) which corresponds to the last year of PASDEP period (2005/06 to 2009/10).

⁴ The 4 pillars on which the SDPRP rests are the Rural Development Policies and Strategies (ADLI), Decentralization and Empowerment, Capacity Building for both Public and Private Sector, and Justice System and Civil Service Reform.

Chapter II: Towards a Growth Strategy for Sustainable Development and Achieving the MDGs

Ethiopia, as one of the pilot MDG countries, has chosen to take a holistic approach to developing an MDG strategy, including the careful consideration of economy-wide factors and cross-intervention synergies. This chapter discusses the role of growth in such a strategy building on the extensive analysis that has been done in this area. The first section looks at what has been learnt about the sources of growth and Ethiopia's growth potential. The second section summarises what has been learnt from one of MOFED long-term growth studies (MOFED, 2004) in terms of overall strategic direction. This overall view is complemented by section 2.3, which delineates what has been learnt about the challenges that Ethiopia faces in moving to a sustainable growth rate compatible with reaching the MDGs, and identifies area of emerging policy consensus. Finally, the last section summarises the evidence and lists important issues for the growth agenda on which not enough is known. Further work in these areas will help fine tuning the plan for Ethiopia's MDG strategy.

2.1. Understanding past growth performance to plan for the future

Without sustainable and accelerated growth Ethiopia's goal of reaching the MDGs and more generally fostering human development cannot be achieved. This is particularly relevant for reaching Goal 1 of halving the poverty rate by 2015, but substantially impacts all other MDGs as growth provides the individual, household and public resources that bring about sustainable progress in terms of poverty reduction and more generally on development. At the same time, the pursuit of the MDGs needs to be put within a solid macroeconomic framework capable of ensuring a sustainable growth path.⁵ Within the context of identifying a MDG growth strategy, it is essential to understand the sources of past growth, and its variability to determine the future potential. As highlighted in MOFED's Long-term Strategy Study (MOFED, 2004) such an understanding also helps estimating the feedback effects of reaching the MDGs on growth, via the impact on Total Factor Productivity (TFP).

As the MOFED study on sources of growth shows (MOFED, 2004), growth trends since 1991 have been positive. Annual overall GDP growth has been averaging about 5 percent over the period 1992/93 to 2003/04⁶ resulting in a per capita growth of approximately 2.3 percent per year. Most of this (about 1.1 percentage points) can be attributed to policy changes and public investments, which boosted total factor productivity, while the rest is probably "catch-up" growth following a long period of conflict. Despite this positive performance sustained population growth and modest progress in reducing poverty have continued to be a concern in the translation of growth into human development. It is clear that Ethiopia needs to shift to a much higher growth path from the one it has been following so far to realize its objective of reaching the MDGs.

According to MOFED's analysis, the average GDP growth recorded by East Asian countries was 8%. Ethiopia can attain and sustain this level of GDP growth rate. Key drivers of such growth are rate of accumulation and the Incremental Capital-Output Ratio (ICOR) associated with that accumulation. Complementary to such accumulation is the acquisition of more

⁵ This last issue of how substantial scaling up can be absorbed without bringing about macroeconomic stability will be discussed in chapter 4 when assessing the concrete strategies elaborated through sectoral assessments.

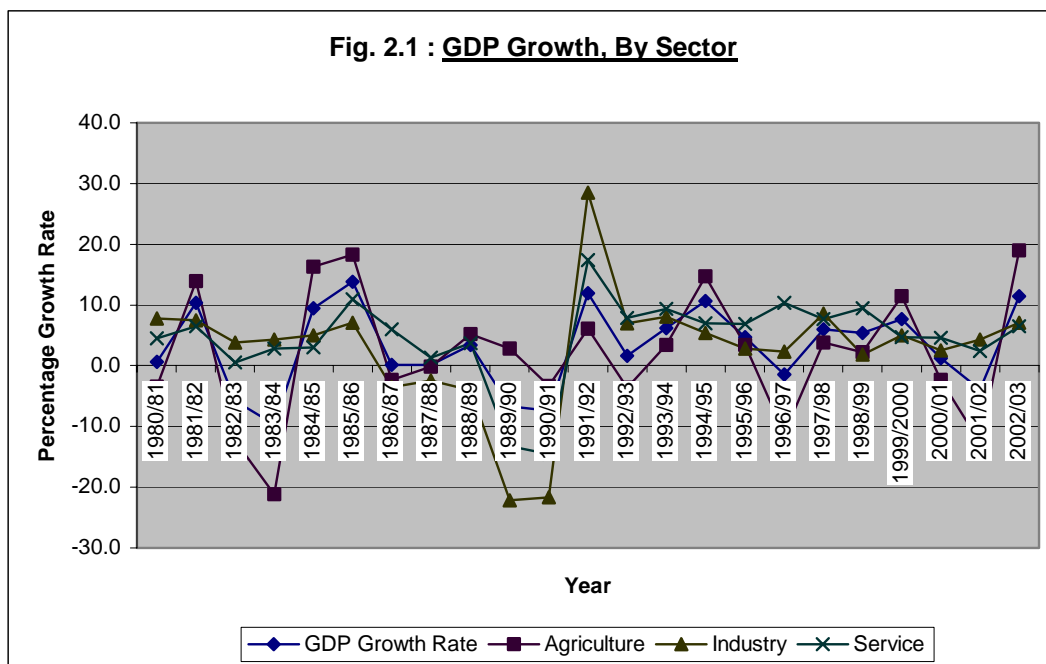
⁶ 3.4% from 1990/91 to 2003/04

advanced technology and raising the skills of the labour force. Nevertheless, external conditions, and particularly export demand, are likely to be considerably less favourable for Ethiopia than those during the rapid growth period of the so-called Asian miracles, at least in the short and medium term. Achieving Ethiopia's sustainable growth rate will involve therefore enhanced implementation policies and strategies to achieve that rate, and policies to minimise downward deviations from that rate.

2.1.1. The Volatility of Growth

The major sources of such instability relate to external shocks: analysis by MOFED shows that rainfall variability is the key variable in explaining variability in growth, as a major share of the economy depends from rain-fed agriculture. Terms of trade movement and changes in real exchange rate were also significant in explaining growth variability. Other factors that contributed to macro instability included the unpredictability of external resource inflows and regional security. In contrast, domestic policies have emphasized the centrality of macro stability pursuing low inflation, sensible public deficit and debt profile, sustainable balance of payment and prudential monetary policy, including a healthy banking sector to achieve the long-term objective of reducing poverty (MOFED, 2002).

The volatility of growth in Ethiopia (despite an overall relatively good performance) is depicted in Figure 2.1 below.



Historically, inappropriate policies and institution also contributed to a poor growth performance. Good institutions and in particular good governance are needed also to minimize the detrimental impact of shocks. To maintain the momentum, efforts will continue in the implementation of on-going capacity building programs through Government's on-going effort aimed at enhancing the efficiency of the civil service by introducing sets of reforms and enacting fiscal and administrative decentralization that improve public resource use, accountability and efficient delivery of basic services that are vital for the socio-economic transformation of the country.

2.1.2. Target growth rates to meet Goal 1 of the MDGs

Current estimates suggest that reaching Goal 1 by growth alone would require rates between 6 and 7 percent a year. Even higher growth rates might be needed, depending on the composition of growth itself. If growth were accompanied by greater inequality, it would reduce the elasticity of poverty reduction with respect to growth. Furthermore, the high volatility of growth might require higher growth rates to remedy the setbacks in terms of physical and human assets that result from income shocks, and to ensure that the households which have been raised from poverty due to increased growth do not slip back into poverty. Microeconomic evidence shows that growth variability could be related to transitory component of poverty, which is extremely high (15 to 20 percentage points of total poverty) in Ethiopia⁷. Ensuring sustained growth and tackling growth variability is therefore central to realize MDGs in general and Goal 1 in particular.

2.2. An Overall Strategic Direction to Foster Growth

Over the last couple of years MOFED has conducted a number of long run growth studies to analyse the sources of growth and the structural constraints that Ethiopia faces. Particularly relevant to think strategically about the future is one study, which looked at Ethiopia's external balance and external financing (MOFED, 2004).

An examination of the external finance problems of the country revealed that, thanks to the recent debt cancellation, Ethiopia's debt burden might not be a binding constraint to achieve a sustainable external balance required to realize the MDGs in the short to medium term. On the contrary, most countries would consider the ratio of total debt service to exports, which averaged about 15 percent in recent years, quite manageable. However, this should not be interpreted as implying that further debt relief is not necessary. Reducing debt service would help free up resources to be used to finance public investment, which in itself would help enhance the rate of economic growth central towards realizing Goal 1 of the MDGs.

The binding constraint on the external sector seems to be the increasing level of the trade deficit, at almost 17 percent of GDP in recent years. The central policy challenge presented by the external account is how to reduce the trade deficit to around ten percent (which is believed to be sustainable given the recent export performance and import demand of the country). In the Ethiopian context, a trade deficit substantially above ten percent, if not covered by sustained and predictable non-debt flows, is unlikely to be sustained in the medium term. If the trade deficit were not reduced, and covered by external resources, other things remaining the same, it would result in the repeated need for debt reduction. In other words, debt reduction alone would not create a sustainable external balance.

Using a numerical model, various scenarios that may allow Ethiopia to move from its present stability-threatening trade deficit (external imbalance) to one that would be consistent with sustainable and robust growth have been created.⁸ The major conclusions reached by the detailed examination of various scenarios were the following, among others:

⁷ Note that a reduction of the transitory component of poverty related to shocks (such as growth variability), would amount to nearly realizing goal one of the MDGs.

⁸ The key elements of these scenarios are the following: average growth target of 7 percent or higher; reducing the trade deficit to about ten percent of GDP; total debt service not greater than twenty percent of exports (which proves a non-binding condition); and a maximum feasible ratio of exports to GDP, which in African set-up is estimated to be about 50%.

- a) Ethiopia's economy cannot grow rapidly and reach a sustainable trade deficit without strong interventionist policies. Leaving adjustment to market forces would at most in a marginal closure of the deficit at high growth rates. This marginal improvement would be insufficient to prevent a crisis resulting from reduction of foreign exchange reserves lower than the import requirements. At that point, the government would have no choice but to enter into a severe stabilization programme, in which the trade deficit would be reduced through contraction of the economy, a scenario familiar to many African and Latin American countries. Non-interventionist policies, perhaps appropriate when marginal adjustments are sufficient, are not by their nature sufficient to resolve extreme problems of the kind that Ethiopia has faced. Were Ethiopia to enjoy a *ex machina* dramatic increase in exports resulting, for example, from discovery and exploitation of major mineral or petroleum endowments, it is unlikely that the government would receive sufficient concessional aid to cover the trade deficit until these exports reached high levels.
- b) Achieving an extremely rapid export growth for the medium term, of the kind to which on-going effort in export promotion through Government's Industrial Development Strategy aim, the external account would be rendered sustainable. At that point, heavy intervention could be relaxed, which would be a practical necessity, since the economy would be close to its maximum ratio of tradable to non-tradable.
- c) A growth strategy based on increased foreign borrowing, increased remittances, and fostering foreign investment, which used to have been non-viable before due to the trade deficit, would then become feasible. This potentially provides an exit from Ethiopia's current dilemma, and a path to sustainable rapid growth. Once out of the rapid export growth phase, government policy emphasis would shift from export incentives to investment incentives as priority. During the phase of rapid exports, investment would be constrained by its import requirements. Once a sustainable trade gap was achieved, increasing investment would become feasible. Thus, GDP growth could increase, and the upper range of government growth targets might be feasible.

In sum, interventionist policies, rapid export growth and aggressive mobilization of domestic and external resources are the only way to exit from an unsustainable investment-saving gap and the severe trade imbalance which in turn is a recipe for potential external balance crisis. This could lead to macroeconomic instability with its detrimental impact on growth, which in turn would frustrate the objective of realizing the MDGs in general and Goal 1 in particular.

2.3. Scaling up to Shift to a New Growth Path

More detailed analysis can help identifying the nature of the interventionist policies required to boost growth and exports in Ethiopia. This identification starts by realising the nature of the daunting growth challenges facing Ethiopia today: the dynamics of population growth, very low productivity, structural bottlenecks, and low infrastructure etc. pose challenges almost unequalled anywhere in the world. Government efforts to accelerate progress as rapidly as possible – including a big push on education, expanding infrastructure, opening the economy, building institutions, and devolving administrations– are like those of an athlete running uphill: extra-efforts are required just to keep the pace. Efforts are also needed to manage continuing food security pressures, and those of a volatile external and regional environment, therefore compounding the challenges of accelerating progress.

The different mechanisms hindering Ethiopia's growth are not independent, but rather interact with each other and constitute what can be seen as "poverty traps" – self-reinforcing mechanisms that prevent the country from breaking out from a combination of low income levels, high population growth, low productivity growth and declining resource base (see box 2.1.).

Box 2.1. Poverty traps in Ethiopia

Several poverty traps can be identified. A crucial mechanism, which has perpetuated poverty in Ethiopia, is the interaction of poverty **population** pressures with **environmental fragility**. High population pressures and decreasing plot size (average landholdings declined from 0.5 hectares per person in the 1960s to 0.11 in 1999) make some traditional farming practices land degrading, rendering an increasing number of households dependent on inadequately small and unproductive plots and subject to the vagaries of unpredictable rainfall. Several vicious circles by which land is progressively degraded can be identified. Households are too poor to leave land fallow or invest in it, leading to a progressive deterioration of their asset based. As a result of this declining asset base, soil nutrient depletion and environmental degradation appear to exceed the nutrient replacement by chemical fertilizers in recent years. Extensification through deforestation and into marginal lands reduce low productivity as well as making the environment more fragile. Uncontrolled grazing and feeding livestock with crop residue, together to reliance on dung for heating rather than for fertilizing the soil, contribute to soil depletion. The high-risk environment, poverty and insecurity on land tenure limit the adoption of new technologies by food insecure households for whom crop failure holds disastrous consequences.

Poverty and **low investment in human capital** present another type of self-perpetuating dynamic. Poor households often depend on the economic contribution of all their members, especially since low levels of access to services make activities such as collecting wood or water very time consuming. In such a context investing in education can be prohibitive, due to the foregone income, which would have been earned by the child student as well as to direct costs. Even where returns to education are very high, the inability to finance that initial investment, particularly as poor households are credit constrained and have low saving rates, means that there is underinvestment in education. Thus, without significant increases in productivity it is difficult for capital to be accumulated, so that returns to unskilled labour are unlikely to grow. Poverty and low education, therefore, reproduce themselves in future generations. Nutrition offers a similar story, with malnutrition hindering, either directly or through increased morbidity, the earning potential of the household, thereby resulting in decreased prospects for healthy and productive lives.

Low levels of **infrastructure** offer another example of perverse dynamics as they may result in underdeveloped markets, high transaction costs and coordination failures. The benefits of exchanges cannot be realized and the economy remains trapped in a largely subsistence oriented economic structure. Furthermore, without basic economic infrastructure, returns to private investment might be too low to spur dynamic investment. The effective potential of lowland areas is blighted by the prevalence of disease, which large-scale public health projects could address. In the rugged and difficult geography of Ethiopia, many remote areas might see their potential for dynamic private sector growth and diversification out of agriculture hindered by the lack of basic infrastructure. Telecommunications which in other countries has been linked to much greater knowledge about prices and markets, therefore empowering poor farmers in making their planting and selling decisions, could help break this isolation.

The consideration of these mechanisms underlines how difficult it is to break the cycle of poverty,. This is particularly so as these different mechanisms interact. For example, isolation by limiting trading opportunities reinforces reliance on agricultural activities and the accompanying environmental degradation.

Source: World Bank (2005, b)

As indicated, Ethiopia has adopted its ADLI as a growth model to overcome these challenges.⁹ By investing in Ethiopia's largest sector – agriculture – ADLI seeks to grow out of agriculture by

⁹ Weeks and Geda (2004), and World Bank (b, c) provide a comprehensive assessment of ADLI

diversifying and developing a manufacturing sector which can use more of the country's natural and human resources. An increase in agricultural productivity offers the initial spurt to growth; increased production leads to a fall in food prices, and thus a rise in the real wage of non-agricultural workers; this in turn leads to a rise in demand for other goods and services, and to increased profits, investments, and employment in the formal and informal (non-agricultural) sectors as the economy responds to increased demand primarily via an increase in domestic supply rather than imports. The strategy is therefore one of increasing the productivity of peasant farmers, promoting deeper linkages between agriculture and industry, accelerating private sector growth in the modern economy to create employment and incomes, and strengthening public institutions as the economy becomes more complex and there is more need for regulation rather than direct involvement in production.

Such a strategy is consistent with the findings of a SAM-based sectoral level growth analysis (Weeks and Geda 2004), which shows that the multiplier effect of agriculture is larger than the one of the industrial sector. The analysis also shows that there are significant sectoral interactions – agricultural growth appears to be dependent on the total multiplier effect of the industrial sector. In particular, food processing, textile and non-metal industries are found to have the highest linkages.

Agriculture will remain at the centre of the Government's development strategy, given that it constitutes the largest sector in the economy and has a key role in assuring the livelihoods of the vast majority of the population. The current emphasis on agriculture and particularly cereal production is essential to raising the real incomes of the majority of the population, as this is the major productive sector for the vast majority of the poor. Moreover, many poor households are net grain consumers and would thus benefit from lower grain prices. There is however space for expanding other non-traditional sectors (both agriculture and non-agriculture) to help spur faster growth. Growth in these sectors can help increase farmers' income and provide market demand for growth in food crops and livestock.

More investments will also support the implementation of ADLI to generate sufficient dynamism and ensure the needed growth and poverty reduction rates. The experience of the recent years has shown that poor market integration and lack of sufficient demand for labour in the non-food and non-agricultural sectors prevent improvements in agricultural productivity (particularly because they are largely driven by rainfall) from kick-starting virtuous cycles across the economy. To increase the effectiveness of ADLI investments are needed to favour linkages across the economy and in particular market connectivity, in the provision of productivity-enhancing and risk-reducing interventions to traditional agriculture, and support of the private sector's supply response. Such investments will therefore support a more balanced emphasis within agriculture (across crops), across sectors and across rural and urban areas. The development of economic activities in urban areas and the non-agricultural sector (in both rural and urban areas) can offer markets and sources of income growth for agriculture and for the rural population.

The call for scaling up the vision through the combination of reforms and integrated interventions resonates with the view –put forward among others by the Millennium Project (2005) – that in order to make a decisive break with the past and accelerate progress towards the MDGs Ethiopia needs to break free from “poverty traps”. The process of linking the growth and reform agenda with the objective of supporting and integrating the efforts to reach the MDGs in a context of “scaling up” is still ongoing – indeed this report is a first important contribution to it. Issues that have been raised include for example capacity building and hence

utilization in a context of ongoing decentralization, and the need to tackle uncertainty and risks at all levels (for farmers, for businesses and at the macro level).

There are, however, some important elements on which consensus is emerging and which can be seen as underpinning the elaboration of the overall MDG-growth strategy. These are the need for strengthening institutional reform, reinforcing the infrastructure backbone of the country and the increasing weight of the urban agenda. These are briefly discussed below, while a more detailed discussion of sectoral plans to progress on these three fronts will be discussed in chapter 3 under the appropriate sectoral headings.

Institutional reform to create a supportive environment for private initiatives: A recent review of the ADLI Strategy (Cramer et al 2004) underscored the importance of institutional reforms to remove the constraints to investment in agriculture. The ongoing land certification to ensure tenure security, civil service reform, and decentralization, capacity building programs and anti-corruption activities can contribute significantly to the process of restructuring public institutions. Such restructuring is essential to enable public institutions to address market failures appropriately, to help them cooperate and to nurture individual and collective initiatives (such as grassroots organizations) rather than replacing them, and to empower citizens. Another important aspect of institutional reform which has been highlighted in MOFED's Long Run Growth Study (MOFED, 2004) is mobilization of domestic saving (see box 2.2.)

Box 2.2: Strengthening Domestic Resource Mobilization

The state of domestic savings in Ethiopia is worrisome with an average level of saving of 6 percent of GDP at current market prices during the last decade. As the rate of gross domestic capital formation is on average in the range of 17 to 20 percent, the saving investment gap has been of more 10 percent of GDP. Although the public component of domestic saving has improved during the last decade save the conflict years of 1998/99 and 1999/2000, private saving has not improved by as much and needs to be stimulated in the years to come. One key problem identified through MOFED's Long-term Strategy Study is that the range of formal financial assets and available saving instruments to the private sector and individual households in particular in rural areas is still limited.

Thus to promote domestic savings in Ethiopia, a combination of measures targeted at different sources and instruments of savings (bank/Micro Finance Institutions (MFI) deposits, pensions/provident funds, insurance, international remittance, etc.) are needed. These calls for the following measures among others: strengthened implementation of the on-going tax reform, further improving the efficiency of tax administration, broadening the tax base (as the economy transforms from traditional to modern production systems), promoting private saving and investment, and social mobilization augmented by external finance in the context of scaling up, harmonization, and improved predictability as well as increased trade and Foreign Direct Investment (FDI). Strengthening effective partnership with NGO community is another critical area to be utilized to leverage domestic resource and capacity for sustainable development and poverty reduction and its ultimate eradication.

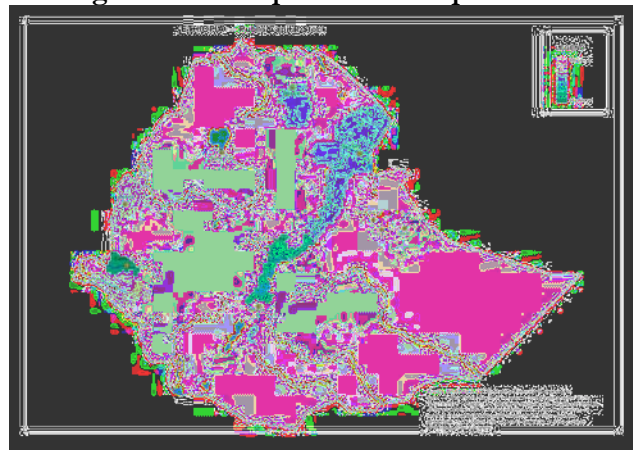
Reinforcing the infrastructure backbone of the country: Increasing market integration and connectivity in the country are essential to spread the benefits of the market economy; to foster internal and external trade and to facilitate information flows. Further, basic investments in infrastructure are required to tap into the development potential of areas whose exploitation is currently hindered (such as for example lowland areas whose economic potential is hindered by obstacles ranging from the tse-tse fly to limited road access). Infrastructure investment can also contribute to cushioning some of the consequences of the high variability of growth, for

example by helping absorb the effects of weather shocks through larger and better-integrated markets, or by helping the economy become less dependent on agricultural production. Some type of infrastructures, such as investment in storage facilities, can also tackle directly the variability of agricultural production.

The challenges of infrastructure development in Ethiopia are compounded by the size of the country, its rugged terrain and the differences in population density across regions. As it will be discussed in chapter III, comprehensive infrastructure development plans have been elaborated, with enhanced efforts in terms of roads, construction, telecommunications, expansion irrigation and power generation and transmission. More work is needed to ascertain the right balance and scale of the interventions required, valuing their growth and poverty reduction potential, and the right mix of public and private investment called for. Further, given the huge costs of these type of developments, appropriate “packages of intervention” need to be identified considering their regulation, institutional development and physical investments of various kinds components, in order to ensure the creation of an enabling environment for private sector development.

There are signs that bode well for future progress. Most notable among them is that efforts to date at investing in human and physical capital might be paying off. So far large efforts have been somewhat diluted by the scale of the challenge. Recent evidence summarised in the map I below (Figure 2.3), shows however that investment, particularly in infrastructure, is resulting in the emergence of “growth zones” – most visibly the one linking the Awash valley with the border with Djibouti and hence access to the port. Such areas, endowed by public services ranging from roads to electricity to telecommunications could serve as growth poles. These could be areas where the benefits of aggregation could be reaped, thereby spurring a more dynamic economy which could exert a pull factor from less developed parts of the country, and provide a greater demand for domestically produced goods.

Figure 2.2 Ethiopia: Public Capital Stock



These developments in terms of infrastructure provision, and the ambitious plans now being developed, will significantly contribute to increase in the rate of return for private investment. It will be important to complement them with other, softer, types of interventions to create a supportive business environment for dynamic investors. Such interventions range from institutional support (for example through the creation of producer and trade associations; coordination of producers and buyers; land leasing at concessionary rates to investors; campaigns to expand output of new crops; and investment in cold storage facilities and development of industrial zones) to trade-facilitation, to the creation of an efficient financial sector.

While wide ranging in their consequences, these types of investment and reforms need not entail high-costs. The development of non-traditional exports like floriculture, for example, has shown how institutional reform aimed at creating a more positive business environment could help sustain the development of new sources of dynamism in the economy. While the large success of this particular niche might be specific to only some sectors of the economy whose growth potential is relatively easily tapped, investing in the creation of a supportive environment for private sector development is important to reap the growth benefits of the large investments which are currently planned.

The emerging urban agenda: Ethiopia is currently one of the least urbanized countries in the world, with an estimated 16% of its inhabitants living in urban areas. The contribution of urban areas to the Ethiopian economy can be approximated with the share of industry and services in GDP, as those are generally located in urban areas (Kessides, 2005). In Ethiopia in 2003 urban areas were contributing 55% of GDP, against an 85% estimate for Sub-Saharan Africa and 75% for low-income country. While such contribution seems comparatively very low, it is still the result of significant growth over the previous decade.

The increase in the economic weight of towns in Ethiopia is also reflected in increased concentration of people in urban areas. This does not seem to have been accompanied by a reduction in poverty, however, as the latest data available show no sign of decline in urban poverty, despite progress in rural areas. Available evidence, however, shows a decline in access to services in urban areas, suggesting that the pace of urbanization has been faster than the increase in service delivery. On the basis of cross-country evidence it can be supposed that this has been particularly the case in smaller, secondary cities where resources might be more limited, administrative capacity weaker and where migrants arrive directly from rural areas, without many assets and skills which might help them in the urban economy.¹⁰

The increase in urbanization and its potential role in creating a more dynamic non-agricultural economy are raising the profile of the urban agenda as a possible resource for growth and poverty reduction. The development of a balanced urban system offers the opportunity to increase market integration by facilitating exchanges and the division of labour, as well as facilitating partial or complete diversification in the non-agricultural sector. Further, cities offer the opportunity to deliver services more cheaply and can act as poles of growth, thereby playing an important role in poverty reduction. Several pre-conditions have to be in place for the benefits that cities can provide to materialise, in particular the existence of well-functioning markets for land, labour and services, with efficient information flows. On some of these fronts, progress has been made in Ethiopia, for example with respect to the regulatory and licensing environment and urban land, which existing firms identify as an important barrier to their expansion and which is also particularly important to increase security and favour asset building by households.

2.4. Projecting the Growth Agenda forward in an MDG Strategy

Ethiopia, as one of the pilot MDG countries, has elected to take a holistic approach to developing an MDG strategy, including a careful consideration of economy-wide factors and cross-intervention synergies. The central role played by growth in this context has been very clear to all the partners involved in the MDG needs assessment process as demonstrated by the choice to include rural and urban development, private sector development, and infrastructure in the MDG needs assessment exercise.

¹⁰ Evidence of “step migration” is provided in a recent report by Brown University (Gurmu et al)

Long-term growth performance in Ethiopia has been variable, though relatively better growth trends have been recorded since 1991. Growth remains however very volatile, and particularly dependent on weather shocks affecting agriculture. Interventionist policies are needed to reach a sustainable growth path, to boost export growth and to diversify the economy. A substantial scaling up of interventions will be required for Ethiopia to move out of the several interlocking poverty traps which constrain its development. Key areas, which have been identified as central to this effort, are the need for continued institutional reform to create a supportive environment for private initiatives, building the skilled human resource base, reinforcing the infrastructure backbone of the country and the increasing efforts in rural and urban development.

To develop a full-fledged growth strategy to support the MDG strategy several areas need to be more fully investigated, as they are potentially critical:

- Labour mobility, including with reference to the impacts of land tenure security and transferability;
- The costs and benefits in terms of growth and poverty reduction of specific interventions considered;
- The effectiveness of the different mix of infrastructure investment and the possible existence of threshold effects. In this respect, ongoing work to develop estimates of the returns to various individual investments and to a 'package of interventions' whether in infrastructure, agricultural development, health, education, or urban development needs to be pursued. Careful attention should be given to studying the private investment response, the returns to households, and the main channels of impact;
- The costs and benefits of alternative types of investment, particularly for infrastructure, as costs are likely to be very high and returns might be characterised by high risks.

It is beyond the scope of this report to tackle all issues. But this report, by highlighting the series of concrete and practical steps that can be undertaken to reach the MDGs, covers the key elements which will be at the heart of a comprehensive development strategy which builds and scales up existing policies, strategies and programs.

Chapter III: Summaries of Sectoral MDGs Needs Assessment Reports

3.1 Introduction

This chapter presents the key features of the sectoral plans to reach the MDGs. Each sectoral report sketches a comprehensive and wide-ranging plan elaborated by sectoral experts working in close collaboration with the respective Ministries and with technical backup and methodological guidance from the Millennium Project. These assessments provide the key elements of a bottom-up strategy to reach the MDGs and they are well grounded in the sectoral plans and existing diagnostic. It is clear, however, that significant uncertainty remains on sectoral requirements, particularly as it relates to requirements outside the narrow reach of the MDGs.

The findings of the sectoral assessments here presented are to be seen in conjunction with the analysis in chapter 4 on the macroeconomic consequences of implementing the MDG strategy and of chapter 5, presenting an overall monitoring and evaluation system for the strategy. To finalise the plans, further sectoral work may be needed to refine these sectoral costing and integrate them fully into an overall strategy.

Issues to be addressed in this regard include:

Phasing of interventions: Sectoral assessments offer, with varying degree of detail, indications on how best to phase interventions in those sectors. These considerations, however, need to be harmonized across the overall plan to make sure that enough capacity is built throughout the system to best implement each particular component and the overall plan, thereby avoiding sudden increases in wage premium for skilled labour and other systemic constraints.

Capital versus recurrent expenditures: In summarising the sectoral assessments, a breakdown is provided of current versus capital spending. This again needs to be harmonized throughout the overall strategy, to make sure that the infrastructure requirements for rapid progress are all in place and that staff and operation and maintenance will be covered.

Scenarios: Some of the sectoral reports present ranges of estimates, although different sectors have emphasised different sources of options or uncertainty (e.g. due to alternative service delivery modalities or target coverage). Different types of sensitivity analysis need to be replicated also at a more aggregate level if implementation or financing constraints of any kind were to emerge.

Private versus public financing: Not all sectors considered the breakdown between private and public financing. This will be addressed to reflect the Government's overall strategy towards private sector development.

3.2 Sectoral Assessment for Education

3.2.1 Education and the MDGs

Two of the MDGs are related to education, namely Goal 2 of achieving universal primary education and Goal 3 of promoting gender equality and empower women as it concerns the elimination of gender disparity in primary and secondary education at all levels. The MDG

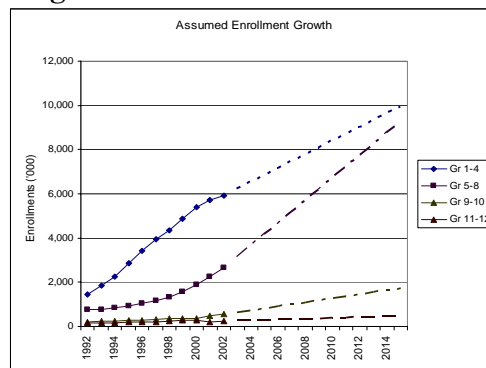
education strategy also encompasses raising the quality and relevance of education, addressing the shortage in terms of quality and quantity of relatively skilled professionals required by the expected scaling up in service delivery, and addressing the high levels of adult illiteracy (almost 90% for women). The emphasis given to education reflects also its instrumental importance in fostering progress towards other goals, such as reducing extreme poverty and hunger by building up poor people’s productive potential, and improving child health via the beneficial effects of maternal education. Not all these benefits will be fully reaped over the period to 2015, but investing in education helps lay the foundations for sustained progress and development.

The latest available estimate puts the Gross Enrolment Ratio (GER) for primary education in Ethiopia at 68% in 2003/2004 – an enormous and rapid increase over the 1990 estimate of 32%. In absolute terms, the scale of progress is even more impressive, with a more than three-fold increase in primary enrolment between 1990-91 and 2003-04.¹¹ Progress in average enrolment so far begun to address the gender imbalance, at least in primary education: the ratio of girls to boys increased by 10 percentage points to 80% by the end of 2003/04. Nevertheless, gender gaps still remain substantial, particularly at higher education level.

Despite the impressive recent performance, important challenges remain. These include:

- The demographics of the country and the ambitious target of achieving 8 years of primary education for all (rather than the internationally agreed 5 years minimum) imply that enrolments will have to increase by about 19 million children by 2015, equivalent to more than doubling current levels (see Figure below). Progress in redressing the gender gap also needs to be accelerated especially at higher education levels;

Figure 3.1: Assumed Enrolment Growth



- Pervasive disparities in access remain, particularly between urban and rural areas, which will require facing the difficulties of delivering in sparsely populated areas and to large groups who require specially designed programs such as pastoralist and semi-agriculturist populations, as well as children with disabilities, orphans and over-age children who previously missed out on schooling;
- Finally, constraints to increasing enrolments and lowering drop outs and repetition rates depend also on household related factors such as the labour needs within the household for agricultural and house tending tasks. Progress will therefore also depend from the

¹¹ Primary school enrolment increased from 2.871 million in 1990-91 to 9.537 million in 2003-2004, a more than three-fold increase. Enrolments in secondary education increased from 453 985 in 1990-91 to 780 205 in 2003-04 (a 70% increase), while enrolment in higher education increased from 31 000 students before 2000 to 172 522 in 2003/2004, a five fold increase.

dynamics of variables such as private income and availability of services (such as water, energy etc.) which are beyond the direct realm of the education policy.

3.2.2. Priorities for action

Against this background, the MDG strategy to increase education and its quality centres around the following:

Achieving an adequate balance between different levels of education: This implies expanding access to primary education with a special emphasis on basic education delivery modalities suitable to the needs of remote rural areas, such as, scaling up the Alternative Basic Education Centre (ABEC) model. Investment in secondary and tertiary education and Technical Vocational Education and Training (TVET) will also be expanded in line with labour market requirements, particularly to face demands for relatively skilled workers in service delivery while adopting new solutions to lower unit costs. Finally, efforts will be made to tackle adult illiteracy with regional literacy campaigns.

Decreasing the Teacher Pupil Ratio (TPR) by increasing the supply of both classrooms and teaching staff: Current TPRs are very high (1:70) and improving quality of learning will require reducing them substantially. Current standards for teaching staff and construction will need to be revised and brought in line with local circumstances. The use of para-professionals, the rationalization of class sizes, and the adoption of multi-grade schools can all contribute to increasing the availability of teaching staff, as well as contributing to increasing the space for non-wage recurrent expenditures. An extensive classroom construction program, providing low cost, locally appropriate in terms of materials, healthy and safe constructions, will also be undertaken to arrive at the 380000 classrooms compatible with the 1:40 TPR target.

Capacity building and institutional development: Scaling up the educational effort within a decentralized strategy requires strengthening capacities at all levels (federal, regional, *woreda*, school and community levels, including the recently established Parent Teachers' Associations) within a framework where responsibilities for all actors are clearly specified. Of particular importance is raising the quality of teaching and para-professional staff, to allow for their professional development and tackle problems such as the high attrition rates of grades 5-8 Teacher Training College (TTC) trained teachers. Current efforts to increase the numbers of female trainees should also be stepped up and extended to all regions.

Investing in curriculum development, teaching materials and monitoring learning achievement: With the support of the Ministry of Education (MoE), all regions will continue to improve and develop their curricula and their teaching materials. Textbooks which are presently in short supply and of varying quality will be improved and produced on much larger scale, and funding for this non-salary recurrent costs will be devolved to the *woreda* and school level. A test bank collecting tests developed for grade 4 and 8 will be established and relied upon to monitor appropriately learning outcomes.

Policy reform on the financing of education: The role of Regional Education boards in monitoring and evaluation needs to be strengthened to ensure accountability within a decentralized system. A greater degree of planned flexibility in financial management and good programming is needed to raise absorption capacity of donor funds. Furthermore, greater transparency and consultation through the Regional Education Boards should characterize the allocation of block grants to regions and *woredas*.

Advocacy: Greater use will be made of the media, in particular radio, to disseminate the aims of the educational policy and to support its goals by motivating teachers and sharing best practices.

3.2.3. Sectoral Needs Estimate

The plan sketched above would result in an investment in education in the region of 16,274 Million USD, with about 14 billions of pre-university expenditure (7.1 billion going to primary). Capital expenditures are forecasted to take place at a steady pace, with a greater emphasis in building schools for grades 5-8. Recurrent costs build up gradually as the system becomes fully functional, so as to result in a feasible rate of sectoral expansion, particularly given the need to create an appropriate supply of teachers. Capital expenditure for pre-university education represents 20% of the total. The private sector (households and community) is expected to cover 34% of the costs, mostly expanding the provision of secondary and tertiary education facilitated by access to soft loans, but also with activities in text book development and printing, and provision of housing loans to teachers, with Non-Governmental Organization (NGOs) contributing about 5%.

3.3. Sectoral Assessment for Health and HIV/AIDS

3.3.1. Health, HIV/AIDS and the MDGs

Three MDGs specifically refer to health: Goal 4 of reducing child mortality by two thirds, Goal 5 of reducing maternal mortality by three quarters and Goal 6 of halting the spread of **Acquired Human Immunodeficiency Syndrome (HIV/AIDS)**, malaria and other communicable diseases. The emphasis given to health among the MDGs points to its central role for the wellbeing and development of a population, and more specifically to reaching other MDGs, such as those related to education – with healthier children having higher learning capacities; nutrition – for example through the elimination of parasitic infestations which lower bodies' ability to transform food into good nutritional outcomes; and poverty – with the direct effects of good health on productive potential. The HIV/AIDS epidemic constitutes a special threat to development and poverty reduction aside from its tragic costs in terms of large losses of lives.

While improvements in health underpin progress in many other dimensions, a plurality of factors not directly accounted for in this section affect health status. Those include the availability of safe water and sanitation, availability of food, personal hygiene and cultural practices, educational achievements especially of women and the availability of transport to reach health facilities. Population pressures play an important role in determining health outcomes, while at the same time depending on health achievements, particularly those related to child survival.

The under-five mortality rate is about 140 per 1,000, and significant regional disparities are recorded, with rates ranging from 114 to 233 per 1,000. The maternal mortality rate is one of the highest in the world, at about 871 per 100,000. These indicators are symptomatic of generally poor health status, though disparities along the rural/urban divide, and the special challenges in accessing services faced by pastoralists should also be noted. Widespread poverty along with general low income levels, nutritional deficiencies, low education levels (especially among women), inadequate access to clean water and sanitation facilities, a high rate of migration, and poor access to health services contribute to the high burden of ill-health in the country. This situation is further aggravated by the high population growth. Nutritional disorders rank among the top problems affecting Ethiopians, children and mothers in particular.

Data on HIV/AIDS and its evolution over time are scant. Those available suggest that prevalence is high in urban areas (almost 4 times higher than in rural areas, and particularly high in Addis), among individuals in their most productive phase of life (15-49) and particularly high for women aged 15-29. Projections show that the infection could reduce total population in 2015

by 7 million. On the basis of United Nations AIDS (UNAIDS) reports, the targets for 2015 have been set to reversing the incidence of new infections from 0.66 % in 2004 to 0.55 % and to stabilize HIV prevalence at the current average rate of 4.4%. Such targets imply halting the rapid spread of infections which has characterized the recent past.

3.3.2. Priorities for Action

Reaching the health MDGs implies a dramatic expansion of key services, and the implementation of mechanisms to increase demand for and use of those services, particularly the rural populations, the poor and among them women and children.

Priorities are listed below as 6 steps progressively allowing the upgrade of health services, strengthening both supply of services and demand for preventative and curative care.

Information and social mobilization for behaviour change, which includes all activities, related to general health information through the media and social mobilization to trigger awareness of critical health issues as well as behavioural change. These services will have a special emphasis on health education of mothers as well as on promoting the dissemination of key commodities-condoms, bed nets, ORT packets- through the retail and commercial network (kiosk, retailers, pharmacy outlets etc.). HIV/AIDS infection transmission and targeted interventions for high-risk groups will be included, and the programs will address also stigma and social exclusion of People Living With HIV/AIDS (PLWHA).

Health Services Extension program: which includes all the key activities of the HEP Health Extension Program (HEP) and in particular: i) the rapid vocational training of health extension workers and construction and equipment of health posts; ii) volunteer/private sector community promoters/TBAs providing support to households for behaviour change (eg breastfeeding, supplementary feeding, use of bed nets, clean delivery etc.) iii) strengthening the quality of and demand for clinical care -particularly treatment of Acute Respiratory Infections (ARI) and malaria in children and assisted delivery, HIV testing and counselling as well as prevention of Mother To Child Transmission - in existing health stations and health centres.

Upgrading clinical 1st level services, including the expansion of health centers throughout the country, the upgrading of health posts to offer basic clinical care, the recruitment of one additional staff with clinical skills in each health post and the adequate staffing with registered nurses of all new and old health centers. Voluntary Counselling Testing (VCT) facilities and treatment for conditions strongly correlated with HIV/AIDS such as Sexually Transmitted Diseases (STDs) and OIs, particularly (Tuberculosis) TB will be strengthened. Palliative care for terminal cases of AIDS and Prevention of Mother to Child Transmission (PMCTC) will become more widely available.

Upgrading clinical services for Comprehensive Emergency Obstetric care including equipping all health centres with an operation theatre and staffing it with the appropriate number of nurse midwives and health officers with EOC and surgical skills, establishing adequate transport means, setting blood banks in all health centres and upgrading existing hospitals into full referral centres for emergency obstetrical care. Capacity to guarantee blood safety will be built.

Expand and upgrade referral clinical care: entailing the expansion and upgrading of referral services allowing quality follow up for HIV patients receiving Highly Active Antiretroviral Therapy (HAART) and expanding referral services for neonatal care and complex emergency obstetrical care, thus contributing further to the reduction of under five and maternal mortality.

Other HIV/AIDS Specific Interventions

Review of Civil code to protect rights of PLWHA: and in particular of the employment code.

Safety nets for vulnerable groups; particularly aimed at orphans, as they are an essential element of any impact mitigation strategy, though poverty reduction and improved social conditions will increase the number of orphans that can be supported by families and communities without resorting to orphanages.

Mainstreaming HIV/AIDS intervention in other sectors; by building capacity for sectoral personnel, developing service delivery modes which take into account special needs of through those People Living with HIV/AIDS (PLWHA), building community level capacity to raise profile of HIV/AIDS and manage community level interventions (micro-credit schemes, collective action for income generation, targeting of programs for vulnerable groups), considering the HIV/AIDS impact of infrastructure projects.

3.3.3. Sectoral Needs Estimates

Implementing the plan will require US 8.1 billions for HIV/AIDS, on the top of current health expenditures. For the general health interventions, capital costs will amount to about 40% of the total, for HIV/AIDS about 90% of the total. The private sector is going to cover about 40% of the general health costs, as there is a scope for greater cost recovery and encouraging private provision at the curative level for better off urban consumers. For HIV/AIDS, the private sector is expected cover about 30% of the costs.

3.4. Sectoral Assessment for Water and Sanitation

3.4.1. Water and Sanitation and the MDGs

One of the MDG targets within the environmental sustainability goals calls for halving the proportion of people without sustainable access to safe drinking water and basic sanitation. Access to water and sanitation is also essential to the health and nutrition goals, as well as to education (by reducing the time spent on household tasks such as collecting water, by improving quality of school facilities) and female empowerment (e.g. by freeing up women's time otherwise devoted to fetching water). For Ethiopia, it has been estimated that a 50% reduction in the incidence of diarrhoea can be achieved with the use of latrine, 15% with the use of clean water, 32% with the practice of hand washing, while as much as 20% of under-5 mortality in Ethiopia can be attributed to this disease.

Estimates of access to water and sanitation differ across sources and definitions. The sector report adopted a goal of increasing access to water from 40 to 73%, in line with the Water Supply and Sanitation development program, and that national sanitation coverage has to increase from 12 to 56%. Key challenges are in part institutional, the need to closely coordinate sanitation interventions under health with those considered in the water and sanitation strategies and in part linked to local conditions such as proneness to droughts or cultural norms. The demand for sanitation is particularly affected by a lack of understanding of the linkages between health and sanitation, the competition with more pressing survival needs, the tradition of subsidies or free provisions of materials and facilities by NGOs and inappropriate promotion methods. Furthermore, population growth puts additional strain on this as on other areas of service delivery.

3.4.2. Priorities for Action

Water

Clarifying the Institutional Framework with Respect to Roles and Responsibilities

following some recent positive experiences of community-ownership and appropriate technology for water, and successful expansion in sanitation coverage attempted in the Amhara region by Woreda level administrators and health agents.

Increasing Private Sector Support Particularly in Smaller Towns by amending the regulatory environment and creating a more favourable environment for private sector involvement. The construction capacity of Local Service Providers will be strengthened and it will be ensured that they are provided with appropriate tools.

Study Design and Building New Water Supply Systems in towns where they do not exist and rehabilitation of defective water supply infrastructures where they are already established. In rural areas this will involve water supply schemes appropriate to local circumstances.

Support infrastructural investments with complementary interventions such as the enhancement of the capacity of regional bureaus to implement the regional water supply programs. For urban areas, autonomous water boards at the town level will be established and appropriate maintenance equipment and quality control infrastructure will be provided. In rural areas, community level Water/Sanitation (WATSAN) committees appropriately trained and supported by LSP, and appropriately equipped and trained Woreda Desks for the development of woreda level supply plans will be established.

Sanitation

Provision of better facilities (latrines) at the household level: in both urban and rural areas:

Hygiene education services through community promoters trained at the *woreda* level (in rural areas) and through the use of the media.

Sewerage systems expansion in Addis and construction in 9 other towns; septage collection treatment and disposal for areas not connected to the system.

Solid waste management system: This involves development and strengthening of the system in urban areas.

3.4.3. Sectoral Needs Estimates

The overall costs for the water sector have been considered to be 2.7 billions USD. Slightly more than 60% of the costs are devoted to rural areas. It is assumed that consumers will cover 14.6% of overall costs, as tariffs will be redesigned – overall urban and rural consumers will be expected to finance respectively 30% and 6% of the investment in their areas.

For the sanitation sector the costs have been estimated at 4.6 billion USD (of which 19% to benefit rural areas). It is assumed that household in urban communities except slum dwellers can cover the costs of their own facilities, as well as connection costs to the sewer if available. Subsidised schemes are considered for provision of latrines in rural areas. As a result, out of pocket contributions of households are expected to cover 86% of the total in rural areas and 77% in urban areas.

3.5. Sectoral Assessment for Gender Equality

3.5.1. Gender and the MDGs

Gender equality and women's empowerment are the goal of the 3rd of the MDGs, operationalised with reference to the elimination of gender disparity in school (see above). Bringing about gender equality requires, however, the mainstreaming of gender throughout government strategies, and in particular addressing the specific challenges to gender equality existing in a given cultural and economic context. In Ethiopia Traditional Harmful Practices (THP) and gender-based violence are key priorities. Improvements in gender equality and empowerment are closely related also to other MDGs such as the reduction of child and maternal mortality, and halting the spread of communicable diseases. Indirectly it also contributes to other goals such as goal 1 of reducing poverty and hunger by decreasing the vulnerability of women, decreasing population pressures through decreased fertility etc.

The Ethiopian constitution recognises the equality of men and women in terms of political rights and since 1993 an office for Women's Affairs has been established in the Prime Minister's Office with the task of implementing the National Policy on Ethiopian Women. Nevertheless, Ethiopia's society remains a male dominated one and gender differentials are recorded in all dimensions of well-being, including empowerment and effective access to productive assets. On the legislative side, the devolution of family laws to the regional level has led to disparities in rights and treatment across regions. The economic role of women is largely constrained and undervalued, partly by traditional gender roles reinforced by high fertility and large time-requirements of some tasks (such as fetching water) partly as a result of limitations on access to productive assets such as land and credit. Furthermore, several traditional practices have debilitating effects on women's physical and mental health with adverse consequences also on their productivity.

3.5.2. Priorities for Action

Additional priorities on gender to those already included in other sectoral assessments include

Addressing institutional weakness such as the weak capacity at all levels and the unclear institutional framework, for example in terms of responsibilities and reporting between regional and central level staff

Mainstreaming gender planning by creating gender disaggregated socio-economic and demographic data

Additional health interventions –institute family life education services for the general public and targeted programs for specially vulnerable groups

Additional education interventions – strengthen capability of Women's Affairs Office (WAO) and regional desk in this area, build capacity among teachers students and parents' associations, use social marketing to underline the importance of female education, ensure that schools have appropriate facilities to cater for student girls' needs

Address HTP through social marketing campaigns, working through community groups, training health promoters, teachers, extension workers, social workers

Targeted programs to alleviate FHHs vulnerability by helping them build up their assets through access to micro-credit and skills training, by facilitating access to land and by prioritisation of the type of infrastructure that mostly helps women (water, roads, marketing centres).

3.5.3. Sectoral Needs Estimates

The cost of implementing gender interventions has been estimated at US\$111 millions of which 1/3 to raise awareness of gender issues throughout the educational system and 18% to strengthen capacity in the WAO at all levels. In terms of financing, to date WAO activities have been cofinanced by the government covering staff and office costs, and by international bilateral and multilateral donors. It is assumed that civil society organizations and community-based organizations will cover about 15% of the costs.

3.6. Sectoral Assessment for Population

3.6.1. Population and the MDGs

While there is no specific MDG target on population growth, integrating population concerns in all aspects of economic and social activity is instrumental to bring about improved quality of life for current and future generations. High rates of population growth in Ethiopia, currently at 2.75% per annum, put a strain on public resources and government's ability to deliver services, increase pressure on environmental resources and cause high health costs, particularly in terms of increased risks of maternal and child mortality.

The Ethiopian National Population Policy (1993) sets the goal of reducing total fertility rate to 4.0 children per woman, while the current level is 5.9. In order to reach this goal, for the purposes of this assessment targets have been set in terms of increased prevalence of contraceptive use (to be raised from 4 to 44%). The expected decrease in population growth is seen as resulting from a variety of interventions related to reproductive health, mortality reduction, gender and development Resources area also allocated to actions targeted to youth and to individuals with disabilities, research and data collection, and capacity building, so that a large spectrum of activities has been considered overall in devising the MDG population strategy.

3.6.2. Priorities for Action

A full-fledged population strategy covers many elements such as education and health, particularly for women, service delivery, information dissemination on STDs and HIV/AIDS, which have already been considered in other sectoral assessments. However, two key priorities for action not considered anywhere else still remain to be articulated.

Strengthening the information system and the supply of information for policy making at all levels by analysing and disseminating results of various pertinent surveys, building capacity in planning bodies, strengthening coordination and implementation of population programs at all levels, monitoring regularly and assessing population programs, building capacity for analysis and planning on population issues

Strengthening commitment on population issues from policy makers at all levels through advocacy and information, organizing workshops and other learning events for policy makers at all levels and building collaborations with women's advocacy, youth and other civil society groups

3.6.3. Sectoral Needs Estimates

The interventions in support of the population strategy will cost USD 226 millions, 47% of which for mainstreaming population issues at all levels of policy making and for data collection and analysis, the rest for advocacy and sensitisation on population issues at all levels.

3.7 Sectoral Assessment for Infrastructure Development

3.7.1. Infrastructure and the MDGs

The MDGs do not explicitly include targets for infrastructure provision (aside from those in terms of water and sanitation), However, infrastructure plays a pivotal role in enabling progress on all the MDGs. The welfare costs of poor infrastructure affect health and education. Transport, for example, facilitates access to health care and education, and eases the staffing and access to rural clinics and schools. Electricity is essential for certain operations (e.g. delivering vaccines which require refrigerated storage) and reduces the direct risks of alternative heating and lighting methods, as well as favouring hygienic practices by reducing the cost of boiling water. Estimates of the impact of infrastructure on poverty reduction in the late 1990s showed that infrastructure investments cut poverty by as much as 2.1% in low-income countries and 1.4% in middle-income countries. Some of the effects that infrastructure has on human development indicators are mediated through its growth enhancing effects– these have been recently evaluated using a large panel data set encompassing over 100 countries and spanning the years 1960-2000, which found that growth is boosted by the stock of infrastructure assets, and that income inequality declines with the expansion of infrastructure both in terms of quantity and quality. In the Ethiopian case, it has been simulated with micro-data that a package of interventions to provide the poorest quintile with access to electricity and sanitation and bringing everybody within 10 km of the public transport system and within 2 km of clean water source would reduce poverty by at least 11% and increase average consumption by 4.4%.

Table 3.3 below compares Ethiopia with several groupings of countries and shows how much progress is needed even to catch up with the other Sub-Saharan countries. Such gaps remain evident also when trying to discount the effects of the different characteristics of the countries considered.¹²

Table 3.3: Comparison of Infrastructure Development

	Road Density (km/sq. km of land)	Installed capacity per 1000 persons (kW)	Electricity consumption per capita (kWh)	Average telephone mainlines per 1000
	1999	2001	2001	2002
Developed countries	0.43	2044	8421	585
Developing countries	0.14	272	938	100
Sub-Saharan Africa	0.07	105	456	15
Low income countries	0.18	Na	317	28
Least Developed countries	0.06	Na	89	7
Ethiopia	0.03	8	22	5

Source: World Development Indicators (2004)

Roads: Despite a road density, which is one of the lowest in Sub-Saharan Africa (SSA) (0.33 km per 1000 sq km) road, transport is the dominant mode, carrying about 95 percent of the country’s passenger and freight traffic. Roads are also the only form of access to most rural communities. Low density constrains the development and deepening of agricultural markets –

¹² The Millennium Project methodology for costing infrastructure is based on predicting conditional means of which should be the level of a given type of infrastructure for a country given a set of repressors

some 60% of farms are estimated to be more than half a day's walk from an all-weather road. Low density also jeopardizes food security, which depends, *inter alia*, on year-round, as well as seasonal, access to markets

Electricity: Less than 6% of the population has access to electricity supply (13% live in electrified areas) while the rest of the population relies on biomass energy, with serious environmental consequences. The existing distribution network is overloaded, resulting in the inability of connecting large new commercial customers, and more generally in the poor quality and variability of existing service, characterized by low voltage levels, voltage fluctuations beyond acceptable ranges and frequent breakdowns. Increasing electricity access (from about 13% today to about 20% by 2012) is an integral part of the strategy to promote income-generating activities and social services outside major urban centers in order to improve living standards and reduce poverty. Promoting access to electricity is also part of the Government strategy to decentralize the delivery of services throughout the country. Electricity generation and transmission is so far provided by the Ethiopian Electric Power Corporation (EEPCCO), though the possibility of private electricity generation and sale to the state grid has been allowed.

Irrigation: Ethiopia has a significant potential for irrigation. Nearly 4 million hectares of land is irrigable. However, only 5% of this potential is believed to have been realized so far. The Ministry of Water Resources estimates that to meet Ethiopia's cereal requirements by 2015 it would require cultivation of 1.2 million hectare of newly irrigated land.

Telecom: Ethiopia ranks towards the bottom of African countries in terms of telephone penetration rates. High-unmet demand is indicated by long delays in obtaining connections. Quality is also poor. Since 2003, important gains have been achieved in terms of network expansion, including the mobile network. These investments have led to an increase in total tele-density from 0.5 lines per 100 inhabitants in 2002 to 0.95 by May 2004, and current plans aim to raise tele-density to approximately 1.7 by 2005 by increasing mobile access. This would still result in a significant shortfall with respect to the Sub-Saharan Africa's average, projected to reach 5.47 lines per 100 inhabitants by the same date. Achieving a target tele density of even three phones per 100 persons implies a capacity increase of approximately 1.8 million lines and translates into a capital investment in the range of \$800 million to \$1.2 billion. Though, telecommunications in Ethiopia is still run by the Ethiopian Telecommunications Corporation (ETC), downstream activities are being liberalized for enhanced participation of the private sector.

Railway: The rail system has very limited coverage and existing segments are in need of restructuring, heavy investment as well as institutional and management reform. The railway to Djibouti, which connects Addis to the main port used for Ethiopian trade was built to light civil engineering standards, its rail sections are nearly a hundred years old and very little maintenance has taken place in the past thirty years. Trainloads and speeds are therefore very low. Locomotives are presently not very reliable and due to the weakness of the rails need to be of small size. The potential benefits of an efficient rail system capable of moving quickly low price but bulky materials cannot therefore be reaped. The existing rail system in Ethiopia is run by the Ethiopian Railways whose minority shareholder is the Government of Djibouti.

3.7.2. Priorities for Action

Based on cross-country estimates and existing sectoral plans, the following infrastructural investment priorities have been identified to support the MDG strategy:

Expansion of the roads network, particularly at the local/community level in order to favour access to rural communities. Continuing present efforts would imply reaching a road density of

50 km per 1000 sq km, but efforts can be further scaled up to reach 91 km per 1000 sq km. Interventions will also focus on improving quality with the rate of acceptable (i.e. good and fair) roads for all road types rising from the current 65% to 80%. Finally, food or cash for work programs will help construct feeder roads in food insecure *woredas* until the programs are phased out with the eradication of food insecurity – the road sector will support that effort through technical assistance to improve the quality of roads constructed.

Electricity and hydropower: In order to accelerate electrification throughout the country, EEPSCO has developed a long term plan for power system expansion, involving significant extensions of the network and the construction of two new generation plants (at Geba and at Aleltu East Stigel I respectively). Further, investments are needed in designing hydropower plants to harness the potential of the country's large water resources, currently 94% of the country's electric power generation relies on water resources but this represents only an estimated 2-4% of the potential.

Irrigation: Ethiopia has a significant potential for irrigation: as nearly 4 million hectares of land are irrigable but only an estimated 4% of this potential is mobilized. The high cost-high risk combination offered by this type of potentially very profitable investment has so far resulted in under utilization of this important resource. A number of interventions are currently under consideration or have already been launched. These include: the construction of several multipurpose dams for irrigation and hydropower, a new programme in the Awash and Nile basin to develop more than 100000 ha, small scale irrigation schemes in the highlands, and the Nile Basin Initiative (NBI). The latter is a regional initiative initiated by the Ministry of Water Resources of the basin countries -Egypt, Ethiopia and Sudan- in 1999 to achieve sustainable socio-economic development through equitable and efficient use of their shared water resources.

Telecom: ETC has developed a strategic plan to face the challenges of bringing telephones and Information Communication Technology (ICT) to Ethiopia. The priorities identified include upgrading and expanding the backbone infrastructure, roll out mobile and fixed services enhancing the grand rural connectivity program. These investments will be frontloaded over the next ten years as investment requirements are expected to slow down after coverage and capacity have been upgraded in the first few years

Upgrading of existing railway and creation of a North South Corridor:

The existing line between Addis and Djibouti, as mentioned earlier, needs to be upgraded in order to allow for more efficient flows of traded goods in and out of the country. A second axis, running North-South and connecting with Sudan and Kenya would be a good complement to the first one and would allow the diversification of trading routes for the country, with a reduction in transactions costs and waiting times across the country.

3.7.3. Sectoral Needs Estimate

As already noted, large public enterprises are responsible for investment in electricity, telecommunication and railways. To date these firms have largely used retained profits for expanding their networks, but these sources of financing will be inadequate to support the expansion that is envisaged. The investment needs considered here will require a combination of internal and external resources, and reforms to the tariff structures so that social objectives (such as providing services affordable to the less well-off) can be made compatible with economic objectives.

Roads: The roads expansion program is estimated to cost USD 23.8 billion for construction to be financed at the federal (69% of total), regional (31%) and local/community level (0.4%), while operation and maintenance would amount to USD 3.7 billion (76% of which covered at the federal level, 24% of which covered at the regional level and with 0.4% covered at the local level)

Electricity, hydropower and irrigation: It is estimated that generation costs over the MDG period will amount to 4370 millions USD, while transmission costs will amount to 376 millions. The Government will co finance the plan together with EEPSCO, with an expected contribution of 551 millions USD of capital expenditure. Additional infrastructure interventions would add some 3.7 billions to the total costs, with irrigation and drainage as the largest ticket item at 2.6 billions, followed by 730 millions for the Nile Basin Development and by 429 millions for capacity building and general service. Of this third component, the Government would be expected to fully finance the capital expenditure.

Telecom: ETC estimates that the expected creation of the infrastructure backbone will require a total expenditure of about 3339 millions USD all to be spent in capital investment. As ETC is one of the most successful public enterprises in Ethiopia, it is expected to be able to finance out of its own resources all the recurrent costs associated with this investment plan, while with the private sector (consumers and communities) are expected to cover 10% of total capital costs.

Rail: The costs for the upgrading of the Addis Ababa-Djibouti line (781 km long) have been estimated at USD 312 million. Two alternative routes have been considered for the North South corridor, both starting at Humera at the border with Sudan and ending in Moyale and long approximately 2800 km. The costs for this second corridor amount to 1,716 million USD.

3.8. Sectoral Assessment for Rural Development and Food Security

3.8.1. Rural Development, Food Security and the MDGs

Rural development and food security are directly linked to two MDGs –halving the proportion of people living in extreme income poverty and of those suffering from hunger, and ensuring environmental sustainability. In a country such as Ethiopia, in which more than 80% of the population live in rural areas, rural development is at the very centre of the development strategy.¹³ Improving rural livelihoods is therefore essential also to bring about improvements in other MDGs. The challenges are huge: in as much as 40%, of the country, interventions to reverse or prevent environmental degradation are required, while covering the minimum caloric needs of the population by 2015 implies more than doubling 2004's food production.

To face these challenges, there are four main policy areas to be tackled:

Food security: A complex combination of factors leads to food insecurity, including changes in climate, widespread land degradation, limited alternative livelihood opportunities, increased population pressure, poor market integration, limited access to basic services, inputs, credit and information, technological factors; and national policies and implementation constraints. Even during normal harvest, on average there are some 5 million chronically food insecure people in Ethiopia. This chronic situation is frequently aggravated by unexpected shocks such as drought. With about 45 percent of the population affected during drought years, the extent of food insecurity has become alarming. The Government has already developed a plan (in the coming five years) to address this problem.

¹³ And indeed Ethiopia's economic development policy and strategy is based on the Government's ADLI.

Environment, natural resource management and infrastructure: Widespread and deepening environmental degradation undermines prospects of fighting poverty and achieving sustainable development in Ethiopia. Halting and reversing environmental degradation and developing the necessary infrastructure for a sustainable but profitable use of natural resources requires interventions in several areas including: watershed management, reversing deforestation, increasing the provision of irrigation and other water management techniques, reducing biomass dependency and expanding the supply of energy, developing rural infrastructure such as community feeder roads.

Agricultural production: With 60% of the country landmass suitable for some form of agricultural activity, Ethiopia has a vast agricultural potential. Only 10 of the 17 million hectares cultivable are under cultivation in any given year. Extensification might require the development of infrastructure (particularly roads and utilities) and services (health, schools, etc) into the new areas. Further development of irrigated farming could even result in even larger areas for crop production.

Livestock production is the second major agricultural production activity in both highlands and lowlands. It is an integral part of the country's agricultural system, especially in the highlands where it is part of the mixed farming system. The importance of this sector lies in the multiple functions of its product, ranging from being a source of food to providing cash income, draft power, manure, transport and a means of hedging against risks.

Agricultural marketing: The development of rural markets is an essential component of a rural development strategy. In the Ethiopian case, the experience of the last decade shows that increased production without appropriate and reliable market access is not sufficient to increase farmers' income, particularly when most smallholder farmers are poor, food insecure and vulnerable to external shocks, particularly drought.

3.8.2. Priorities for Action

Continuous support for the new food security coalition program with the core objectives of (i) enabling five to six million chronically food insecure people attain food security and (ii) improve significantly the food security situation of up to ten million additional food insecure people within three to five years time.

Reinforcing measures for environmental conservation and management such as extending to 27.7 million hectares watershed development interventions appropriate to the local conditions, fighting deforestation by reforesting 7 million hectares of land and keeping about 4 million hectares of existing natural forest under proper management.

Improving rural infrastructure by increasing the areas benefiting from irrigation (from 200 to more than 700 thousand hectares), multiplying the water harvesting structures (reaching 7.7 millions of them), increasing rural electrification (serving 75,000 households), strengthening the feeder roads network (to reach the target of 214 thousand kms).

Raising food production to meet the minimum food needs, estimated to be 26.24 million metric ton by the year 2015 (about twice the estimated production for 2004 (Central Statistical Authority (CSA), 2004). This will require: (a) increasing the cultivated area to 4.851 million ha. – With an increment of more than 50% as compared to 2004; (b) increasing the utilization of improved seed and chemical fertilizers to 1.35 million quintal and 13.15 million quintal

respectively; (c) compost preparation techniques reaching the adoption target of 2 million farmers by the end of the period; (d) support of livestock production with an aggressive animal genetic, animal health, feed and management plan.

Strengthening agricultural marketing, addressing current constraints and gaps. A detailed strategy has been elaborated aimed at developing: (a) an efficient agricultural commodity exchange system; (b) quality and standards; (c) a market information system; (d) marketing infrastructure; (e) an agricultural commodity export promotion strategy; (f) marketing rules and procedures; (g) agricultural marketing capacity and (h) a monitoring and evaluation system.

3.8.3. Sectoral Needs Estimate

It is estimated that the costs of these interventions for the period 2005-2015 is of approximately 15 billion USD, of which 6.4 billion for irrigation, 49 million for rural energy, and about 1.7 billion for food security, and the balance for other natural resources, environment and rural infrastructure and for agricultural production and marketing.

3.9. Sectoral Assessment for Private Sector Development

3.9.1. Private Sector Development in the Context of an MDG Strategy

Interventions to support private sector development are not explicitly linked to an MDG target. In the same way as infrastructure interventions, private sector development represents an essential element of the Government's development strategy, particularly in labor-intensive sectors, which can absorb a young and growing labor force. Private sector development interventions aim at facilitating the creation of an enabling environment for domestic and foreign private capital investment to kick-start the development process. Foreign investments supplement, but do not replace, domestic savings and investment.

Despite encouraging trends, Ethiopia is still characterized by slow structural transformation, both in terms of the traditional-rural to modern-urban economic transition, and transition from a socialist economy to one that is market-based. As a result, the livelihoods of the majority of the population still hinge on agricultural activities characterised by family labour and subsistence production. Public enterprises account for about 10% of the country's added value, state-owned enterprises dominate the large-medium scale-manufacturing sector, and state-farms manage the large irrigation schemes. Merchandize exports are estimated to be 8.8% of GDP in 2004/05, up from 7.5% the previous year. The share of goods exported, however, remains low in most sectors, though increases have been registered particularly in some sectors such as coffee. Earnings from coffee are expected to rise by 22% this year. Other areas in which exports are growing are high value agricultural products (horticulture including flowers and organic coffee), high quality commercial crops and high quality skins/leather and textile garments. Trends in export share of major commodities are shown in Table 3.4 below.

Table 3.4: Share of Value of Major Exports in Total Exports (%)

Commodity	Years							
	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05
Coffee	69.8	58.1	53.9	39.3	36.1	34.2	37.2	41.0
Oil Seeds	7.6	7.5	6.5	7.0	7.2	9.6	13.8	12.5
Hides & Skins	8.4	6.7	7.2	16.3	12.3	10.8	7.3	7.8
Pulses	2.5	2.8	2.0	1.9	7.3	4.1	3.8	4.3
<i>Chat</i>	6.6	12.2	15.6	13.2	10.8	12.0	14.7	12.2
Others	5.2	12.7	14.7	22.2	26.3	29.2	23.3	21.3
Total Export	100	100	100	100	100	100	100	100

Source: Survey of the Ethiopian Economy II (Draft) (MOFED, July 2005) for years up to 2003/04 and Computation based on NBE Data for 2004/05.

The creation of a dynamic private sector capable of seizing the many opportunities for growth and job creation existing in the country is a priority. This will require action on many levels including favoring integration in the world economy by promoting trade and non-traditional exports and by working towards the goal of joining the World Trade Organization (WTO), supporting the existing cottage industry/handicrafts sector which offers income diversification in rural areas, and attracting investment from both national and international investors.

3.9.2 Priorities for Action

Two broad pillars underpin the private sector development strategy: accelerated privatization, and strengthening the institutional framework supporting and enhancing the private sector.

Policy Reform and Creation of Institutional and legal Framework: The current legal and regulatory framework will be reviewed in line with the needs to support a dynamic private sector. The service delivery capacity of essential support services such as the Quality and Standards Authority of Ethiopia, the Ministry of Agriculture with regard to sanitary and phytosanitary standards, and the Ministry of Trade and Industry (MoTI) will be strengthened.

Direct support to the private sector: The organizational and managerial capacity of the private sector needs to be strengthened through interventions such as enhancing the role of the Chambers of Commerce, the professional and product line associations and trade support institutions. In collaboration with these key stakeholders, programs for entrepreneurship development and business management training will be organized and trade information and advisory services will be set up. Flows of resources, information and increased capacity to various sectors of the economy will be enhanced with schemes to promote investment, provide credit to Small and Medium Enterprises (SMEs) and more generally support the development of the informal sector, and transferring technology and upgrading extension services and training.

Trade facilitation: Ethiopia is a landlocked country with a difficult geography. Facilitating trade will require counterbalancing these disadvantages by creating an efficient and well-functioning trading system. The suggested improvements to the infrastructure networks will significantly contribute to enhanced trade. On the institutional side, efforts will focus on strengthening the customs authority of Ethiopia and streamline the activities of trade support services. Direct support to exporters with fiscal and credit schemes program will also be pursued.

3.9.3 Sectoral Needs Estimate

The overall costs for private sector development and trade facilitation amount to 3.6 billions, of which 0.5% for the policy, institutional and legal framework and for trade facilitation, and the balance for direct support to the private sector, with a micro-credit scheme for micro and small informal enterprises absorbing about 90% of the total project cost.

3.10. Sectoral Assessment for Urban Development

3.10.1. Urban Development and the MDGs

The MDG on ensuring environmental sustainability includes a target on achieving a significant improvement in the life of at least 100 million slum dwellers worldwide by 2020. The importance of urban development for achieving the MDGs is however much broader. Improved health status in urban areas calls for basic infrastructure and services – particularly in terms of water and sanitation, and waste collection and safe disposal – and for environmental regulation and land management, as often slums are on marginal areas more prone to natural disasters. The high population density that makes these requirements more urgent offers also great opportunities for sustained progress, as service delivery is relatively easy in urban areas. Targeted intervention in the poorest areas offer, therefore, a great potential in terms of bringing about improvements in terms of child and maternal mortality. On the economic side, urban areas can be hotbeds for the development of trade, services and industry – supporting private investment and employment creation in small and large urban areas plays therefore an important role in support of a balanced growth.

Currently Ethiopia is one of the least urbanised countries in the world, but comprehensive planning for urban development to offer more liveable and dynamic cities is a priority given the ongoing structural transformation and rural-urban migration. At least 70% of the urban population can be considered slum dwellers on the basis of indicators of quality of housing, living space (overcrowding), quality of infrastructure and services available to the households and to the neighbourhood, security of tenure and citizenship rights. Urban poverty incidence is high and shows no decline. Though on average it is less than in rural areas, there are large regional disparities in urban poverty, ranging from an estimated 61% urban poverty incidence in Tigray to 27% in Afar. Further, recent evidence suggests that ongoing urbanization might have resulted in declining access to services in urban areas, with migrants settling in peripheral areas more distant from services, jobs and markets.

3.10.2. Priorities for Action

Urban unemployment and poverty: Fighting poverty in urban areas needs to focus on raising returns to labour (e.g. with vocational and technical training), and fostering job opportunities through labour intensive community based public work and support to the micro-entrepreneurs and the self-employed, especially through access to credit. Targeted programs to facilitate capacity building and inclusion in the labour markets for special groups now marginal, such as beggars, street children, orphans and commercial sex workers, are also needed.

Improving urban governance is central to making cities more capable of responding to local needs and to create a good environment for private sector development and job creation. This involves increasing transparency, accountability and efficiency at all levels. Speeding up the ongoing municipal reform program and the approval of the draft comprehensive national urban development policy will be instrumental to reach these goals.

Institutional capacity needs to be built and existing vacancies in municipal government at the managerial, professional and technical level need to be filled. Reviews of organizational arrangements and appropriate equipment are needed, particularly for the cadastral system.

Infrastructure development calls for promoting community based infrastructure upgrading and management programs, constructing and upgrading various types of infrastructure, supplying essential heavy-duty machinery principally through pool systems and establishing mechanisms for coordination among the agencies involved in the production and delivery of infrastructure. Pilot programs to experiment with standards and management approaches will also be designed.

Housing upgrading is a key component of a strategy to improve the life of slum dwellers. A comprehensive analysis is needed to determine the proportion of slum housing units to be replaced and those to be upgraded, the amount of land needed and the acceptable residential density to be targeted.

Urban environmental issues need to be tackled by putting in place and implementing a regulatory framework, by promoting community based environmental protection and upkeep programs and by launching programs for workable soil conservation and forestation.

Urban civil society, including professional women and youth organizations, and grass root groups such as *iddirs* and *equbs* will be mobilised to collaborate in the slum improvement effort. NGOs will also play an active role in supporting the urban poor to access land, shelter and services through the provision of micro-finance.

3.10.3. Sectoral Needs Estimate

Total costs for urban development for the period 2005/06-2014/15 are estimated at USD 6.3 billion. The largest ticket item is housing which accounts for 56%; self employment generating activities accounts for about 7%, targeted programs for persons with disabilities about 6%; liquid waste management and capacity building account for 5.2 and 4.1 percent, respectively. Roads, including only access roads and being mostly gravel roads (70%) account for 3.0 % of the total. Operation and maintenance, which is shared by all the areas of intervention considered, accounts for 8.5 % of the total estimated cost. These interventions will be gradually phased in with a modest build up of activities in the first 3 years, followed by 5 years of more expanded activities before going back to more limited activities towards the end of the period once capital investment has taken place.

Chapter IV: The Macroeconomic Impact of the MDG Strategy/Plan

The sectoral assessments summarised in chapter III provide a static evaluation of expenditure requirements by sector. It would not be appropriate to determine the total resource requirements of the MDG strategy simply by summing up those sectoral costs, as they represent only partial analyses.

The MDG strategy involves significant general equilibrium effects. Further, as emphasised in chapter II, the rationale for scaling up is that the economy can be put on a higher growth path, thereby altering some of the static assumptions behind the sectoral cost.

The most important general equilibrium effects, which need to be considered in deriving overall resource requirements, are:

- (i) **Joint implementation of the sectoral plans creates synergies and constraints:** Progress on some of the MDGs (e.g. increased access to safe water) significantly contributes to progress on others (e.g. reduction in child mortality), thereby reducing the cost of achieving the MDGs jointly. At the same time, joint implementation of the sectoral plans implies increased pressures on scarce resources utilised by all the different plans. Pressures on skilled labour wages are the most likely of such constraints to emerge – and may result in significant increases in the costs of sectoral plans;
- (ii) **Increasing public and private resources due to economic growth will help finance MDG expenditure:** Over a ten-year period, implementing the MDG strategy is likely to affect significantly the private and public resources available, by affecting the growth rate (and therefore household consumption and fiscal revenues) and prices. For example, the expansion of infrastructure will support growth, in particular leading to an acceleration of growth when network effects can be reaped. And increases in wages can allow households to afford higher levels of private MDG expenditure (such as education and health expenditure);
- (iii) **The real exchange rate will be affected:** The most important indicator of changes in prices in the economy is the real exchange rate, which crucially affects competitiveness. Large inflows of aid could possibly be accompanied by an appreciating currency, thereby reducing the domestic purchasing power of foreign aid (and so increasing aid requirements to support the MDG expenditure) and deterring exports (which might negatively affect growth); and
- (iv) **Policy reform will impact efficiency:** The sectoral plans have been devised considering the current situation and capacity. As capacity is built and constraints to productivity growth are removed, sectoral costs might be reduced.

This chapter presents macroeconomic scenarios on the implementation of the MDG strategy that takes general equilibrium considerations into account. First, the chapter reviews the sectoral costs presented in chapter III (hence labelled MDG-UPP) and introduces an alternative estimate of sectoral requirements, which will be used for the purpose of comparison (section 4.1.) as a lower bound estimate (labelled MDG-LOW). Section 4.2. briefly reviews the model adopted and the scenarios which have been run on both the bottom-up sectoral requirements and the lower bound estimates. Section 4.3 presents macroeconomic scenarios on the implementation of the MDGs, while section 4.4 draws attention to the policy and implementation drivers of the expected macroeconomic performance.

4.1. An overview of sectoral costs used in the simulations

Table 4.1 below provides a summary of the partial sectoral assessments presented in chapter III, listing total sectoral costs, the share of each sector in the overall costs and the amounts the public sector is expected to face. The bulk of the interventions (71%) are in sectors identified as “pro-poor” in the SDPRP (rural development, education, water, health-HIV, roads). Roughly one quarter of the costs would be covered by community contributions and NGOs, with the rest to be covered by government expenditure from treasury and external finance (aid and loan).

Table 4.1: Overview of Bottom-up Sectoral MDGs Needs Assessment Costs (MDG-UPP/ Plan A)

Sector	Total sectoral costs (Million USD)	Sectoral share in total cost (%)	Total public spending (treasury + donor) (Million USD)
Education	16274	16.1	9583
Health	11501	11.3	8374
HIV/AIDS	8097	8.0	6000
Water and sanitation	7070	7.0	4468
Food security	1691	1.7	1691
Agriculture & Rural Development	6838	6.7	5129
Urban dev	6298	6.2	4145
Population	226	0.2	158
Gender	111	0.1	76
Private sector development	3555	3.5	2702
Roads	27540	27.2	23018
Irrigation/hydro/water infra	6378	6.3	5549
Telecom	3339	3.3	3005
power	600	0.6	568
Rail Way	1841	1.8	1657
Grand Total (Million USD)	101361	100.0	76123

Note Totals are in constant prices, estimates for infrastructural investment consider co-financing from the utilities. Companies themselves as well Available estimates of public sector are obtained as total sectoral cost – (households + community + NGOs)

As described in chapter III of uncertainty on how to cost sectoral requirements to reach the MDGs exist, in particular with respect of:

- (i) Whether the focus is narrowly on MDG only goals (e.g. to what extent post-primary education should be covered when costing the education MDG) and
- (ii) How to cost sectoral interventions not directly related to an MDG, but needed as part of an integrated strategy to support reaching the MDGs (and particularly MDG1)

Different solutions are possible. Independent work on Ethiopia (Lofgren-Diaz Bonilla 2005), which draws on approaches different from those followed by the sectoral MDG bottom-up assessment, will be used as a possible lower bound to the costs of an MDG strategy. Such lower bound estimates (MDG-LOW), amounting to roughly $\frac{3}{4}$ of the bottom-up sectoral

requirements, are adopted as a term of comparison to highlight how the overall macroeconomic impact of pursuing the MDGs is affected by the size of the intervention package adopted. Table 4.2 compares upper and lower bound estimates and summarises the key methodological differences adopted to derive the two sets of costs.

Table 4.2: Summary of differences in sectoral costs between upper and lower bound sectoral assessments

Sector	Lower bound	Upper bound	Key difference in lower bound estimates
Education	6650	9583	Lower bound based on less ambitious expansion of post-primary
Health	8374	8374	
HIV/AIDS	2224	6000	HIV/AIDS limited to measures sufficient to halt and begin to reverse the spread of the disease
Water and sanitation	4468	4468	
Food security	1691	1691	
Agri. & Rur.Dev.	4914	5129	*
Urban dev	3972	4145	*
Population	158	158	*
Gender	76	76	*
Private sector development	2589	2702	*
Roads	15664	23018	**
Irrigation/hydro/water infrastructure	3776	5549	**
Telecom	2045	3005	**
Power	387	568	**
Rail Way	1128	1657	**
Grand Total (Million USD)	58116	76123	

* Modelled as part of other government expenditure on the assumption that “other public expenditure” grows at a constant rate of 3% over the period.

** Expenditure anchored through ICOR to desirable growth rate to achieve MDG-1

The most notable difference is in the estimates of costs for public infrastructure. While the bottom-up approach is anchored in the existing development plans in the various sectors, the approach followed in deriving the lower bound estimates explicitly links the plans to the desired development target – in this case supporting growth appropriate to reach the halving of the poverty headcount MDG.

Comparing Ethiopia’s sectoral estimates with those obtained for other countries’ MDG needs assessments (Sachs et al. 2004), reveals that in terms of total costs, the upper bound estimates are higher than those for Uganda and Tanzania, while the lower bound ones are comparable to those for Uganda. In terms of public costs, upper bound estimates are comparable to those for Tanzania, because of greater reliance on private and community financing [see annex 1].

4.2. Model Structure and Scenarios Considered

A simple macroeconomic model has been constructed to simulate the effects of implementing the MDGs plan. The model is an aggregate, dynamic Computable General Equilibrium (CGE) model, built around an Ethiopian database for 2002, including a Social Accounting Matrix (SAM). Details on the model are presented in Annex 4.2.

Table 4.3 presents the key features of the scenarios, which have been constructed. The analysis focuses on the 10-year period between 2005/06 and 2014/15.¹⁴ The base case corresponds to a

¹⁴ For the initial period, 2002-2005, the model was set up to approximate actual real growth in GDP at market prices, government consumption, and government investment. The purpose was to assure that the

business-as-usual scenario, which can be sustained with a substantial but relatively moderate increase in external finance but does not allow for the achievement of the MDGs. The MDG scenarios include growth in government consumption and investment necessary to implement the MDG sectoral plans presented in the previous chapter. The macroeconomic issues raised above are discussed by reviewing alternative scenarios that differ in terms of financing sources (foreign vs. domestic), the strength of synergies between different sector programs (to what extent can they reduce overall real resource requirements?), and the extent to which the productivity of the government sector improves over time.

The MDGs scenario, run for both upper (MDG-UPP) and lower bound (MDG-LOW) estimates, bases the growth of government investment and consumption in the sectoral plans. At a variance with the sectoral estimates, a 20% reduction is applied to government consumption and investment because of the cost-saving effects of synergies.¹⁵ Additionally a pattern for the evolution of this expenditure over time is considered: the growth in government investment is frontloaded whereas government consumption grows at a constant rate. The large efforts at building capacity are assumed to pay off over the period, with a government labour productivity increase of 2 percent per year resulting in lower government costs (less government labour is required to provide services). Finally, the large public investment programme is assumed to have a positive effect on the economy: private-sector factor productivity responds positively to increases in the public capital stock, starting in 2009 when the network effects of infrastructure kick-in. The private sector TFP response has been calibrated to raise real GDP growth for 2006-2015 to the range of rates considered likely according to analysis conducted by MOFED (Weeks and Geda 2004).¹⁶ Note that such a rate would exceed the rate estimated to be needed to reach the MDG poverty reduction target, assuming that the poverty rate was stagnant between 1990 and 2002.¹⁷

results for the initial year of analysis, 2005, are a reasonable approximation of preliminary or projected data for this year.

¹⁵ Modelling work by Lofgren and Diaz-Bonilla (2004) supports such an assumption

¹⁶ The derived elasticity of the private sector TFP with respect to the public capital stock is 0.2, a value that falls within the range of econometrically estimated elasticity for developing countries. For example, using data from a large sample of developing countries, Dessus and Herrera (1996) estimate that the elasticity of GDP with respect to the public capital stock is 0.2.

¹⁷ Assuming a poverty elasticity of -1 with respect real GDP per capita, a 50 percent increase in GDP per capita is required to cut the poverty rate by 50 percent. The simulated annual growth rate for real GDP 2002-2005 is 4.6 percent. Given a projected population growth of 31 percent in 2002-2015, a 50 percent increase in GDP per capita during 2002-2015 requires an annual GDP growth rate of 5.6 percent for the period 2006-2015.

Table 4.3: Alternative scenarios for 2006-2015: Key Features

Scenario name	Features
Business as Usual (BAU) Scenario	<ul style="list-style-type: none"> ➤ Private sector TFP growth is calibrated to generate real GDP growth of around 5% (note that the estimated trend rate for 1994-2004 was 4.6%, and that MOFED studies suggest that sustainable levels of growth could range between 5 and 8%) ➤ Real government consumption and government investment grow at the slightly lower rate of 5.5%. ➤ Real domestic government borrowing grows at a rate of 5.2 percent per year (generating an annual growth rate of 1.9 percent for the stock of domestic government debt). ➤ Foreign government borrowing is fixed at the 2002 level (zero growth). ➤ Foreign grants fill the financing gap.
MDG Scenario	<p>Same as BAU except for that:</p> <ul style="list-style-type: none"> ➤ Growth in government consumption and investment are based on the MDGs sectoral plans, though reduced by 20 percent because of synergies; ➤ Government labour productivity grows by 2 percent per annum ➤ Private-sector factor productivity responds positively to increases in the public capital stock.

4.3. Macroeconomic MDGs Scenarios

Table 4.5 summarises the evolution of the key macroeconomic variables in the simulations conducted (see also Annex 4.3).

In the BAU scenario all macro aggregates, including GDP and total domestic final demand, grow at annual rates of around 5 percent. Assuming projected population growth rate of 2.1 percent, this results in per-capita household consumption growth of 2.8 percent. The GDP share of total tax revenues is expected to increase over time, and reaches 15 percent. Foreign aid per capita (defined as the sum of government foreign borrowing and grants) is expected to increase from \$13.7 in 2005 to \$24 per capita in 2015 (i.e. an increase by 75 percent),¹⁸ or from \$0.98 bn to \$1.96 bn.¹⁹

¹⁸ Note that the baseline does not include humanitarian aid

¹⁹ Given that external finance is growing over time (under all scenarios), the increase is smaller in present value terms (with calculations based on a discount rate of 5 percent).

Table 4.4: Summary of simulations for 2006-2015: Business as Usual and implementation of the MDG strategy (upper and lower bound estimates)

	2005		Simulations to 2015		
	values	units	BAU	MDG-UPP annual % growth 2006-2015	MDG-LOW
Absorption	10.43	bn US\$2005	5.25	10.61	8.60
Household Consumption	6.91	bn US\$2005	5.10	8.32	6.81
Government Consumption	1.55	bn US\$2005	5.50	10.45	8.10
Investment	1.96	bn US\$2005	5.57	16.49	13.65
Private Investment	0.94	bn US\$2005	5.64	9.56	7.67
Government Investment	1.02	bn US\$2005	5.50	20.65	17.39
Exports	1.45	bn US\$2005	4.64	11.00	11.58
Imports	3.04	bn US\$2005	5.85	18.36	14.68
Real Exchange Rate (price-level deflated)	100.00	indexed to 100	-1.10	-8.67	-6.92
Wage/Rent					
Labor with less than Secondary School	12.89	mn US\$2005	2.51	6.96	5.50
Labor with Secondary School or more	44.11	mn US\$2005	1.14	5.13	3.09
Private Capital	100.00	indexed to 100	2.18	5.01	4.19
Factor Income					
Labor with less than Secondary School	3.67	bn US\$2005	5.17	9.36	7.86
Labor with Secondary School or more	1.10	bn US\$2005	6.16	11.73	9.10
Private Capital	3.32	bn US\$2005	5.08	9.31	7.97
Real GDP at Factor Cost					
Total	8.02	bn US\$2005	4.89	7.70	7.22
Government	0.65	bn US\$2005	5.50	10.45	8.10
Private	7.38	bn US\$2005	4.83	7.42	7.14
<i>% of GDP in 2015</i>					
Direct Tax Revenue as % of Nominal GDP	6.03	% of GDP	5.98	12.54	12.62
Total Tax Revenue as % of Nominal GDP	15.24	% of GDP	15.19	22.84	22.63
<i>Index Value</i>					
Price Index for Government	100.00	indexed to 100	106.43	113.52	107.29
<i>Present Value</i>					
Foreign Aid Present Value		bn US\$2005	13.15	24.33	19.45
<i>Value in 2015</i>					
Foreign Aid -- Values in 2005 & 2015	0.99	bn US\$2005	1.96	5.36	3.58
Foreign Aid Per Capita -- Values in 2005 & 2015	13.83	US\$2005	24.05	109.64	65.48

The two scenarios capturing the effects of implementing the MDG strategy share some common features:

- Accelerated growth in government consumption and investment requires a strong increase in foreign aid – in the upper case scenario aid reaches \$110 per capita (\$65 in the lower case);
- A major determinant of this rapid increase in foreign aid is the expected rapid rate of appreciation in the real exchange rate, which reduces the value of foreign exchange, increasing the aid requirements for each unit of real government consumption and investment;
- An increase in skilled labour wages, reflected in a 14 percent increase in the price index for government services in the upper case scenario (7 percent in the lower case), contributing to increasing foreign aid requirements;
- The inflow of foreign resources allows a strong increase in household consumption, driven by higher real incomes, also permitting private savings and investment growth to accelerate;
- Private sector growth increases but the increase is less than that for government sector growth;
- Exports grow at a dynamic pace despite possible sensible currency appreciation; and
- Strong increases in real GDP growth, particularly in government services but also elsewhere in the economy.

Comparing the upper and lower bound MDG simulation highlights the sensitivity of key macroeconomic variables to the size of the scaling-up package. In particular:

- The lower-bound scenario entails slower government consumption and investment growth;

- Lower growth in government demand decreases strongly the increase in returns to labour, thereby reducing the pace of growth in household consumption; and
- The decrease in foreign aid requirements results in lower real exchange rate appreciation, in turn resulting in higher exports and more contained import growth.²⁰

4.4. The key policy issues underlying the macroeconomic impact of the MDG strategy

The scenarios presented above are useful guides for policy planning, particularly for the identification of foreign exchange requirements. They remain conditional, however, on a number of policy assumptions and strategic choices, which arguably make these estimates an optimistic assessment of the macro-economic impact of reaching the MDGs.

This section will review briefly the key policy issues which underlie these scenarios, and which require a close integration of the MDG planning with the PASDEP strategy, as already anticipated in section 1.3.

- **Sustainability of growth:** Chapter II has presented a review of the recent growth performance in Ethiopia, and the argument for scaling up to support the shift of the economy to a higher growth path. The ability of the suggested scaling up to achieve this shift and result in the expected sustained growth levels will depend on linking effectively the reform and the growth agenda;
- **Export growth:** An important feature of the scenarios presented is sustained export growth despite the indication in the simulation for significant currency appreciation. This is possible given the structural transformation to be brought about by the extensive public infrastructure program, and increases in the competitiveness of the overall economy will counteract the price disincentive that might be faced by possible currency appreciation. Significant improvements in efficiency brought about by key policy reforms such as improved land management and greater government efficiency would also support sustained export growth;
- **The extent of domestic financing:** The scenarios above assume limited domestic financing of the MDG plan as real domestic borrowing grows at a fixed pace. There is no growth in foreign borrowing. Domestic direct tax rates increase moderately where other tax rates are unchanged. Foreign grant aid is therefore expected to fill in the financing gap, in line with arguments made on the international arena (for example by the Millennium Project Report) that increases in such flows are a key element in the process of bringing the achievement of the MDGs within reach. To fill some of the gaps in external resources flows, increasing but prudent use of domestic borrowing is necessary;
- **Government efficiency gains and strong synergies** contribute to mitigate the macro-economic impacts of implementing MDG. Government efficiency gains will be sustained by the current efforts aimed at strengthening capacity and improving absorptive and administrative capacity. The reaping of strong synergies will be ensured by close coordination of sectoral policies, prioritizing interventions with the highest effectiveness in terms of delivering progress with respect to all the MDGs.

²⁰ The decrease in foreign aid is due to the fact that, given that tax rates are the same for the upper and lower bound scenarios and growth differences are small, the bulk of the decrease in government outlays is passed on to foreign aid; the rate of appreciation is lower due to the smaller foreign aid inflow; in its turn, less appreciation further reduces foreign aid needs, reinforcing this effect.

Chapter V: Monitoring Progress Towards the MDGs

This chapter details how the implementation of the MDG strategy is going to be monitored.

5.1. Background

Since 1996 a Welfare Monitoring System Program (WMSP) has been established in Ethiopia, building on institutions (such as the Welfare Monitoring Unit) already established in the then Ministry of Economic Development and Cooperation (MEDaC) now MOFED. The WMSP has been financed through the World Bank International Development Agency (IDA) credit and Norwegian Grant administrated by the World Bank. This Project phased out on December 31st 2004. The two main actors of the WMSP have been the CSA in terms of data collection and the Welfare Monitoring Unit (WMU) in terms of data analysis and elaboration. Sectoral ministries participate in the system through their sectoral monitoring systems.

The system has been adopted by the SDPRP to monitor progress in implementation and will be used to monitor progress towards reaching the MDGs – as indeed the PASDEP will consider the first 5 years of the MDGs strategy/plan.

The major outputs of the WMSP on the part of the WMU of MOFED have been:

- The WMU of MOFED issued the 1995/96 Household Income Consumption Expenditure (HICE) and Welfare Monitoring (WM) surveys-based “Poverty Situation Report” in March 1999;
- The second HICE and WM surveys were conducted in 1999 and the second study Report on poverty/welfare entitled the “Development and Poverty Profile of Ethiopia” was issued in March 2002. The latter was based on the 1999/2000 HICE and WM surveys data sets. This Report was characterised by significant improvements with respect to the previous one, such as clearly articulating methodologies adopted, making full use of the available data sets, handling the data and undertaking the analysis and issuing the results with in the time frame set in the Analysis Plan; and
- This Report served as an important input in the preparation of Ethiopia’s SDPRP issued in July 2002 and immediately submitted to the World Bank and IMF in 2002. The SDPRP (2002/03-2004/05) served as a framework for development cooperation between the Government of Ethiopia and Development partners.

5.2. Strengthening Monitoring and Evaluation of the PASDEP and MDGs Implementation

In the last year a new M&E Action Plan entitled "Strengthening SDPRP and Ethiopian MDGs Monitoring and Evaluation Action Plan" encompassing the period 2004/05-2009/10 has been formulated and adopted.

The M&E Action Plan is designed to:

- Monitor input and process indicators across levels of government (e.g. public expenditure, adoption of reforms) as measures of implementation;
- Monitor output indicators (e.g. education, health, infrastructure) at various levels of aggregation (household, *woreda*, national) as measures of institutional efficiency;
- Monitor developmental outcomes and final objectives to track overall progress;
- Relate performance to indicators of reform processes for decentralization and capacity building to provide information on the effectiveness of the reform process in improving outcomes; and
- Evaluate impact to determine the effectiveness of key government policies and programs in reaching desired objectives.

The Action Plan was presented to donors and civil society in the May 2004 M&E workshop. Subsequently a Memorandum of Understanding (MOU) has been agreed and signed in early August 2004 between MoFED and donors for support to the implementation of the M&E Action Plan (AP) at a total cost of USD\$8.5 million covering the activities during the coming five years of both the WMU of MOFED and the CSA.

Both the CSA and WMU have commenced preparations for the development of data/information management and dissemination systems. Capacity strengthening of the WMU is ongoing through the hiring of additional staff. A regular consultative process has been put in place with donors and civil society including a series of M&E workshops.

5.3. Further Strengthening Sectoral Monitoring Systems

The Welfare Monitoring System, which coordinates the overall Monitoring and Evaluation System, is fed information primarily from two sources (broadly defined): the CSA for primary sources and the various sectoral monitoring systems that are functionally linked to lower level executive bodies. The existing system, particularly the part that generates routine administrative data, needs to be strengthened and reporting requirements need to be further re-enforced.

In this regard, three major challenges still need to be addressed: (i) better integrating the wealth of routine data already generated by various federal institutions and their regional counterparts/branches into the common monitoring and evaluation system so that the outcomes of the M&E systems (results) are equally known among each actor and can be fed into policy discussions; (ii) better dissemination of the findings of M&E so that they feed into the thinking of senior policy-makers; and (iii) greater gender desegregation of data, and effective use of that data for planning and policy analysis.

There is also a need for further articulation of the SDPRP Policy Matrix and review of the indicator system. This is also one aspect of the implementation of the M&E Action Plan. The review of the existing SDPRP Policy Matrix has already completed by the WMU supported through hiring consultants. The consultants conducted the review process by holding discussions with officials of relevant ministries and the M&E Technical Team of the Development Assistance Group (DAG). New set of indicators have been introduced and old ones dropped following the review process. The indicators will be assessed primarily against measurability and feasibility (availability of data).

Discussion on survey plans/questionnaires to render data more user-oriented will also be pursued in the course of implementing the M&E Action Plan. The CSA regularly holds stakeholder workshop on its survey instruments and, as a result, have strengthened survey instrument to further capture gender dimension, HIV/AIDS, asset building to reduce vulnerability, and particularly with respect to basic data on the income dimensions of poverty.

Chapter VI: Conclusions: Achieving the MDGs in Ethiopia -The Way Forward

Ethiopia's long-term commitment to poverty reduction and its ultimate eradication in all its dimensions has animated Government strategies well before the MDG needs assessment process was initiated. This is most evident in the formulation of its PRSP of 2002 entitled the "Sustainable Development and Poverty Reduction Program -SDPRP", currently being updated by a five year plan entitled "Ethiopia: A Plan for Accelerated and Sustained Development to End Poverty -PASDEP". Aiming now to reach the MDGs represents a logical step to achieve this overarching objective, and an important goal around which to focus attention of the Government's and its development partners' efforts.

Such a partnership with all development stakeholders is vital to ensure success, as the challenges faced in this endeavour are significant and compounded by an overall context characterized by low income levels, high population growth, low productivity growth, a declining resource base and continuing food security pressures, and a volatile external and regional environment. Also the scale of resources called upon to achieve the MDGs is significant, and it would not be possible for Ethiopia to implement this comprehensive plan without external support in the scale and time required.

This report details the scale of the needs and the sectoral strategies that can put reaching the MDG within reach of Ethiopia. Such strategies have been elaborated in detailed sectoral reports and their joint impacts in terms of synergies and of macroeconomic effects have been presented. Translating this analysis into action requires that the findings of this report will be closely integrated in the new plan (PASDEP). This will ensure that the scaling up needed to generate sustained progress and to break out of the poverty traps currently affecting Ethiopia will take place within the framework of Ethiopia's overall developmental objectives and its overall macroeconomic plan.

The integration of this MDG Needs Assessment findings and the PASDEP will require giving priority to five cross-cutting themes which emerge from this Needs Assessment report, as well as the establishment of a comprehensive and disaggregated monitoring and evaluation system.

The growth agenda: It has already been noted that Ethiopia has chosen to take a holistic approach to developing an MDG strategy, explicitly incorporating growth considerations. This reflects the awareness that without sustainable and accelerated growth Ethiopia's goal of reaching the MDGs and more generally fostering human development cannot be achieved. This is particularly relevant for reaching Goal 1 of halving the poverty rate by 2015, but substantially impacts all other MDGs as growth provides the individual, household and public resources that bring about sustainable progress in terms of poverty reduction and more generally on development. The importance of these considerations is underscored by the analysis in chapter IV discussing the large resource requirements involved in MDG scenarios and the importance of growth for the overall macro-economic balance, and hence for the sustainability of the strategy itself.

Important elements of a growth strategy that need to be addressed to support the deployment of an MDG strategy include: managing volatility, as the scaling up agenda requires multi-year planning and continuity of efforts, and sustaining the efforts to foster a dynamic private sector by creating an enabling environment which allows it to become the engine of economic growth, employment and income generation.

Scaling up service delivery: Despite the policy emphasis already given to improvements in human development, the challenge of achieving the MDGs will require significant scaling up in service delivery, particularly at primary level, while aiming to develop balanced service delivery systems. Energetic efforts need to be waged to address disparities between groups and in particular across the gender divide need to continue to ensure inclusive development effort of the country. Effective service delivery and improved human development outcomes are important both in themselves, and instrumentally to increase productivity, ease the tensions on the labour market arising from the scaling up and ultimately to foster the socio-economic transformation that characterizes the development process.

Strengthening capacity and institutional reform: Implementing the wide-ranging sectoral strategies discussed in this report will require a massive organizational effort. This will require close coordination of sectoral policies and prioritising the most effective interventions in terms of delivering progress on all the MDGs while building stronger capacity. To ensure the sustainability of the overall strategy, it is important that current efforts aimed at improving absorptive and administrative capacity and tackling weak capacity and implementation bottlenecks particularly at the local level are continued. In the context of the ongoing decentralization, clear reporting and monitoring mechanisms will have to be in place to ensure accountability and coordination. These improvements will lay the foundations for a stronger and more efficient public sector, which, with the socio-economic transformation of the country, will be called upon to exercise more complex regulatory and oversight functions.

Improving and expanding infrastructure: Ethiopia's infrastructure stock is far below regional averages, and definitely insufficient for the development of integrated and well functioning markets and easy service delivery. Significant efforts have already been made to increase connectivity (in terms of roads and telecom) and such efforts will have to be continued and complemented by increased energy production and distribution, expansion of irrigation, etc. All these investments will bolster the productive stock of the country, and act in synergy to provide higher returns and make possible the diversification into new productive activities. While strengthening links between rural and urban areas and supporting a structural transformation, these investments will also contribute to decrease vulnerability by reducing the dependency on rain-fed agriculture.

The urban agenda – the development of a balanced system of urban centres that can act as poles for growth and commercialisation – is an important part of the development of the infrastructure backbone of the country. The development of multiple growth centres will strengthen the integration of the economy and create benefits of aggregation and economies of scale. At the same time, significant interventions and forward looking planning will be needed to create liveable cities providing employment opportunities and possibility of social integration to their growing population.

Further Strengthening On-going Domestic Resource Mobilization Efforts: Although domestic revenue has more than quadrupled compared to the pre-reform years (pre-1991), the available resource has not matched the increasing level of financing requirements given the narrow tax base and low level of per capita income. The problem of domestic resource mobilization (in the context of the envisaged economic transformation) could be addressed through a combination of avenues: strengthened implementation of the on-going tax reform, further improving the efficiency of tax administration, broadening the tax base (as the economy transforms from traditional to modern production systems), promoting private saving and investment, and social mobilization augmented by external finance in the context

of scaling up, harmonization, and improved predictability as well as increased trade and Foreign Direct Investment (FDI). Strengthening effective partnership with NGO community is another critical area to be utilized to leverage domestic resource and capacity for sustainable development and poverty reduction and its ultimate eradication.

In conclusion, Ethiopia stands at an unprecedented cross-road between proceeding with business as usual or seizing the opportunity to move up to a different development pattern leading to the realization of the vision of the MDGs and improved living conditions for millions of Ethiopians. This Report points to the existence of the technical solutions to shift to that path, without hiding the challenges and risks such path poses. What is needed to make the journey to 2015 a successful one is: political commitment, financial resources and careful implementation of this Strategy/ Plan

Annexes

Annex Table 1. 1: Selected Thematic/Sector Indicators and Corresponding Indicative Targets for PASDEP with in the Ethiopian MDGs Plan

S/N	Development Objective	Indicators	Base Line year	PASDEP/MDGs Target	
			2004/05	2009/10	2014/15
I.	Growth and Poverty				
1.1	Growth	Real GDP Growth Rate (%)	8.9%	On average a Minimum of 7 % Per annum over the period (2005/06-2009/10)	On average a Minimum of 7 % Per annum over the period (2005/06-2009/10)
1.2	Reducing Poverty	% Of people who are below the poverty line	36	25	18
1.3	Improving the Food Security Situation	% Of people who are below the food poverty line	33	22	16
II.	Agriculture and Rural Development				
		Growth of agricultural Value Added (%)	12	6 to 7% per annum over the period	
		Cumulative number of households who benefit from the extension package (in millions)	6.9	12	
		Cumulative number of cooperatives engaged in the distribution of improved seeds and fertilizer	4,092	6,645	
		Cumulative number of farming households who receive joint certificates (Million)	4.1	8	
		Development Agents (DAs) that receive extensive technical and vocational training in agriculture	23,445	65,915	
		Cumulative number of Farmers Training Centres (FTCs)	7,000	15,000	

III.	Improvement of Education Service					
		Gross Primary Enrolment (%)	79	100		
		Gross Secondary Enrolment (%)				
		No. of students registered in the first cycle primary schools (in million numbers)	10.4	16.4		
		No. of students registered in the second cycle primary schools (in million numbers)	3.3	7.5		
		Number of students registered in the first cycle secondary schools	711,838	745,576		
		Number of students registered in secondary schools	121,873	351,321		
		Preparatory admission	45,126	163,066		
		Higher education admission	47,458	119,408		
		TVET Admission	97,108	161,934		
		Post graduate admission	2,532	26,000		
		Completion rate of primary school (%)	34	55		
		Girls/boys ratio in primary schools (%)	80	95		100
		Girls/boys ratio in secondary schools (%)	52	74		
		Girls/boys ratio in higher education (%)	80	90		
		Average grade 4-8 repetition rate (%)	6.4	0.16		
		Primary school dropout rate (%)	14	2.6		
		1st grade dropout rate (%)	12.8	3		
		Text book/pupil ratio for core subjects for grade 1-8	2:1	1:1		
		Pupil/teacher ratio (1-8)	63.5	56.3		
		Classroom/pupil Ratio	1:69			
		Number of class rooms in primary schools	101,626	230,419		
		Pupil/section ratio in primary schools	73.1	61.5		

IV.	Improvement of Health Service				
		Under-five child mortality rate (deaths per 1,000)	126.8	76.9	67
		Infant mortality rate per 1,000	97	45	
		Maternal mortality rate (deaths per 100,000)	871	600	218
		Fertility rate	5.9	4	
		Access to health service (%)	70	100	
		Reduce morbidity rate attributed to malaria (%)	22	10	
		Immunization/ Diphtheria, Pertusis and Tetanus (DPT) 3 coverage (%)	61	80	100
		Nurses/population ratio	1:4,572	1:2,515	
		Doctors (health officers)/population ratio	1:26,527	1:14,662	
		Technicians/population ratio			
V.	Fighting HIV/AIDS				
		Reduction in Adult Incidence of HIV (%)	0.56	0.52	
		Overall HIV/AIDS Prevalence Rate (%)	4.4	4.4	
		% Of HIV positive pregnant women receiving a complete course of ARV prophylaxis to reduce the risk mother-to- child transmission (%)	42	50	
VI.	Expansion of Road Construction to facilitate social and economic development				
		Total road network (km)	37,395	60,017	
		Asphalt road (km)	5,102	9,508	
		Gravel road (km)	13,580	12,772	
		Rural feeder road (km)	18,713	37,737	
		% Of roads in good condition	64	84	
		% Of asphalt roads in good condition	57	72	
		% of gravel roads in good condition	37	67	
		% of rural feeder roads in good condition	34	46	
New road construction (k.m)	532	7,214			

		Road density (km/1000 km ²)	33.6	54.1	
		Road density (km/1000 people)	0.51	0.73	
		Areas above 5 kms away from all weather roads (%)	72	60	
		Average distance of areas from all weather roads (km)	15.2	9.4	
VI.	Improving the welfare of the society through keeping up the pace of population growth with economic growth				
		Birth rate (%)		4.4	
		Contraceptive prevalence rate (%)	23	45	
VII.	Improving access to potable water				
		Percentage of people with access to potable water:			
		Urban (%)	83	87	
		Rural (%)	37	52	
		Total	40	54	
		Cumulative farm land developed with medium and large scale irrigation (ha)	62,057	384,737	
No. of households who benefit from small scale irrigation schemes	394,500	670,500			
VIII.	Promotion of Gender Equality				
		Girls/boys ratio in primary schools	80	95	
		Girls/boys ratio in secondary schools	52	74	
		Girls/boys ratio in higher education	80	90	
		Representation of women in parliament (number of seats)	42	33% of seats	
IX.	Satisfaction of the demand for residential houses and improving the housing conditions				
		No. of people requiring residential houses (new ones)	1,548	1,867	
		No. of housing units requiring replacement with new ones	43,771	202,025	
		No. of housing units requiring improvements	30,659	84,540	

		No. of people requiring land for housing construction			
X.	Electricity	Access to electricity (%)			
		No of cities that have access to electricity			
XI.	Telecommunication	Access to telecommunication services with in 5 kms (%)	6	100	
		No. of localities with telephone	885	15,885	
		Persons with mobile telephone line (%)	0.56	5.2	
		Persons with fixed telephone line (%)	0.79	2	
XII.	Banking (Financial) Services	Access to bank services			
		Share of total savings out of total capital (%)	24.1		
		Share of total credit out of total capital (%)	23.9		
		Reduction of large Non-Performing Loan (NPL) portfolios for CBE (%)	29.7		
XIII.	Private Sector Development	Total credit outstanding to the private sector as % of GDP	17.9	24.8	
		Volume of micro finance credit (in million birr)	1,439.4	2,983	
		Outreach of MFIs (no. of clients in millions)	1	1.9	

Annex Table 4.1: Comparison of Ethiopia's Annual MDG Costs with those of Selected African Countries

Average yearly costs	Cost (Millions USD)	Per capita (USD)
TOTAL COSTS		
Ethiopia MDG needs assessment	10136	121
<i>Ethiopia - lower bound (***)</i>	7417	89
Scenario Based on Uganda's per capita cost (*)	7496	90
Scenario Based on Tanzania's per capita cost (*)	8390	100
PUBLIC COSTS		
Ethiopia MDG needs assessment	7612	91
<i>Ethiopia - lower bound</i>	5812	70
Scenario Based on Uganda (*)	6755	81
Scenario Based on Tanzania (*)	7555	90
Memorandum Items:		
Current pro-poor spending(**)	1445 (Estimated for 2004/05)	18.5 (assuming pop of 71.066 millions)
Current net aid (2002)	1309	19.4

(*) Population is projected to increase by 17 million people over the period 2006-2014; per capita figures are given based on an estimated average of 83.56 million;

(**) Pro-poor is defined following the SDPRP definition as including health, education, agriculture and rural roads

(***) As lower bound estimates have been derived for public costs only, total costs have been extrapolated on the basis of the financing structure (public versus private) adopted by the sectoral assessments.

Annex 4.2: Model Description

The model is an aggregate, dynamic CGE model. Most model features are standard. Production is divided into government services and non-government (private) goods and services. Private production is tradable (part is exported and, in domestic markets, it competes with imports) while the government only demands government service outputs. Both activities use three production factors, the two labour types and the relevant type of capital. Among the institutions, the single household represents the entire non-government. The household finances the bulk of its consumption and savings from factor incomes and, to a lesser extent, remittances from the rest of the world. Government revenues – taxes (direct and indirect), borrowing (domestic and foreign), and foreign grants – are primarily used to pay for different government services, many of which are directly related to different MDGs. In its interaction with the rest of the world, Ethiopia earns most of its foreign exchange from exports, remittances to households from abroad, and different forms of foreign aid. Most of these foreign exchange resources are spent on imports. Commodity prices, labour wages, and capital rents are determined in competitive markets. Over time, capital stocks (government and private) are updated on the basis of new investment, the stock in the preceding year, and depreciation. Growth for each type of labour is exogenous. Productivity growth depends on growth in the government capital stock. The economy operates under binding macro constraints and trade-offs: investments (private and public) cannot exceed available savings; foreign exchange spending is limited to foreign exchange earnings; and the government has to limit spending within its means.

This macro model does not determine endogenously the achievement of the MDG, but it is based on the assumption that the sectoral plans have been designed to achieve the MDG objectives. The assumptions on labour force growth and the strength of synergies are based on the findings of different modelling work, which directly tackled those issues (the MAMS model, see Lofgren and Diaz-Bonilla (2005) for an application to the Ethiopian case).

The desegregation of the model and the corresponding key accounts in the SAM are presented below.

Model Desegregation

Account type	Items
Activities/commodities	Government services Non-government (“private”) goods and services
Factors	Unskilled labour (less than completed secondary education) Skilled labour (completed secondary education or higher) Non-government (“private”) capital Government capital*
Institutions	Government (including separate accounts for direct taxes, domestic indirect taxes, and import tariffs) Household Rest of the world

*Following the national accounts, the returns to government capital are not covered in the SAM. However, a fixed quantity of government capital is required per unit of government services that are provided.

Annex Table 4.3: Model Simulations 2005/06-2014/15: Macro and government revenue data for alternative scenarios (% of GDP)

	2005	BAU	MDG-UPP	MDG-LOW
Private consumption	77.5	76.1	67.5	68.3
Government consumption	17.9	18.6	22.6	19.4
Private investment	10.5	11.0	10.3	10.0
Public investment	11.5	11.1	29.4	26.0
Exports	16.4	16.6	10.9	14.9
Imports	33.9	33.5	40.7	38.6
Absorption	117.4	116.9	129.8	123.7
GDP mp	100.0	100.0	100.0	100.0
Foreign Aid	13.6	14.4	28.8	22.4
Total taxes	15.2	15.1	22.8	22.6
Domestic borrowing	0.7	0.5	0.3	0.4
Total revenues	29.5	29.9	52.0	45.4

Note:

1. Row labels are mostly self explanatory; absorb = absorption = Total Final Domestic Demand = Private Consumption + Government Consumption + Private Investment + Public Investment

2. Column labels: 1st column refers to 2005; other columns refer to 2015 under different scenarios; BAU = business as usual; MDG-UPP = MDG scenario based on upper-bound cost estimates; MDG-LOW = MDG scenario based on lower-bound cost estimates

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