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PROJECT PERFORMANCE ASSESSMENT REPORT

ERITREA

HEALTH PROJECT
(CREDIT NO. 30230)

HIV/AIDS, MALARIA, STD AND TUBERCULOSIS CONTROL PROJECT
(CREDIT NO. 34440)

June 2, 2009

Sector Evaluation Division
Independent Evaluation Group, World Bank

Currency Equivalents (annual averages)

Currency Unit = Ethiopian Birr (ETB) and Eritrean Nakfa (ERN)

Health Project

(as of November 17, 1997, date of PAD)	*(as of June 16, 2005 date of ICR)*
$1 = ETB 7.10	$1 = ERN 13.5
ETB 1 = $0.141	ERN 1 = $0.074

HIV/AIDS, Malaria, STDs and tuberculosis (HAMSeT) Control Project

(as of November 27, 2000 date of PAD)	*(as of October 26, 2006, date of ICR)*
$1 = ERN 9.77	$1 = ERN 15.00
ERN 1 = $0.102	ERN 1 = $0.067

Abbreviations and Acronyms

AIDS	Acquired Immuno-deficiency Syndrome
ANC	Antenatal clinic
ART	Antiretroviral therapy
BCC	Behavior change communications
CAS	Country Assistance Strategy
CMHRP	Community-managed HAMSeT Response Program
DDT	Dichloro-Diphenyl-Trichloroethane
DHS	Demographic and Health Survey
DOTS	Directly Observed Therapy-short course
ELISA	Enzyme-Linked Immuno-sorbent Assay
ESMG	Eritrea Social Marketing Group
FBO	Faith-based organization
FHI	Family Health International
FY	Fiscal year
Global Fund	Global Fund to fight AIDS, malaria and tuberculosis
HAMSeT	HIV/AIDS, malaria, STIs and tuberculosis
HBC	Home-based care
HIV	Human Immuno-deficiency virus
HMIS	Health Management Information System
ICR	Implementation Completion Report
IDA	International Development Association
IEG	Independent Evaluation Group
IRS	Indoor residual spraying
ITN	Insecticide treated bed-net
LQAS	Lot Quality Assurance Sampling
M&E	Monitoring and evaluation
MOD	Ministry of Defense
MOE	Ministry of Education
MOH	Ministry of Health
MOLHW	Ministry of Labor and Human Welfare
MOTC	Ministry of Transport and Communication
NATCoD	National HIV/AIDS/STI and Tuberculosis Control Division
NCEW	National Confederation of Eritrean Workers
NMCP	National Malaria Control Program
NRS	Northern Red Sea
NTCP	National Tuberculosis Control Program
NUEW	National Union of Eritrean Women
NUEYS	National Union of Eritrean Youth and Students
PAD	Project Appraisal Document
PER	Public Expenditure Review
PHARPE	Public Health and Rehabilitation Program in Eritrea
PHC	Primary health care
PLWHA	People living with HIV/AIDS
PMU	Project Management Unit
POP	Persistent organic pollutants
QER	Quality Enhancement Review
RGBIS	HIV/AIDS Risk Groups and Risk Behavior Identification Survey
RRI	Rapid Results Initiative
SRS	Southern Red Sea
STI	Sexually transmitted infection
TB	Tuberculosis
UNAIDS	Joint United Nations Program on HIV/AIDS
UNICEF	United Nations Children's Emergency Fund
USAID	United States Agency for International Development
VCT	Voluntary counseling and testing
WHO	World Health Organization

Fiscal Year

Government:	January 1 – December 31
World Bank	July 1– June 30

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IEGWB Mission: Enhancing development effectiveness through excellence and independence in evaluation.

About this Report

The Independent Evaluation Group assesses the programs and activities of the World Bank for two purposes: first, to ensure the integrity of the Bank's self-evaluation process and to verify that the Bank's work is producing the expected results, and second, to help develop improved directions, policies, and procedures through the dissemination of lessons drawn from experience. As part of this work, IEGWB annually assesses about 25 percent of the Bank's lending operations through field work. In selecting operations for assessment, preference is given to those that are innovative, large, or complex; those that are relevant to upcoming studies or country evaluations; those for which Executive Directors or Bank management have requested assessments; and those that are likely to generate important lessons.

To prepare a Project Performance Assessment Report (PPAR), IEGWB staff examine project files and other documents, interview operational staff, visit the borrowing country to discuss the operation with the government, and other in-country stakeholders, and interview Bank staff and other donor agency staff both at headquarters and in local offices as appropriate.

Each PPAR is subject to internal IEGWB peer review, panel review, and management approval. Once cleared internally, the PPAR is commented on by the responsible Bank department. IEGWB incorporates the comments as relevant. The completed PPAR is then sent to the borrower for review; the borrowers' comments are attached to the document that is sent to the Bank's Board of Executive Directors. After an assessment report has been sent to the Board, it is disclosed to the public.

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Outcome: The extent to which the operation's major relevant objectives were achieved, or are expected to be achieved, efficiently. The rating has three dimensions: relevance, efficacy, and efficiency. *Relevance* includes relevance of objectives and relevance of design. Relevance of objectives is the extent to which the project's objectives are consistent with the country's current development priorities and with current Bank country and sectoral assistance strategies and corporate goals (expressed in Poverty Reduction Strategy Papers, Country Assistance Strategies, Sector Strategy Papers, Operational Policies). Relevance of design is the extent to which the project's design is consistent with the stated objectives. *Efficacy* is the extent to which the project's objectives were achieved, or are expected to be achieved, taking into account their relative importance. *Efficiency* is the extent to which the project achieved, or is expected to achieve, a return higher than the opportunity cost of capital and benefits at least cost compared to alternatives. The efficiency dimension generally is not applied to adjustment operations. *Possible ratings for Outcome:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

Risk to Development Outcome: The risk, at the time of evaluation, that development outcomes (or expected outcomes) will not be maintained (or realized). *Possible ratings for Risk to Development Outcome:* High Significant, Moderate, Negligible to Low, Not Evaluable.

Bank Performance: The extent to which services provided by the Bank ensured quality at entry of the operation and supported effective implementation through appropriate supervision (including ensuring adequate transition arrangements for regular operation of supported activities after loan/credit closing, toward the achievement of development outcomes. The rating has two dimensions: quality at entry and quality of supervision. *Possible ratings for Bank Performance:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

Borrower Performance: The extent to which the borrower (including the government and implementing agency or agencies) ensured quality of preparation and implementation, and complied with covenants and agreements, toward the achievement of development outcomes. The rating has two dimensions: government performance and implementing agency(ies) performance. *Possible ratings for Borrower Performance:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

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This report was prepared by Gayle H. Martin with the assistance of Martha Ainsworth, who assessed the project in January/February 2008. Marie-Jeanne Ndiaye provided administrative support and assistance with data entry.

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PRINCIPAL RATINGS

	*ICR**	*ICR Review**	*PPAR*
Health Project (Credit 30230)			
Outcome	Unsatisfactory	Moderately unsatisfactory	Moderately unsatisfactory
Institutional Development Impact**	Substantial	Substantial	———
Risk to Development Outcome	———	———	Moderate
Sustainability***	Likely	Likely	———
Bank Performance	Satisfactory	Satisfactory	Moderately satisfactory
Borrower Performance	Satisfactory	Satisfactory	Moderately satisfactory
HIV/AIDS, Malaria, STDs and Tuberculosis Control Project (Credit 34440)			
Outcome	Satisfactory	Moderately satisfactory	Moderately satisfactory
Institutional Development Impact**	Substantial	Modest	———
Risk to Development Outcome	———	———	Moderate
Sustainability**	Likely	Likely	———
Bank Performance	Satisfactory	Satisfactory	Satisfactory
Borrower Performance	Highly satisfactory	Satisfactory	Satisfactory

* The Implementation Completion Report (ICR) is a self-evaluation by the responsible Bank department. The ICR Review is an intermediate IEGWB product that seeks to independently verify the findings of the ICR.
**As of July 1, 2006, Institutional Development Impact is assessed as part of the Outcome rating.
***As of July 1, 2006, Sustainability has been replaced by Risk to Development Outcome. As the scales are different, the ratings are not directly comparable.

KEY STAFF RESPONSIBLE

Project	*Task Manager/Leader*	*Division Chief/ Sector Manager*	*Country Director*
Health Project (Credit 30230)			
Appraisal	David Dunlop Sundararajan Srinivasa Gopalan	Arvil Van Adams	Oey Astra Mesook
Supervision	David Berk Montserrat Meiro-Lorenzo Eva Jarawan Christopher Walker		
Completion	Christopher Walker	Dzingai Mutumbuka	Colin Bruce
HIV/AIDS, Malaria, STDs and Tuberculosis Control Project (Credit 34440)			
Appraisal	Eva Jarawan	Arvil Van Adams	Oey Astra Mesook
Supervision	Eva Jarawan Christopher Walker Son Nam Nguyen		
Completion	Son Nam Nguyen	Dzingai Mutumbuka	Colin Bruce

Preface

This is the Project Performance Assessment Report (PPAR) for the Health Project and the HIV/AIDS, Malaria, STDs and Tuberculosis (HAMSeT) Control Project. The Health Project (FY1998–2005), the first World Bank supported project in the country's health sector, was financed through IDA Credit No. 3023 in the amount of $18.3 million (SDR 13.4 million), a grant from Norway of $2.7 million (NOK25.0 million) and planned government contribution of $3.5 million. The credit was approved on December 16, 1997, became effective on May 28, 1998, and was 96 percent disbursed when it closed on December 31, 2004, 18 months after the original closing date. The HAMSeT Control Project (2001–2006) was financed through IDA Credit No. 3444 in the amount of $40.0 million (SDR 31.4 million), with planned government contributions of $10.0 million. The credit was approved on December 18, 2000, became effective on March 1, 2001, and closed as planned in March 2006. A follow-on project, the HAMSeT II Project financed by an IDA credit of $24.0 million, is currently being implemented.

This PPAR was prepared by an IEG team consisting of Gayle H. Martin (Senior Evaluator and Task Manager) and assisted by Martha Ainsworth (Human Development Cluster Coordinator), who visited Eritrea in January/February 2008. The mission met with representatives from the Ministry of Health (MOH) and five other ministries, donors, non-governmental entities, faith-based organizations as well as people with HIV/AIDS. The mission visited four of Eritrea's six regions (*zobas*) and visited community-based HAMSeT sub-projects and health facilities (including the two hospitals built under the Health Project). Other sources of evidence consulted include: (a) interviews with relevant World Bank staff, (b) World Bank project files, (c) project-related reports, (d) economic and epidemiological data, studies, surveys and research, and (e) primary analysis of the community-managed sub-project data for the HAMSeT Control Project (see Annex E).

This PPAR will contribute to a forthcoming evaluation by IEG of the World Bank's support to health, nutrition and population outcomes. As such, more material has been presented in this "enhanced" PPAR than is the IEG standard.

The IEG team gratefully acknowledges all those who made time for interviews and provided documents and information. Following standard IEG review procedures, copies of the draft PPAR were sent to the relevant government officials and agencies for their review and feedback. However, no comments were received.

Summary

This Project Performance Assessment Report assesses the development effectiveness of two projects—the Health Project and the HIV/AIDS, Malaria, STDs and Tuberculosis (HAMSeT) Control Project—in the context of the World Bank's overall support to Eritrea's health sector during the period 1997–2006, as well as other Bank-financed products such as economic and sector work.

When Eritrea joined the Bank in 1995 the country was emerging from three decades of war. Eritrea is one of the poorest countries in the world with an estimated per capita GDP of $200. Throughout project implementation Eritrea was either under conflict or simultaneously a post-conflict and fragile state. Following strong growth performance in the early 1990s, the macroeconomic situation progressively worsened after border hostilities resumed in 1998. Of the country's 3.2–4.9 million people, two thirds live in poverty. Health expenditure is low (between $8 and $13 per capita) and highly donor dependent with external assistance accounting for more than two thirds of total public sector health spending. Furthermore, the health sector faces serious human resources constraints. Over the past decade malaria, HIV/AIDS and tuberculosis have ranked among the top causes of mortality and morbidity.

The objective of the Health Project (FY1998–FY2005) was to improve the health status of Eritreans, and it mainly financed: (i) the construction of two hospitals, (ii) the refurbishment of 30 clinics, drugs and medical supplies, (iii) the National Malaria Control Program, and (iv) the establishment of the National Blood Transfusion Service. The HAMSeT Control Project (FY2001–FY2006) objective was to reduce mortality and morbidity from the HAMSeT diseases. The project mainly supported the HAMSeT disease control programs in the Ministry of Health, disease control efforts in selected non-health sectors, and community-based disease control efforts. A follow-on project, the HAMSeT-II Project, is currently being implemented.

The Health Project had mixed results. Project implementation coincided with significant improvements in the health indicators (e.g., infant and child mortality). Many of these improvements could be linked to project-financed outputs such as clinic refurbishment and the provision of drugs and medical supplies. There were, however, other indicators that the project sought to influence but was less successful (e.g., malnutrition). The hospital investment expanded the sector's physical infrastructure—through the construction of the Barentu and Mendefera Hospitals—but the returns to the investment have not yet been fully realized because the expanded capacity is under-utilized. In 2007, a year after their opening, the two hospitals had among the lowest bed occupancy ratios in the country.

Both projects financed malaria control activities and substantially contributed to the reduction in malaria morbidity in excess of the target of "80 percent reduction" set by the Minister of Health in 1999. The interventions—prompt diagnosis and treatment of malaria cases, insecticide treated bed-net distribution and re-impregnation, indoor residual spraying, larvaciding and source reduction—were significantly associated with lower malaria incidence, even after controlling for fluctuations in rainfall. Eritrea was the first country in Africa to achieve the Abuja targets for Roll Back Malaria. The MOH's evidence-based planning and performance monitoring is best practice in malaria control. The Bank was the largest single source of funding to the malaria

control program, although other important sources of funding for malaria were: USAID and the Italian Cooperation, and in recent years, the Global Fund to fight AIDS, Malaria and Tuberculosis.

In the area of tuberculosis control, the HAMSeT Control Project financed tuberculosis drugs, information dissemination, capacity building for the National Tuberculosis Control Program, health worker training, procurement of diagnostic microscopes and related medical supplies in support of the expansion of the directly observed treatment-short course (DOTS) program. Information dissemination had limited success, and in 2005 a tenth of women did not know any tuberculosis symptoms, and knowledge of the most distinguishing features of tuberculosis was extremely low. Case detection rates continued to leave room for improvement, but there was greater success at expansion of the DOTS program and treatment of identified tuberculosis cases. There has been a downward trend in tuberculosis morbidity in recent years largely thanks to the *zoba*-level services. At the national level, there were staffing problems and lagging performance of the tuberculosis control program. It is a missed opportunity that there has not been greater learning, sharing and adoption of practices between the malaria and tuberculosis control programs in the areas of planning, monitoring and evaluation.

The HAMSeT Control Project financed a range of HIV prevention activities including: extensive awareness-raising among the general population and among key risk groups, HIV/AIDS and life-skills education in the schools, blood safety and encouraging voluntary counseling and testing among the general population as well as high risk groups. Implementation was through seven ministries including the defense force, non-governmental entities and community structures through the Community-managed HAMSeT Response component. The extent of coverage of risk groups (other than the military) was hard to ascertain, and information on behavior change was limited and particularly challenging to interpret in the context of a general population that already had relatively low HIV risk. The almost universal coverage of HIV prevention in the military was an important success given that nearly every young adult spends some time in the military (because of the national conscription policy) and the fact that the demobilized military was the most important source of HIV risk at appraisal. Interventions targeting sex workers were implemented in all major urban areas. Despite limited behavioral data, the declining trend in HIV prevalence among 15-24 year olds as well as declining STI prevalence suggests important successes in HIV prevention. The project was also successful at extending care and support for people with HIV/AIDS, support to orphans and vulnerable children, and stigma reduction.

IEG rates the outcome of the Health Project as moderately unsatisfactory. The objective to improve the health status of Eritreans was consistent with the post-conflict situation, and remains relevant given the country's prioritization of human development investments. The contribution of the investments to the project objective is constrained by under-utilization of the project hospitals which accounted for about two thirds of the total project costs. It is, however, possible to make strong links between some of the other project investments and health outcomes, notably in the area of malaria control and improvements in blood safety. Bank and borrower performance are rated moderately satisfactory. There were weaknesses in quality-at-entry on the Bank's side, and on the borrower side, the numerous hospital design changes well into hospital construction and some initial weaknesses in overseeing construction caused substantial delays. There were also other factors—economic and security-related—that were beyond the Bank and borrower's control.

The overall outcome of the HAMSeT Control Project is rated moderately satisfactory based on the following disease-specific ratings. Malaria control is rated highly satisfactory because the sustained and targeted malaria control efforts resulted in continued declines in malaria morbidity even in the face of increases in average rainfall, as in 2004. HIV/AIDS/STIs control is rated moderately satisfactory because of near universal coverage of the military with HIV prevention interventions, the country's most important HIV risk group, targeting of other risk groups such as sex workers, expanded voluntary counseling and testing, coupled with evidence of declining HIV trends in young adults and declining STI trends. There was some inefficiency in the implementation of the community-managed program, due to some weaknesses in coordination with sectoral interventions. This component did however substantially contribute to reducing stigma and extending care and support to orphans and people with HIV/AIDS. Tuberculosis control is rated moderately unsatisfactory largely due to continued low case detection rates and because the persistent programmatic weaknesses raised doubts about attribution of the downward trends in tuberculosis morbidity to the project. The sectoral participation in the HAMSeT Control Project was prioritized based on sectors' comparative and strategic advantage in HAMSeT disease control, and benefited from strong leadership by MOH. The design of the community-managed program, however, lacked detail and caused implementation to suffer early in the project, although after the mid-term review many weaknesses were addressed. Against the backdrop of persistent security challenges, worsening economic conditions and continued human resource constraints, Bank and borrower performance are rated satisfactory.

While several factors bode well for the sustainability of the two projects' achievements (e.g., the high level of government commitment and ownership, increasing utilization of health facilities and the highly successful malaria program and strong reliance on community involvement) the persistent "no war no peace" situation continues to pose economic and security risks. In the face of the food and fuel crisis, the government's difficult fiscal position will likely constrain the sector's future resources. The risk to development outcome for both projects is therefore rated moderate.

The most important lessons are:

- **In post-conflict settings engagement is a means to an end, and needs to be accompanied by a sustained policy dialogue to ensure that development gains are realized in the medium term.** In the late 1990s the Bank's dialogue with Eritrea's health sector was highly contentious, but despite the initial technical disagreements the Bank engaged the sector. While the Health Project was not fully successful, it is unlikely that the development gains in the decade that followed under the HAMSeT projects would have been realized in the absence of the early engagement in the sector. The content of the sectoral dialogue that followed the initial engagement was able to steer the sector from the post-conflict "reconstruction mode" to a "development mode." The reorientation of the sectoral priorities was only possible with sustained and sometimes challenging dialogue underpinned by analytical work.
- **In the area of HIV/AIDS a demand-driven model of community sub-projects is more appropriate for service delivery interventions that are responsive to local community needs (such as home-based care, support to orphans and vulnerable children) than for preventive interventions targeting stigmatized risk groups or stigmatized behavior**. The community component was based on a demand-driven

model that is a part of many HIV/AIDS projects. In the HAMSeT Control Project the community component financed a combination of HIV/AIDS prevention, care and support activities. The project experience demonstrated that community demand (on which the demand-driven approach is based) is sub-optimal as a basis for allocation for programs aimed at stigmatized risk groups or behavior.

- **Community activities that are strategically planned and coordinated with the local health authorities can provide an important complement to health facility-based disease control efforts.** Community outreach and community-based activities proved to be key elements of the highly successful malaria control efforts. In contrast, the strong reliance on facility-based interventions was a key factor underpinning the low case detection rate in the less successful tuberculosis control program.
- **Disease control projects can be complementary to—and need not undermine—cross-cutting health system functions.** In the HAMSeT Control Project various cross-cutting functions and systems were strengthened (e.g., health promotion, disease surveillance, laboratory service, drug distribution) because the sector's leadership sought to achieve programmatic efficiencies across individual disease control programs instead of duplicating these systems for each disease control program. This experience is particularly important given the debates in the international health community about the negative impacts of disease-specific projects on health systems.
- **Multi-sector projects, such as HIV/AIDS projects, achieve better results if the sectors involved are strategically chosen according to their comparative advantage in disease prevention and control.** The HAMSeT Control Project prioritized the participation of sectors based on the comparative advantage of each sector in HAMSeT disease control, allowing the country's disease control efforts to balance comprehensiveness with selectivity in order to achieve maximal disease impact.

Vinod Thomas
Director-General
Evaluation

1. Introduction

Background and Context

1.1 Eritrea is one of the poorest countries in the world with an estimated per capita gross domestic product (GDP) of $200 in 2006.[1] Two-thirds of the population live in poverty[2] and in 2007 the country ranked 157th among 177 countries in the Human Development Index.[3] After three decades of war and *de facto* independence in 1991, the country inherited a shattered economy, devastated infrastructure, and neglected social sectors. A third of the population was displaced. By the late 1990s the country appeared on the way to economic recovery—evidenced by 10.9 percent average annual (nominal) growth rate[4]—and extensive reconstruction and rehabilitation. However, the 1998–2002 border hostilities with Ethiopia, and the consequent and on-going 'no war no peace' situation have marred economic performance. Average annual growth slowed to 3.6 percent for 2003–2005 and in 2007 the economy contracted. Throughout project implementation Eritrea was either under conflict or was simultaneously a post-conflict and fragile state. The country currently faces unsustainable fiscal deficits and precariously low foreign exchange reserves. The timeline in Annex D summarizes some of the key events in the country and the health sector's history.

1.2 ***Trends in HNP indicators.*** Since the 1990s the improvements in infant and child mortality have exceeded the pace of improvement in other countries in Sub-Saharan Africa (Figure 1-1).[5] Despite these gains, some indicators continue to lag (e.g., maternal mortality ratio)[6] and the improvement in health status has been uneven, especially among the poor (Figure F– 1 in Annex F). Infectious and parasitic diseases such as malaria, tuberculosis and HIV/AIDS accounted for the single largest source of death in Eritrea (44 percent). Other important causes of mortality were: respiratory infections (16 percent) and non-communicable diseases (22 percent) (Table F-2 in Annex F). Eritrea has the full range of malaria endemnicity—from Gash-Barka and Debub *zobas* with hyper-endemic transmission to the plateau (including Asmara) that has much lower levels of transmission, to the South Red Sea *zoba* that has very few cases. The country experienced an exceptional increase in malaria morbidity and mortality in 1997–1998 due to unusually high rainfalls (Figure 1-2 in Box 1-1). Tuberculosis, an air-borne disease, is

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1. Gross national income (GNI) per capita has fallen from $220 to $170 between 1998 and 2005; in international purchasing power parity (PPP) terms, GNI dropped from $1,220 to $1,010 over the same period (World Bank 2008a).

2. World Bank (1996a). The country has never had a population census since independence. The Ministry of Development Planning maintains that the population size is about 3.2 million while according to other sources, including the international community, it as high as 4.9 million—a difference of more than a third. This uncertainty influences the sampling of demographic, economic as well as health surveys, the estimation of population-based indicators and the interpretation of any change in indicators over time.

3. UNDP 2007.

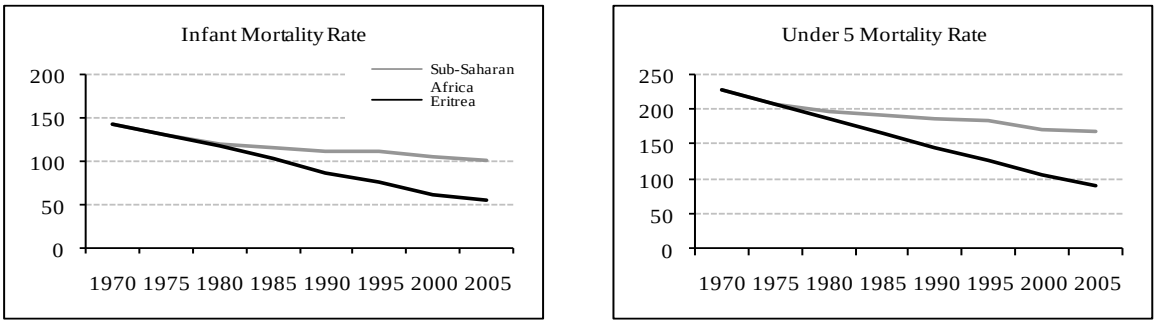
4. World Bank 2008b (pii).

5. Infant mortality rate (IMR) decreased from 72 to 48 deaths per 1,000 live births, and the under-five mortality rate, dropped from 136 to 93 deaths per 1,000 live births between 1995 and 2002 (Macro International 1995, 2002).

6. In 2000 the maternal mortality ratio was estimated at 630 deaths per 100,000 live births (WHO 2006).

found throughout the country, with the highest morbidity and mortality rates in Southern Red Sea (SRS), Maekel and Gash Barka. The first AIDS case was reported in 1988 in the southern port, Assab. The AIDS epidemic can be characterized as a low prevalence epidemic that is concentrated in specific risk groups (sex workers, active and demobilized military conscripts, truckers, as well as the sexual partners of these groups). National sentinel surveillance in 2001 revealed an HIV prevalence rate of 2.8 percent among antenatal clinic attendees, but with higher infection rates among specific groups—female bar workers (22.8 percent) and military personnel (4.6 percent) (Table 3-4). Heterosexual contact is the main form of HIV transmission. In Eritrea the overwhelming majority of men are circumcised, an important protective factor in sexual transmission of HIV.[7]

Figure 1-1. IMR and child mortality rate relative to Sub-Saharan Africa, 1970–2006



Source: World Bank 2006a.

1.3 ***Health Expenditure.*** Health expenditure is low and highly donor dependent. Per capita total public (government and donor) health expenditure in 2005 was between $8 and $13 and external assistance accounted for more than two thirds of total public sector health spending (Table F-3 in Annex F).[8] The country's difficult economic and fiscal position will likely constrain future increases in government health spending. Cost recovery through user fees has been an important source of funding to complement the relatively modest government health spending of about $3 per capita (between 1996 and 2006; see Table F-3 in Annex F).[9] Consequently household spending on health care is high; in 2000 poor households spent more than a tenth of household consumption expenditure on health care.

7. The rate of male circumcision in Eritrea is estimated at 95 percent, according to Williams et al. 2006. Three randomized controlled trials have confirmed that male circumcision is associated with a reduction in female-to-male transmission of HIV by 50-60 percent (Auvert et al. 2005, Bailey et al. 2007, Gray et al. 2007).

8. Author's calculation based on government expenditure reported in Table F-3 (World Bank 2008b) and population estimates used in the HMIS. The 1993 World Development Report estimated that a basic package of services cost $12 (World Bank 1993). In 2001 the Macroeconomic Commission on Health estimated that $34 is needed in low income countries (LICs) to implement a basic package of essential health services (WHO 2001). The main difference between the two estimates is that the Commission explicitly took into account some health system investments, and used more detailed cost analyses.

9. In 2002, user fees accounted for more than a tenth (US$1.2 million) of government recurrent health expenditure ($10.7 million) (World Bank 2008b).

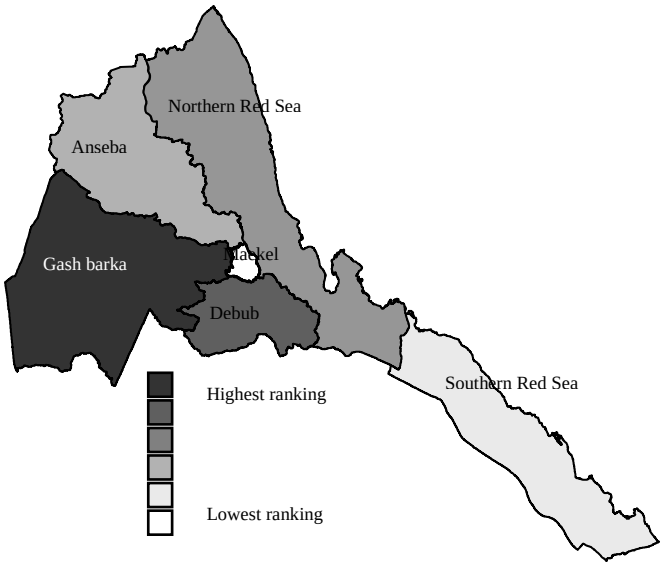
1.4 Health service delivery is largely through government-owned health facilities through a system of national referral hospitals, *zoba* referral hospitals, hospitals, health centers and health stations. Currently 62 percent of all health facilities are government-owned, and just under a fifth is owned by faith-based organizations (FBOs) and a fifth by private industry. In recent years the private health sector has expanded—mainly in Asmara and the large towns.[10]

Box 1-1. Malaria in Eritrea

The distribution of malaria risk across the country is strongly influenced by climatic, altitude and rainfall differences (see map).[a] Malaria transmission is highly seasonal and mainly in the south and western parts of the country during September–November, while the eastern coastal zones have highest transmission between January and April. There are, however, some areas where malaria risk persists throughout the year, mainly linked to the existence of man-made water sources. In 2006 Gash Barka accounted for three quarters of the country's malaria morbidity and more than half of the country's malaria mortality. While Debub had the second highest number of malaria cases, it has the second lowest malaria mortality (most likely due to better access to health services).[b] According to a prevalence survey in 2000/01, houses with mud walls were associated with higher malaria risk (after adjusting for rainfall and altitude). Chloroquine resistance is widespread in Eritrea.

During the epidemic outbreak between 1997 and 1998 the number of malaria cases increased from 171,200 to 254,100. In Anseba the caseload increased by 94 percent and in Northern Red Sea (NRS) by 105 percent. In Gash Barka and Debub the reported cases increased by a third and a half, respectively.

Figure 1-2. Ranking of malaria morbidity rate in 1998



Source: Adapted from MOH 2007a.

Source: Graves 2004; Nyarango et al. 2006; MOH 2004a.

a. The central highlands run north-south (altitude 1,500–2,000 meters) and descend on the east to a coastal desert plain (1–1,000m), on the northwest to undulating terrain and on the southwest to flat-to-rolling plains and lowlands (600–1,500m).

b. Another possible explanation is immunity to malaria in high-transmission areas which the other areas do not have. However, this does not explain the difference in mortality between Gash Barka and Debub *zobas*.

10. MOH 2006a (p22).

Government Health Strategy

1.5 Eritrea has few natural resources and shortly after independence the country's approach to development strongly emphasized human resource development, as reflected in the Government of Eritrea's (GOE) macroeconomic policy and development strategy released in November 1994, just before joining the Bank in 1995.[11] The objectives of the health sector are to reduce and eventually eliminate death from easily preventable diseases, and to enhance awareness of good health practices in order to improve the productivity of the work force. This is to be achieved by: giving priority to primary health care in controlling major health hazards, encouraging private sector participation, community and beneficiary contribution in health finance, and promotion of healthy practices.

1.6 The MOH was initially focused on rebuilding the health infrastructure in the 1990s; the next five years was characterized by a focus on communicable disease control and child health; and in recent years on addressing the sector's human resource shortages and maternal health. Since 1991 13 hospitals, 19 health centers and 112 health stations have been constructed.[12] A substantial part of the MOH expertise was derived from experience with running the military health services during the war of independence. For this reason, the health sector benefited from a small but experienced cadre of health professionals and para-professionals to provide leadership to the development of the sector. Nonetheless, human resources were a key constraint facing the health system—in 1999 the ratio of physicians per 1,000 people was 0.02, well below the regional average of 0.17 per 1,000.[13] The human resource shortages continue to be one of the most important challenges facing the Eritrean health system.

1.7 Given the low level of health expenditure, there has been an emphasis on the most cost-effective disease control and public health interventions, under the leadership of national disease control programs and implemented through a decentralized primary health system at the *zoba* level.

World Bank and other External Support to HNP: 1994–present

1.8 Between 1997 and the present the World Bank committed approximately $82.3 million in IDA credits and grants to support three health sector operations in Eritrea (Table 1-1). The Bank's support to the sector was informed by an Information Sheet on Health Nutrition, Population and Poverty (1999) and a Health Sector Report in 2003/04. In addition, IDA financing has been made available through two multisectoral operations: (i) the Integrated Early Childhood Education Project which financed clinic- and school-based delivery of child health and nutrition services; and (ii) the Community Development Project which financed the construction of 31 health facilities. Other key sources of external support to Eritrea's health

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11. In 1994 the GOE issued a policy document called "Macro-Policy." In addition to a strong emphasis on human development, the other main thrusts of the strategy were: swift transition to a market economy; introduction of a liberal trade policy; and a central role of the private sector as an engine of growth (World Bank 1996b, p4).

12. MOH 2006g (p3).

13. World Bank 2004b (pp82-3).

sector were: the U.S. Agency for International Development (USAID),[14] the Italian Cooperation and the various UN agencies, notably the World Health Organization (WHO), the United Nations Population Fund (UNFPA), the Joint United Nations Program on HIV/AIDS (UNAIDS) and the United Nations Children's Fund (UNICEF). Two projects intersected directly with the areas covered by the Bank's projects: the Environmental Health Project financed by USAID and the Public Health and Rehabilitation Program in Eritrea (PHARPE) Project financed by the Italian Cooperation.

Table 1-1. World Bank involvement in the health sector

World Bank support	Implementation Period	Actual Credit $ million
Health Sector Projects		87.1
Health Project	12/1997–12/2004	17.5
HAMSeT Control Project	12/2000–03/2006	45.6
HAMSeT Project II	06/2005–on-going	24.0[a]
Projects closely related to the Health Sector		
Community Development Project	02/1996–12/2001	16.1
Integrated Early Childhood Development Project	07/2000–03/2007	41.6
Economic and Sector Work		
Eritrea - Health Sector Report[b]	2003	

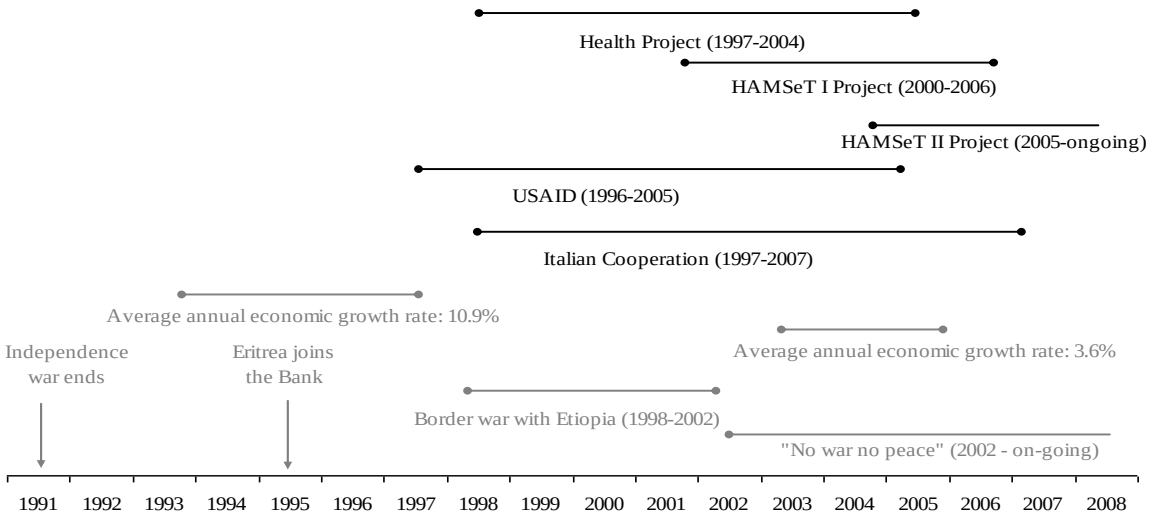
Source: World Bank data.

a. This amount is the IDA commitment as the project is still under implementation. As of June 2008, $14.7 million (60 percent of the credit) has been disbursed.

b. This piece of EWS was formally published in 2004 as "The Health Sector in Eritrea World Bank Country Study."

14. In response to a request by the GOE on July 26, 2005, USAID offices closed and development assistance programs to Eritrea ceased on December 31, 2005.

Figure 1-3. External assistance to the HNP Sector, 1996–present



1.9 In addition to Bank-financed technical assistance to the MOH, USAID's Environmental Health Project financed studies on the vectors of malaria transmission and the efficacy of malaria control methods in 2001, technical assistance for malaria surveillance, a malaria prevalence survey conducted in 2000/01, epidemic preparedness and program strengthening which concluded in 2004.[15] The PHARPE Project was implemented by WHO over the 1997–2007 period, and covered the following areas: (i) human resource development, (ii) malaria and tuberculosis control, (iii) surveillance, and (iv) infrastructure and maintenance support to health centers and hospitals (especially in Gash Barka).

1.10 The country is politically isolated, and compared to other countries there are very few donors in the health sector, and the country in general. While the result is severe resource limitations, the health sector did not suffer from the distortions caused by competing donor priorities often seen elsewhere.

2. Health Project

Objectives and Design

2.1 The health sector dialogue formally started shortly after Eritrea joined the Bank in 1995. There was post-independence euphoria throughout the country, and a "can do" attitude permeated the agencies of government. The President of Eritrea made the political commitment to deliver a hospital in each *zoba*, and the support of the Bank was sought specifically to finance

15. Shililu 2001a,b; Sintasath 2004; and Graves 2004.

"two 200-bed, two-storey hospitals." The objective stated in the Development Credit Agreement was "to contribute to the improvement of health care delivery services and health status."[16]

2.2 There was disagreement between the Bank and the GOE as to how best to achieve this objective. The GOE made a legitimate argument that referral hospitals are an integral part of the primary health care system in terms of their referral function, and the technical support and oversight they provide to lower level health facilities. The government, through the Eritrean Liberation Front, had gained considerable experience with running basic health services during the war and needed assistance with the hospital sub-sector. Furthermore, at the time the MOH was receiving substantial external support and technical assistance for clinic services from bilateral donors and UN agencies, and the sector had benefitted from clinic reconstruction and renovation implemented under the Bank-financed Community Development Fund Project during 1992–1997.[17]

2.3 The two proposed hospitals were to replace a 102-bed hospital in Mendefera (in *zoba* Debub) and a 41-bed hospital in Barentu (in *zoba* Gash Barka). The Bank correctly questioned the size of the two proposed hospitals, their affordability, and their impact on the already constrained human resource situation. Eritrea's bed capacity was within the range of other low income countries in the region, and utilization of the existing hospitals was low.[18] It was estimated that the two hospitals alone would imply additional per capita recurrent expenditure of between $1.0 and $1.5 annually.[19] A further concern was the displacement of staff from basic health services in order to staff the referral hospitals. In anticipation of future economic growth and associated government revenues, the government argued that the recurrent costs were within affordable limits. To address the human resource concerns the MOH agreed to develop a human resource plan for the hospitals.

2.4 In addition to financing hospital infrastructure, the project financed clinic refurbishment, drugs and medical supplies, blood safety, and capacity building. The components and activities, as anticipated in the project appraisal document, are summarized in Box 2-1. These activities address some of the challenges facing the sector—lack of physical access to health services of acceptable quality, particularly by the poor and rural population, weak institutional capacity at the national and zonal levels—although the financial barriers to health care access was not addressed.

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16. According to the project appraisal document the objective of the Health Project was: "to improve the health status of the people of Eritrea thereby enhancing quality of life and the ability of Eritreans to participate in the country's socio-economic development."

17. The project built 23 health stations, 1 health post and 7 health centers (World Bank 2002).

18. Eritrea's bed capacity was within the range of other low income countries in the region: bed/population ratio for Eritrea was 0.76 beds per 1,000; low income countries in SSA region: inter-quartile range for the period 1995-2000 was 0.71 to 1.49 (World Bank 2007a). At the time of project preparation, the bed occupancy rate nationally was 48.1 percent; 32.2 percent in Mendefera hospital, and 52.9 percent in Barentu hospital (World Bank 2004a,b).

19. World Bank 1997.

Box 2-1. Health Project: components and intended activities

1. Strengthening Health Care Services
1a. Expanding Access to Secondary Referral Health Care in two Regions ($12.7 million; 60.2 percent of appraisal cost): constructing, equipping and staffing two referral hospitals in Barentu and in Mendefera.
1b. Strengthening health services nationally ($4.2 million; 19.9 percent of appraisal cost): (i) supporting 18 health centers and 12 health stations,[a] by providing equipment, furniture, essential drugs and vaccines, training providers, and improving their management by better training, communication and supervision, and (ii) expanding the national blood bank service including the construction of a national blood bank in Asmara and strengthening the network of blood banks.

2. Capacity-building
2a. Program management and sustainability ($2.0 million; 9.5 percent of appraisal cost)
Provision of technical advisory services, training programs, study tours and studies to strengthen managerial capacity at all levels in the MOH, to improve mechanisms to decentralize decision-making within the hospitals and rural health facilities, and to test local-level mechanisms to raise, retain and utilize additional revenues for health services.
2b. Project management and implementation ($1.0 million; 4.7 percent of appraisal cost)
This sub-component covered capacity building for project management and implementation in the Ministry of Health and in the zonal health offices.

Source: World Bank (1997).
a. These facilities were all being built at appraisal or constructed within the preceding 3 years largely by donor and community contributions immediately after independence but remained non-operational lacking equipment and furniture.

2.5 The project rationale included reference to the lack of health service access particularly among the poor.[20] The project design indirectly sought to address the needs of the poor by the choice of health centers and health stations for refurbishment and the choice of hospitals for reconstruction, in particular Barentu hospital which is located in one of the deep rural *zobas*.

2.6 Reparation took 21 months from project concept to approval in December 1997.[21] Despite a protracted project preparation period there were important shortcomings: (i) the project sought to influence total fertility rate, prevalence of female genital mutilation, and malnutrition yet there were no complementary interventions to specifically achieve these health outcomes,[22] (ii) there was no systematic human resource planning despite a very detailed analysis of financial sustainability, and (iii) safeguard policies were not complied with regarding the medical waste produced by the hospitals.

2.7 ***Implementation arrangements.*** The implementing agencies were the MOH and the zonal health offices. A project management unit (PMU) was established in the MOH under the supervision of the office of the Minister. Project implementation made use of existing MOH

20. "lack of physical and financial access to health services of acceptable quality to the people of Eritrea, particularly to the poor and to those living in remote rural areas" (World Bank 1997, p4).

21. Project Concept Document was dated March 1996. Project preparation was supported by a PHRD grant and a Project Preparation Facility.

22. Key performance indicators: infant mortality rate; under five mortality rate; maternal mortality ratio; total fertility rate; prevalence of malnutrition in children under five and in women; prevalence of tuberculosis, malaria, acute respiratory infections, sexually transmitted diseases and acquired immune deficiency syndrome (AIDS); percent of publicly provided health services financed by local and community resources.

coordination mechanisms, and implementation was coordinated with the relevant divisions and national programs in the MOH, the zonal health offices, and other pertinent structures (e.g., Pharmecor, the parastatal pharmaceutical manufacturer).

2.8 ***Risks.*** The project appraisal document identified risks pertaining to utilization, implementation capacity, and the appropriateness and maintenance of facilities and equipment. Risk mitigation measures were identified but it is unclear who was responsible for their implementation. For example, poor utilization due to, amongst others, financial barriers to access was identified, but no specific remedy or assignment of responsibility was proposed. Given the Bank's valid concerns at appraisal about the affordability of the hospitals' recurrent costs (as raised in the economic and financial analysis), it is surprising that these issues did not feature more prominently in the risk assessment.

2.9 ***M&E design.*** While the links between the outcome and impacts identified in the logframe were plausible, there was a disconnect with the project outputs for selected indicators (e.g., total fertility rate, prevalence of female genital mutilation, and malnutrition as mentioned in paragraph 2.6). The indicators were all national in scope, while a large share of the interventions was regionally focused. No targets were set for the key performance indicators (KPI). A combination of sector-level and project-level indicators were proposed, with the health management information system (HMIS) being responsible for collecting the former and the PMU being responsible for the latter. Very little detail was provided in the project appraisal document and the project implementation plan on how project data (as opposed to sector data routinely collected through the HMIS) would be collected at the *zoba* level. A household health utilization and expenditure survey (EHHUES) was to be expanded from the existing two *zobas* to include all six *zobas* in the country to provide baseline data.

Implementation

2.10 ***Planned and actual expenditures by component***. The Health Project became effective on May 28, 1998, was implemented over a period of seven years, and closed on December 31, 2004, 18 months after the original closing date. The reason for the extension was the substantial delays in the hospital construction. The actual project cost was $22.6 million, 107 percent of the cost estimated at appraisal. Upon project closing the credit was 99 percent disbursed and SDR 3,405 was cancelled. Borrower contribution was 68 percent of the appraisal estimate. The actual project cost included a grant from Norway of $2.8 million for hospital construction that was not planned at appraisal.

2.11 Following a malaria outbreak and in response to humanitarian needs following border hostilities—both occurring in 1998 shortly after effectiveness—the Bank agreed to reallocate $2.8 million from the training and study budget to the malaria control program and $1.2 million to support post-conflict emergency programs. The Bank also agreed to reallocate funds to nurse training institutions under Component 2 (Capacity Building) in order to support the country's strategy to train additional health staff. The latter was justified by the severe human resource constraints heightened by the post-conflict situation. There were no revisions to the project objectives or key performance indicators. The mid-term review missed the opportunity to fix the disconnect between the project outputs and the KPIs.

Table 2-1. Planned versus actual costs, by component

Component	Appraisal estimate ($ million)[a]	Actual ($ million)	Share of appraisal cost (percent)
1. Strengthening Health Care Services	17.8	19.41	109.0
1a. Expanding access to Secondary Health Care	13.1	13.07 [a]	99.8
1b. Strengthening health services	4.70	6.37	132.8
2. Strengthening Institutional Capacity	3.30	3.22	97.6
2a. Management	2.10	1.28	61.0
2b. Project Management	1.20	1.94	162.0
Total Project Cost	21.10	22.63[a]	107.2

Source: World Bank 1997.

a. Not reflected in the project costs is the cost overrun of $5.3 million for the two referral hospitals that was reallocated from and accounted for under the HAMSeT Control Project.

2.12 Construction of the hospitals started three years into the project's lifespan and was not completed by the delayed closing date. Although the hospitals were said to be 95 percent completed at project closure, the two referral hospitals became operational several years later in 2006, following an additional allocation of $5.3 million from the HAMSeT Control Project. Taking into account this outlay, the total construction costs for the two hospitals came to $18.4 million, 145 percent of the appraisal estimate. Construction was plagued by cost overruns and substantial delays, due to: (i) under-estimation of construction costs at appraisal;[23] (ii) delay in finalization of design and design alterations well into construction; [24] (iii) labor shortages after adults were re-mobilized to the war front in 1998; (iv) shortages of goods and supplies; (v) foreign currency restrictions causing delays in payment of suppliers; (vi) bureaucratic delays in getting approval from the maritime, customs and port authorities at Massawa port; and (vii) damage to the Barentu Hospital during the border hostilities. Many of these factors were beyond the control of the ministry and the Bank. Initially the PMU lacked experience with managing civil works and with Bank procedures in general, although this improved over time. According to the ICR, an independent assessment of procurement in projects in Eritrea rated the procurement performance of the Health Project as satisfactory.

2.13 Implementation of activities by the National Malaria Control Program (NMCP) and the National Blood Transfusion Service (NBTS) progressed well. The reallocations mentioned earlier detracted from funds for capacity building and institution-strengthening. Furthermore, civil works was the largest expenditure category, accounting for half of total project costs. An additional nine percent of project cost was devoted to hospital equipment. During project supervision the project team expressed concern about the imbalance between investments in *hardware* and *software*. The dominance of the project by the construction of the two hospitals, offered the team limited room to introduce sectoral and policy dialogue. The team utilized the

23. The issue of cost overruns was raised as early as the project's launch mission.

24. Examples of design alternations include: expanding scope of medical gas to all wards; adding elevators; changing the layout of nurses' stations in wards to accommodate an electronic nurse call system.

opportunity of project supervision to engage the MOH leadership in policy dialogue on broader sectoral issues—for example the country was encouraged to develop a National Health Strategy. Policy dialogue regarding management and improvement of the efficiency of the hospital sub-sector was, however, largely limited to requiring the MOH to develop a hospital staffing plan.

2.14 The reallocation for malaria meant that the National Malaria Control Program also became a key part of the project's implementation arrangements. The project procured malaria control drugs and supplies, and training and workshops. The project-financed inputs accounted for the largest share of external funding to the National Malaria Control Program over the period 1998–2001.[25] In 1999 the MOH convened the first National Malaria Conference, and through the *Mendefera Declaration on Malaria Control in Eritrea* committed the country to reducing malaria morbidity and mortality by 80 percent from the 1999 levels.

2.15 ***Safeguards.*** The project was subject to an environmental assessment because of hospital medical waste. An environmental assessment was not completed at appraisal and the medical waste plan was only drafted in May 2003, nearly five years after project effectiveness. Although the support to the National Malaria Control Program was added after appraisal, the same safeguard requirements had to be met for the procurement of insecticides, in particular dichloro-diphenyl-trichloroethane (DDT). No evidence of measures taken to comply with safeguard policies could be found.

2.16 ***M&E implementation and utilization of data.*** The preliminary results of the household health and expenditure survey for selected *zobas* were available in 1997 and the full survey was completed in September 2002, four and a half years after effectiveness and undermining the intention that it would serve as a baseline survey. The delay was mainly due to border hostilities in 1998–2000 causing substantial delays in the fieldwork. There was no follow-up survey and hence no trends could be assessed. There is, furthermore, only limited indication that the survey data were used to inform project-level implementation or sectoral decision-making. The project benefited greatly from the HMIS, although very few of the HMIS inputs were financed by the project. Supervision missions repeatedly stressed the importance of strengthening the project's M&E system and the appointment of an M&E specialist in the MOH. Constrained by human resource availability an M&E unit was established in the MOH only in 2007.

Achievement of Objectives

2.17 The assessment of the achievement of the project objective—to improve health care delivery services and health status—is divided into two parts: (i) improvement in the delivery of health care services; and (ii) improvement in health status. The outputs by component are summarized in Annex A.

OBJECTIVE: IMPROVEMENT IN THE DELIVERY OF HEALTH CARE SERVICES

2.18 While service delivery has improved following the opening of the 144-bed Barentu Hospital and the 168-bed Mendefera Hospital in 2006, both hospitals were functioning below the capacity intended at appraisal. More than a year after the opening of the hospitals the bed

25. World Bank 2005b.

occupancy rate was 27 percent for Mendefera hospital and for Barentu it is estimated by IEG at about 30 percent.[26] In Barentu Hospital (in *zoba* Gash Barka) there has only been a small increase in utilization since opening (Figure 2-1a) while in- and out-patient data for Mendefera Hospital show an increasing trend in utilization (Figure 2-1b).

2.19 The two hospitals were built as referral hospitals, providing specialist services, for example surgical services, and receiving referrals from health centers and other hospitals in the zoba. The number of surgical procedures in Mendefera Hospital has nearly tripled—from 780 in 2005 to 2,834 in 2007. Referrals from health centers to Mendefera Hospital nearly doubled between 2005 and 2007 (Table F-1 in Annex F), and referrals from other hospitals increased from 109 to 238 between 2004 and 2007. For Barentu Hospital the picture is slightly different. While referrals to Barentu Hospital from health centers in the *zoba* increased substantially between 2005 and 2007, referrals from other hospitals in the *zoba* declined (Table F-1 in Annex F). Barentu Hospital essentially functions as a *zoba* hospital serving the health centers in the sub-*zobas* in its catchment area, and not as a referral hospital to the *zoba* hospitals. The under-utilization of both hospitals and the lack of provision of some specialist services in Barentu hospital contribute to the overall inefficiency of the hospital investment. A mitigating factor is the re-use of the replaced hospital facilities as nurse training facilities, meeting an important need in the country.

2.20 Utilization of health centers and health stations is assessed using two examples—immunization and antenatal services—with due recognition that these are not the only services provided by these facilities, and that not all the improvements can be attributed to Bank-financed inputs.[27] There have been significant increases in immunization coverage: full immunization coverage expanding from 41 percent in 1995 to 76 percent in 2002 (Table 2-2). Despite some improvement in antenatal clinic service access, the share of deliveries attended by a health worker has not shown similar increases. The share of pregnant women visiting a health facility for at least one antenatal visit increased from 44 percent in 1998 to 64 percent in 2005.[28] Of those who attended at least one antenatal clinic visit, a tenth failed to complete the required number of antenatal clinic visits.[29] In 1999 delivery service coverage was 17 percent with only a modest increase by the end of the project (Table 2-2).

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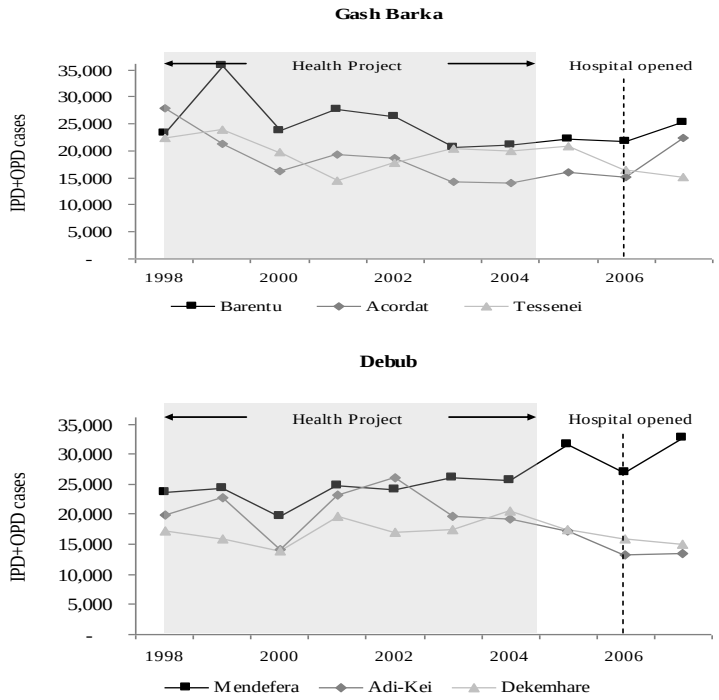
26. MOH 2007a. Bed occupancy rate for Barentu Hospital was reported at 70 percent, the highest in the country. But, this based on a 60-bed hospital, the same as the hospital that was replaced.

27. Data on the indicators of health facility access and utilization proposed in the PAD (World Bank 1997, Annex 1 p2) were not available, and alternate measures or slightly modified indicators that could be obtained from the HMIS have been used instead.

28. MOH 2007a (p37).

29. MOH 2006a (p38). In 2000 and 2003 the drop-out rate was 11.1 percent and 10.6 percent respectively.

Figure 2-1. In- and out-patient caseload in Gash Barka and Debub by hospital, 1998–2007a



Source: MOH 2008a.

a. The factors that contribute to the low utilization are: *Design*. While there were several positive aspects to the hospital design,[30] some design features constrained utilization: e.g., the porous floor material in theaters and some wards made sterilization impossible, and mosquito nets were not fixed to the beds in Barentu hospital, in the *zoba* with the highest malaria prevalence. Many of the design alterations that resulted in considerable delays are still not functional—e.g., the central medical gas supply to all wards is currently not operational; the ward layout was changed in order to install a nurse calling system that is still not functional; an elevator was added to the Mendefera hospital for better access to the second storey with administrative offices, is not utilized. *Energy supply*. In Barentu Hospital there are 3 hours of electricity in the day and 3 hours at night.[31] Solar power seems to be the only plausible solution, but was considered too costly.

30. Air-conditioning was limited to the operating theaters and the pharmacy; the extensive use of natural light; the use of natural water collection through construction of boreholes, water towers and underground water run-off to ensure water self-sufficiency of the facilities; landscaping was designed to facilitate natural cooling; design allowed for revenue generation through rental of conference facilities and other hospital facilities.

31. The source of power is in Massawa on the Red Sea, and Gash Barka is on the country's western border adjacent to Ethiopia and Sudan. Energy supply was always constrained but the current situation is particularly acute due to diesel shortages and high gasoline costs.

Table 2-2. Utilization of clinic services, 1995–2002

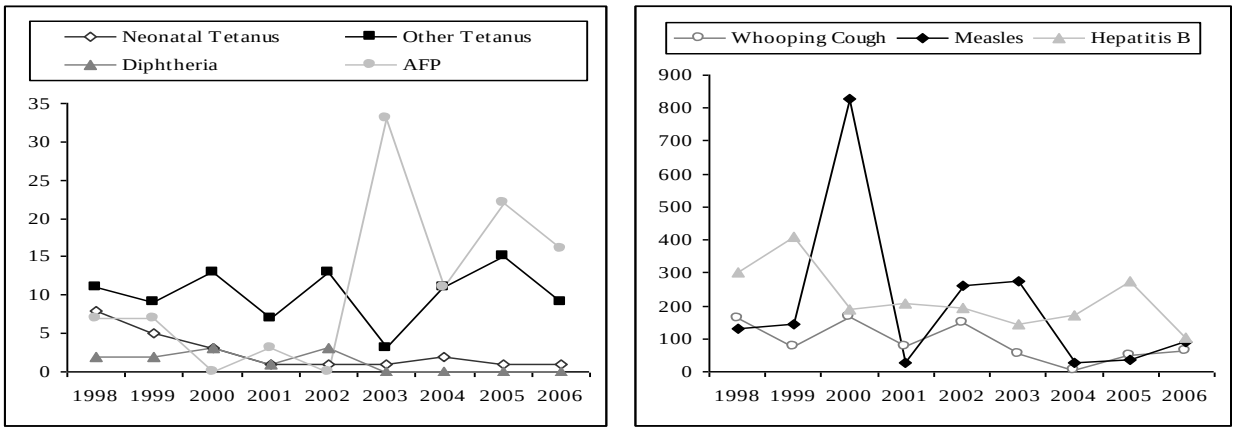
Service	1995	1998	1999	2000	2001	2002	2005
Immunization coverage[a]							
BCG	61					91	
DPT3	49					83	
Full immunization	41					76	
ANC coverage (% pregnant women with at least 1 ANC visit)[b]		44.2	40.5	38.4	45.3	51.4	64.1
Share of births attended by skilled health personnel[c]			17.4	16.6	18.9	22.7	26.2

Source: Macro International 1995, 2002; MOH 2007a.
a. Macro International 1995, 2002.
b. The project appraisal document uses the indicator '% of pregnancies with at least 3 ANC visits' but this indicator was not available from the HMIS reports (MOH 2007a p37).
c. MOH 2007a (p41).

OBJECTIVE: IMPROVEMENT IN HEALTH STATUS

2.21 Project implementation coincided with significant improvements in the health indicators (e.g., *infant and child mortality*) but attribution is confounded by several factors. These include: (i) there have been significant improvements in socioeconomic conditions after independence, (ii) there were other complementary activities that also addressed this objective (e.g., the Integrated Early Childhood Development Project, and inputs financed by other donors: UNICEF, WHO, USAID and Italian Cooperation), and (iii) the project hospitals are functioning well below the capacity intended at appraisal, and impairing the functioning of the referral chain. Nonetheless, there is some evidence of reduction in morbidity from immunization-preventable diseases between 1998 and 2005 consistent with the expanded immunization coverage shown in Table 2-2 —neonatal tetanus, diphtheria and whooping cough but not for measles and polio (Figure 2-2).

Figure 2-2. Trends in immunization-preventable diseases, 1998–2006



2.22 All indicators of *malaria* morbidity and mortality decreased significantly between 1998 and 2003 to below pre-outbreak levels. [32] Malaria morbidity rate decreased by 74 percent,

32. The end year of 2003 is used here because when the HAMSeT Control Project started the support to the malaria control program was mainly derived from the new project.

malaria mortality rate by 85 percent (Table 2-3), and malaria case fatality rate (i.e., the percentage of malaria deaths out of health facility-admitted malaria patients) decreased by 78 percent (from 3.6 to 0.8). Similarly, bed occupancy due to malaria also decreased by just under a tenth (9.1 percent).

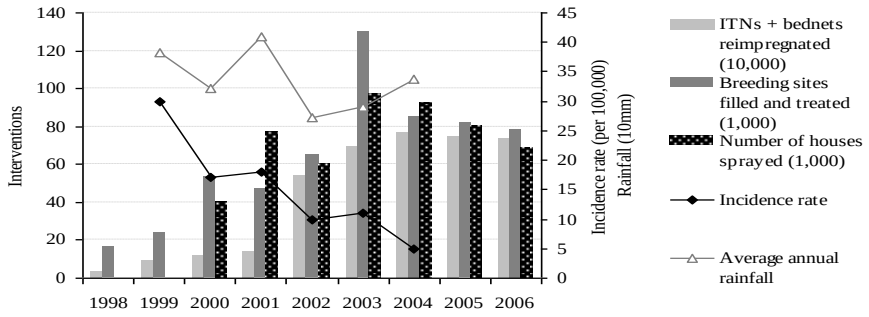
Table 2-3. Malaria morbidity and mortality rate, by zoba, 1998–2006

	Malaria morbidity rate (per 100,000)			Malaria mortality rate (per 100,000)		
Zoba	**1998**	**2003**	**2006**	**1998**	**2003**	**2006**
Anseba	5,544	336	83			0.2
Debub	7,857	2,059	258			0.1
Gash Barka	15,544	5,617	2,199			4.5
Maekel	986	436	164			0.3
Northern Red Sea (NRS)	7,460	804	90			0.4
Southern Red Sea (SRS)	3,601	634	137			0.0
National	7,546	1,945	568	15.8	2.3	1.4

Source: IEG calculations based on MOH 2007a.

2.23 A substantial share of the reduction in incidence can be ascribed to the National Malaria Control Program's programmatic achievements. While the trends in malaria interventions and malaria incidence are highly suggestive of a programmatic success in the country's malaria control efforts (Figure 2-3)[33] a key question is: how much of this success can be ascribed to the varying rainfall pattern? In 1997/98 the rainy season lasted four months instead of the usual two months. Between 1999 and 2003, more than half of the variance in malaria incidence can be explained by variance in rainfall.[34] Furthermore, in 2001 rainfall exceeded the level in 1998, yet mortality and morbidity in 2001 was between a third and a quarter of the 1998 level.

Figure 2-3. Malaria interventions and malaria incidence, 1998–2006



Source: Nyarango et al. 2006 (incidence and rainfall data); MOH 2004a, 2006b (intervention data).

2.24 Until 2001 the Bank was the major source of funding to the National Malaria Control Program. The program also benefited from technical assistance from bilateral donors, notably the USAID-funded Environmental Health Project and assistance from the Italian Cooperation/WHO through the PHARPE Project, as well as Bank-financed technical

33. Given the overlap between the Health Project and the HAMSeT Control Project, the results reported in this section should be viewed together with those reported in Chapter 3.

34. Author's calculations.

supervision. These inputs were highly complementary to the project-financed programmatic support to the NMCP.

2.25 Blood screening for HIV, hepatitis and syphilis was introduced following the establishment of the National Blood Transfusion Service, and by 2003 half of the country's safe blood supply needs were being met. Table 2-4 shows the decreasing HIV prevalence rate in screened blood, suggesting the success in the quality control mechanisms implemented by the National Blood Transfusion Service.[35]

Table 2-4. HIV prevalence in screened blood, 2003–2005[36]

Year	Units of Blood Collected	HIV prevalence (percent)
1999		4.60
2003	4,245	0.50
2004	4,088	0.50
2005	4,455	0.34

Source: MOH 2007b (p65).

Project Ratings

2.26 The **outcome** of the Health Project is rated *moderately unsatisfactory*, and is based on the ratings for relevance, efficacy and efficiency as they apply to the two parts of the objective (summarized in Table 2-5 and discussed below).

Table 2-5. Health Project: Summary IEG Ratings by Objective

Development Objective	Relevance of Objectives and Design	Efficacy	Efficiency	Outcome
Improve the delivery of health services	Modest	Substantial	Modest	Moderately unsatisfactory
Improve the health status of the people of Eritrea	Substantial	Substantial	Modest	Moderately satisfactory
Overall Project Outcome Rating				Moderately unsatisfactory[a]

a. The dimension of the development objective pertaining to the delivery of health services is weighted more heavily because the overwhelming share of project costs and implementation effort was devoted to hospital construction.

2.27 The overall **relevance of the project objective and design** for the first and second sub-objectives is *modest* and *substantial*, respectively. The relevance of the objective to improve

35. The ICR estimated that if only the impact on HIV is considered, the screening methods resulted in saving of 163,440 Health Adjusted Life Years (HeaLYs) and that for each project dollar spent on blood safety 56 healthy days were obtained (World Bank 2005b). The assumptions underpinning this analysis, in particular the epidemiologic modeling are not known and it was not clear from the analysis what the number of HIV infections averted was.

36. The declining prevalence in screened blood has incorrectly been interpreted in some reports as evidence of declining or stabilizing HIV prevalence (e.g., MOH 2007b (p64) and World Bank 2006b) failing to recognize the selection bias imposed by the National Blood Transfusion Service screening methods. Instead this declining prevalence trend should be interpreted as evidence of the quality control mechanisms implemented by the National Blood Transfusion Service.

health care delivery services and health status of Eritreans was consistent with the post-conflict situation, and remains consistent with the priority placed on human development by the GOE and the MOH. The establishment of the blood bank was also an important priority. The relevance of the project design had some shortcomings. While responding to the dire need for reconstruction, the design failed to account for the results chain ensuring that the project outputs (especially the construction of two hospitals) are linked to all of the intended impacts as reflected in the performance indicators (e.g., total fertility rate, prevalence of female genital mutilation and malnutrition). While the hospitals had several positive design features, the design has to be criticized for the excessive size of the Barentu hospital. The addition of the malaria sub-component enhanced the relevance of the design, especially of the second part of the objective—to improve health status—as the project outputs could be directly linked to a major source of morbidity and mortality among adults as well as infants and children.

2.28 The **efficacy** of the first sub-objective, to improve the delivery of health services, is *substantial*. While the contribution of the hospital construction to the project objective is constrained by the under-utilization of specialist services in Barentu hospital, the HMIS data suggest increasing trends in service delivery. Furthermore, the establishment of the blood bank was an important achievement. The **efficacy** of the second sub-objective, to improve health status, is *substantial*. The investments in clinic services contributed to improvements in clinic utilization and health outcomes. It is also possible to make stronger links between some of the other project investments and outcomes, e.g., investments in the blood bank and the successful malaria control program. Some performance indicators that the project sought to influence did not improve substantially: malnutrition and prevalence of female genital mutilation.

2.29 Project **efficiency** is *modest*. The investments in malaria control and in PHC services were highly efficient as it focused on low cost and highly efficacious interventions. On the other hand, the under-utilization of the two hospitals (in terms of bed occupancy and out-patient utilization) and the large share of specialized equipment that was not operational, especially at Barentu Hospital, detracted from overall project efficiency.

2.30 The project's **risk to development outcome** is *moderate*. Several factors bode well for sustainability: the high level of government commitment and ownership; the high utilization of clinic services; the reasonable likelihood of increasing utilization of Mendefera Hospital; and the highly successful malaria program with its strong reliance on community involvement that has proven to be sustainable. However, the government's difficult fiscal position may constrain the sector's future resources, and border hostilities continue to pose some level of risk to the economy.

2.31 As mentioned, the project's duration coincided with the start of border hostilities and the country effectively moved from a post-conflict situation to a country in conflict, creating many implementation challenges facing the Bank and the borrower.

2.32 **Bank Performance.** The Bank's overall performance is *moderately satisfactory*. Pre-project dialogue was characterized by disagreement between the Bank and the borrower regarding the need for and affordability of two 200-bed hospitals. Some interviewees commented that at the very beginning of the dialogue the Bank did not fully appreciate the political economy of the post-conflict situation, and initially adopted an overly technocratic

approach. Eritrea was said to be in a "reconstruction mode" whereas the Bank was in its usual "development mode." The GOE felt the Bank was "too ideological" at the time of project preparation, and the notion of doing a hospital project was going against the "received doctrine" of supporting primary health care. The GOE contended that it fully appreciated the high returns to investments in primary health care, but that they were adopting a much longer term perspective and was "building a country for the future." After a protracted project preparation the Bank agreed to finance the project. If one takes a long-term view and considers the sectoral engagement in the decade that followed under the HAMSeT projects, the Bank was correct to engage the sector even though there were technical disagreements.

2.33 Quality-at-entry was, however, moderately unsatisfactory for the following reasons: (i) excess capacity in hospital designs; (ii) no human resource planning despite very detailed analysis of financial sustainability during appraisal, and (iii) failure to complete the environmental assessment for medical waste. Shortly after the start of the project, support for malaria control was added, but no evidence of any measures taken to comply with safeguard policies regarding DDT procurement could be found.

2.34 Quality of supervision was satisfactory. Supervision missions were regular and continuity in project oversight was maintained despite some turnover in task team leaders.[37] Early supervision was not sufficiently results-oriented, although the project team did well to engage the government through ESW (that was formally published in the Health Sector Note in 2003); a health expenditure and utilization survey (Phase I in 1997 and Phase II in 2002) and informal analytical work during supervision.[38] The Bank was successful in moving the sector dialogue from a "reconstruction mode" to a "development mode." There could, however, have been greater engagement with the sector on hospital management to increase the effectiveness of hospital investments.

2.35 **Borrower's performance** was *moderately satisfactory* overall. Government performance was moderately satisfactory despite the country being a new member of the World Bank and the difficult security conditions. The performance of the MOH, the implementing agency, was moderately satisfactory. There were numerous and considerable delays in hospital design and construction. Most contributing factors mentioned in paragraph 2.12 were beyond the control of the borrower. However, a key factor was—numerous design changes that were introduced by the ministry well into the hospital construction and resulted in delays in construction and installation of equipment that is currently not being utilized, contributing to hospital inefficiency. Implementation of other aspects of the project, notably the Malaria Control Program and the Blood Bank, was highly successful. While initially inexperienced, the PMU steadily gained experience and successfully managed fiduciary matters. The PMU had very little staff turnover thereby maintaining the capacity for the project that followed.

2.36 **Monitoring and evaluation** was *modest***.** The M&E design included sector-level and project-level indicators, and a baseline household health utilization and expenditure survey. The

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37. There were four task-team leaders over the project's lifespan.

38. For example, the MOH was encouraged to develop a National Health Strategy, and human resource plans of the hospitals sub-sector setting the scene for engagement on human resources for health that is currently underway.

project's indicators were all national, while a large share of the interventions was regional in scope. The implementation of the second phase household survey was delayed due to border hostilities, and undermining its purpose as a baseline survey. It is unclear to what extent data from this costly undertaking was used to inform project-level implementation or sectoral decision-making. The appointment of an M&E specialist in the MOH was delayed and only in 2007 was an M&E unit established in the MOH.

3. HAMSeT Control Project

3.1 At the time of project preparation Eritrea was emerging from another period of war (1998–2000). While health and other socio-economic indicators continued to improve over that period (refer back to Figure 1-1), communicable diseases accounted for a significant share of the disease burden. Malaria incidence had declined following the 1998 outbreak, but malaria remained a significant source of morbidity and mortality. The threat of HIV/AIDS was an emerging area of concern.

Objectives and Design

3.2 The objectives, as stated in the project appraisal document, were: "to reduce the mortality and morbidity of the Eritrean population due to HIV/AIDS, malaria, sexually transmitted diseases and tuberculosis (HAMSeT) through an increase in utilization of quality, effective and efficient health services for HAMSeT prevention, diagnosis and treatment, supported by healthy practices."[39] The choice of diseases was driven by the disease burden and the large positive externalities associated with controlling these communicable diseases. The malaria interventions were intended to build on the early achievements of the Health Project by financing malaria control activities in other sectors (e.g., the Ministry of Defense) and by greater emphasis on the role of community outreach and involvement, facilitated by the malaria workers already in place. The rationale for the emphasis on HIV/AIDS was that, while Eritrea's HIV prevalence was relatively low, early intervention would avert future disease burden. There was also a concern that the demobilized defense force and the large post-war displaced population could exacerbate the spread of HIV. Tuberculosis was not only a significant communicable disease, but also a major AIDS opportunistic infection. The emphasis on communicable diseases remains justified—in 2005 HIV/AIDS, tuberculosis and malaria were among the five most important

39. The objective, as stated in the credit agreement has a bit more detail: "to assist the borrower in: (a) increasing knowledge and awareness of HIV/AIDS, malaria, STIs and tuberculosis (HAMSeT) among the population of the Borrower's territory; and (b) providing the said population with increased access to prevention measures and basic early treatment, through: (i) increasing the effectiveness and efficiency of the Borrower's policies and interventions aimed at the reduction of the spread of HAMSeT diseases; (ii) enabling communities, households, and individuals to: (A) learn more about the practices that facilitate or minimize the spread of HAMSeT diseases, and (B) have access to affordable preventive measures and early treatment services; (iii) improving the quality of basic health care by providing drugs and medical materials; (iv) reducing environmental impact of vector control activities; and (v) identifying affordable community-managed home-based care for AIDS patients."

causes of mortality.[40] Furthermore, a disproportionate burden of malaria and tuberculosis continued to fall on the poor.

3.3 A multiple disease project design was chosen because of the country's extremely limited financial and human resource base, and in anticipation of efficiency gains from elements that disease control programs have in common: (i) health promotion, (ii) surveillance, (iii) logistics, and (iv) zonal-level service delivery. Improving the institutional infrastructure to perform these functions for the chosen diseases would, furthermore, serve many other disease control efforts.

Box 3-1. HAMSeT Control Project: components and intended activities

1. Collect and analyze information on HAMSeT *($5.1 million; 10.2 percent of appraisal cost)*
(a) improving HAMSeT surveillance techniques, (b) establishing an epidemic forecasting preparedness system; (c) improving the country's capacity to carry out operational research for identifying changes in HAMSeT, (d) introducing methods to link the results of research and M&E to policy formulation, and (e) strengthening management of communicable diseases at the MOH.

2. Multi-sectoral control of HAMSeT transmission *($11.2 million; 22.4 percent of appraisal cost)*
(a) Promote healthy behaviors through multi-level communication, coordinate communication activities of all implementing partners and build capacity, (b) Promote healthy lifestyles through the education system, promoting good health and preventing the spread of HAMSeT diseases through the Ministry of Education school health program, (c) Enhance access to preventive, diagnostic, and treatment services for conscripts, by promoting healthy behaviors through multiple channels of communication, strengthening health care services for conscripts, promoting condoms use and insecticide-treated materials, and (d) Promote environmentally sound and cost-effective techniques for malaria vector control that would (i) identify, test, validate, and introduce safe, cost-effective chemicals to replace DDT, (ii) validate malaria biological vector control, (iii) develop a strategy for pesticide use and control, (iv) test community acceptance of validated methods and techniques, and (v) replicate socio-environmentally validated malaria vector control methods.

3. Strengthen HAMSeT diagnostic, health care, and counseling *($20.7 million; 41.4 percent of appraisal cost)* (a) Establish safe blood banks in *zoba* hospitals, (b) Improve diagnostic, treatment, and counseling of HAMSeT through in-service and on-the-job training on HAMSeT prevention and detection, case management, syndromic and laboratory diagnosis of HAMSeT, as well as pre- and post-voluntary counseling and testing; and (c) Improve availability of basic medical materials and drugs required to diagnose and treat HAMSeT in health facilities.

4. Community-managed HAMSeT response program *($9.9 million; 19.8 percent of appraisal cost)*
(a) Community counseling and support groups, which aimed to strengthen community support services provided by the Ministry of Labor and Human Welfare and to provide counseling and establish support groups for HIV/AIDS affected people, and (b) Community-managed response, which aimed to test the capacity of communities to use their own structures and socio-cultural fabric to (i) respond to technical information about HAMSeT for their prevention, care and cure, (ii) organize their internal mobilization, discussion, and decision mechanisms on the support they deem necessary to assess and otherwise manage the diseases, (iii) identify and input their grassroots and socio-cultural contribution to HAMSeT messages, prevention, care and cure methods, and available support services, and (iv) identify, decide on, and implement sub-projects to prevent or mitigate the diseases and related impacts in the community.

5. Project Management and Evaluation *($2.7 million; 5.4 percent of appraisal cost)* to strengthen the existing Project Management Unit in the MOH (also managing the health project) to be responsible for planning and budgeting, procurement, and financial management.

Source: World Bank 2000a.

40. MOH 2006b (p65).

3.4 The credit was approved in December 2000. The project had five components, summarized in Box 3-1. A fifth of project cost at appraisal was for HAMSeT prevention and control activities implemented by non-health sectors.[41] The rationale for the involvement of these sectors was that the HAMSeT diseases arise from the interaction of health and non-health factors, and that addressing these factors required action in multiple sectors. The sectors were prioritized based on their strategic and comparative advantage in disease control. The multisectoral collaboration between the MOH and other ministries built on past, less formal collaboration. For example, there were links between the National Malaria Control Program and the Ministry of Transport and Communication around the rainfall data from the meteorological sites; there were links between the Ministry of Education (MOE) and MOH around school health and the life skills program; and the Ministry of Defense and MOH collaborated in the area of military health services. With the HAMSeT funding the MOH was able to strengthen the coordination and provide stronger motivation for action from other sectors.

3.5 The rationale for the community-managed component was to increase community awareness of the HAMSeT diseases and to mobilize communities for prevention through affordable mechanisms and drawing strongly on the community structures. The component had a demand-driven design whereby communities would identify disease control activities to be implemented as sub-projects to be implemented by the community. The design was particularly appropriate for awareness raising and stigma reduction as well as community-based care and support services for people with HIV/AIDS and orphans. The demand-driven design had limitations[42] for prevention interventions targeting risk groups or behavior that are highly stigmatized and the interventions targeting these groups were implemented mainly through the multisectoral interventions and the Health Promotion Unit.

3.6 The HAMSeT Control Project was part of the Multi-country AIDS Program (MAP).[43] The project design and implementation structure had some similarities with other MAP projects, for example, a community-managed component and a multisectoral component. There were also some differences. The project was managed by the MOH, not by a National AIDS Commission located outside the health sector. This was a source of debate at the time of project preparation, but the Minister of Health insisted that the coordination structure be located within the MOH. This project was also one of the first MAP projects to finance the control of multiple diseases.

3.7 ***Implementation arrangements***. The MOH was the lead implementing agency, and the project benefited from the project management skills accumulated under the Health Project. The

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41. For example, the Ministry of Health; Education; Labor and Human Welfare; the Ministry of Transport and Communication; the Ministry of Tourism; the Ministry of Information; and the Ministry of Local Government.

42. Community demand for a prevention program targeting for example, sex workers, their clients and others with multiple concurrent partners will likely to be sub-optimal because local demand is less likely to internalize all the benefits of HIV prevention among this risk group.

43. The eligibility criteria for the MAP projects are: (i) Evidence of a strategic approach to HIV/AIDS, developed in a participatory manner, or a participatory strategic planning process underway, with a clear roadmap and timetable; (ii) Existence of a high-level HIV/AIDS coordinating body, with broad representation of key stakeholders from all sectors, including people living with HIV/AIDS; (iii) Government commitment to quick implementation arrangements, including channeling grant funds directly to communities, civil society, and the private sector; (iv) Agreement by the government to use multiple implementation agencies, especially NGOs and CBOs.

implementation structure was, however, more complex than the preceding project. It included seven ministries at national and regional levels, several non-governmental entities,[44] and civil society structures. A National HAMSeT Steering Committee, chaired by the Minister of Health, had responsibility for strategic direction and policy guidance. The committee included representation from ministries involved with implementation as well as the six *zoba* governors. Additional project implementation and coordination structures included: the National HAMSeT Technical Committee and six *Zoba* HAMSeT Technical Committees. At the cabinet level the Minister of Development Planning held the ministers accountable for their contribution to the project objectives.

3.8 ***Risks***. The project appraisal document identified a number of risks, for example, poor coordination of external actors, lack of coordination among implementing agencies leading to slow disbursements, poor implementation, and possible lack of efficacy of some interventions. All of these risks were rated as "modest." However, the complexity of the project design (with multiple components, sub-components, and implementers at different levels of government and civil society), particularly given the relatively weak implementation experience under the previous project, risked slowing implementation and posed complex monitoring issues. The mitigation method (by strengthening the PMU) was insufficient. The risk of duplication, and the weak coordination between the activities implemented by the national and *zoba*-level structures of the line ministries and non-governmental entities and the CMHRP was not addressed, nor was the risk of low capacity at the community level for identifying, implementing and evaluating CMHRP activities.

3.9 ***M&E design***. According to the project appraisal document, the M&E plan was supposed to put a strong evaluation framework in place early in project implementation, but the provisions for carrying out this plan were not clearly specified. The proposed M&E mechanisms identified in the project appraisal document did not go beyond the usual requirements for project supervision,[45] and the design of the M&E plan was deferred to after project appraisal. While KPIs were identified in the project appraisal document, no targets for the impact indicators were set.[46] Some of the KPIs could have been more specific—for example, HIV/AIDS and STI interventions were to target high-risk groups, but the indicators did not reflect these risk groups. Given the limitations of adult HIV prevalence as a measure of prevention impact, indicators of behavior change among high-risk groups could have assisted with the interpretation of HIV prevalence data. Lastly, the project was implemented as a "process project" and a "learning-by-doing project" but there was insufficient allowance in design for: on what basis learning would

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44. Three non-governmental entities, largely government funded, were involved: the National Union of Youth and Students (NUEYS), National Union of Eritrean Women (NUEW) and the National Confederation of Eritrean Workers (NCEW).

45. Proposed M&E included: (i) supervision missions and annual progress reviews; (ii) regular quarterly meetings of the Project Central Steering Committee; (iii) semi-annual progress reports based on implementation targets defined in the Annual Work Plan and Budget; (iv) mid-term review of the project no later than 30 months after effectiveness to identify project successes and issues to be addressed; and (v) baseline and follow-up surveys of beneficiaries.

46. Key performance indicators identified in the PAD: stabilization of HIV sero-prevalence among adults aged 15-24 years; reduction in malaria death rate among children under 5 years and pregnant women; increase in the proportion of diagnosed and successfully treated new smear-positive TB patients; and reduction in the prevalence of severe anemia in women of child-bearing age (World Bank 2000a, p34).

take place; what type of information would be collected to specifically inform learning; and how the design or implementation would be revised to incorporate the lessons from learning.

Implementation

3.10 The HAMSeT Control Project became effective on March 1, 2001, and closed as planned in March 2006. Actual project cost was $51.4 million, 103 percent of the cost estimated at appraisal. A mid-term review was done in November 2004, rather late in the project's life (after 47 months out of the 63 months) and consequently some of the important changes implemented thereafter were sub-optimal in their impact. Upon project closing the credit was fully disbursed and the borrower's contribution was 68 percent of the appraisal estimate.

3.11 ***Planned and actual expenditure by component***. The components were not revised although there was substantial reallocation across components (Table 3-1). The CMHRP accounted for a third of actual project costs (as opposed to the intended 20 percent at appraisal), while only about 60 percent of the planned expenditure on collection of data and the multisectoral activities (components 1 and 2) was actually expended. In 2001 $5.3 million was reallocated from goods and consultant services to civil works to fund the cost overrun of the hospital construction under the Health Project.

Table 3-1. Planned versus actual costs, by component

Component	Appraisal estimate ($ million)	Actual ($ million)	Share of appraisal cost (percentage)
1. Collect and analyze information on HAMSeT	5.14	2.88	56.0
2. Multisectoral control of HAMSeT transmission	11.16	6.75	60.5
3. Strengthen HAMSeT diagnostic healthcare and counseling services	20.69	22.04	106.5
4. Community-managed HAMSeT response (CMHRP)	9.89	16.93	171.2
5. Project management	2.72	2.79	102.6
Total Cost	50.00[a]	51.39	102.8

Source: World Bank 2000 (p. 12); World Bank 2006b (Annex 2).
a. Includes $0.4 million for project preparation facility re-financing

3.12 Collect and analyze information on HAMSeT diseases (Component 1). See discussion under monitoring and evaluation.

3.13 Multisectoral control of HAMSeT transmission (Component 2):[47]

a) Promote healthy behaviors through multi-level communication. The behavior change communications were guided by a Communications Strategy. The activities included: development of materials for behavior change communications, training of outreach workers in behavior change communications (including development training materials),

47. See Annex B for more detail on the interventions implemented by the multisectoral implementing agencies: Ministry of Labor and Human Welfare, Ministry of Defense, Ministry of Education, religious institutions, non-governmental entities etc.

audiovisual equipment, and implementation of communications activities including procurement of airtime and newspaper space. The MOH's Health Promotion Unit provided support to the various sectors to ensure technical accuracy of the information being disseminated. The interventions targeted specific risk groups, and there was evidence of division of responsibility based on the particular ministry or non-government entity involved.[48] However, the division of responsibilities between the national and *zoba*-level structures—especially in the case of the non-government entities—was not always clear. The mid-term review reiterated the need to refocus the HIV/AIDS activities on high risk groups (e.g., sex workers), and to conduct mapping of other high risk groups, but the mapping was not completed by project closing. The team discouraged allocations for income-generating activities among sex workers following doubts about their effectiveness as an HIV prevention strategy.

b) Promote healthy lifestyles through the education system. A school-based health curriculum (including life-skills education) was developed and, although with some delay, was implemented in junior and secondary schools. The curriculum development was complemented by investment in teacher training and associated materials, reading materials etc. Materials were also developed for adults, and media was developed to target adult education students.

c) Enhance access to preventive, diagnostic, and treatment services for conscripts. The program targeted the army hierarchy, all conscripts as well as the families of army personnel. The interventions included: behavior change communications, promotion of VCT and investment in VCT facilities and equipment, promoting condom use, the innovative incorporation of a 'condom pouch' in the military uniforms (for storage and easy condom access), and promotion of insecticide-treated bed-net use. The MOH provided training programs for the military health staff in VCT, diagnosis and treatment of the HAMSeT diseases, including TB case detection and treatment. As mentioned in Annex B, the project procured equipment, drugs and supplies for prophylaxis, diagnosis and treatment of HAMSeT diseases.

d) Promote environmentally sound and cost-effective techniques for malaria vector control. The HAMSeT Control Project built on and expanded the earlier successes of the NMCP. A key addition was the implementation of a Pesticide Management Plan, which included prudent use of DDT for indoor residual spraying. This was part of a very detailed Environmental Assessment prepared for the project, as discussed in paragraph 3.17 under Safeguards.

3.14 Strengthen HAMSeT diagnostic healthcare and counseling services (Component 3):

a) Establish safe blood banks in *zoba* hospitals. The plan to establish *zoba*-level regional blood banks was constrained by human resource limitations. Instead *zoba* hospitals were provided with facilities for storage of blood units supplied by the Central Blood Bank in

48. For example, the Ministry of Education and the National Union of Eritrean Youth and Students targeted the youth, respectively focusing on in- and out-of-school youth; the National Union of Eritrean Women targeted women and the Ministry of Labor and Human Welfare and the MOH's Health Promotion Unit focused specifically on sex workers; the Federation of Eritrean Workers targeted workers and the Ministry of Transport targeted truckers in particular.

Asmara. Thanks to project financing, the latter is well-equipped, with well-trained staff and applying with up to date quality control mechanisms. The acute resource constraints facing the health system will pose important challenges especially in the more remote *zobas* facing high distribution costs and electricity outages.

b) Improve diagnostic, treatment and counseling of HAMSeT. The project financed training in HAMSeT prevention, case detection, syndromic and laboratory diagnosis and VCT. It was not practical to integrate all the training for the HAMSeT diseases, although there were instances where integration could have been better. Training was also provided for clinicians in the treatment of people with HIV/AIDS. The project procured equipment, medical supplies (including diagnostic tests) and drugs associated with prophylaxis, diagnosis and treatment and HAMSeT diseases.

3.15 Community-managed HAMSeT Response Program (Component 4). The implementation of the CMHRP was substantially delayed; the first sub-projects were implemented only in December 2002, 22 months after the project became effective. The delays were in part due to the lack of detailed planning when the project was approved and late completion of the Operational Manual.[49] The project overestimated the ability of communities to assess needs, design, implement and evaluate sub-projects. In order to expedite implementation, the project team launched the Rapid Results Initiative (RRI), which implemented results-oriented projects over a period of 100 days, and the Community Capacity Enhancement Process (CCEP) which provided training in proposal development, project management, and reporting to help communities define their needs and priorities.[50] The overall implementation experience (particularly in the first half of the project) revealed substantial confusion, and lack of coordination between activities implemented by the line ministries and non-governmental entities at the national and *zoba* levels and the CMHRP sub-projects. Despite the early implementation weaknesses, the result was an extensive network of peer-educators and peer-facilitators that reached down to the village level. The opportunity of the mid-term review in November 2004 was used to address some of the implementation challenges:

a) The low capacity of communities often led to reliance on *zoba*-level line ministries and non-governmental entities as implementers. At the mid-term review there was concern that sub-projects were not sufficiently community-driven. It was agreed that only sub-projects actually managed by the community would be funded.

b) A tenth of the approved CMHRP sub-projects and nearly a quarter of approved grant funds (roughly $1.8 million) were for activities like renovation of sports fields, construction of community buildings, and libraries (Table 3- 2 and Table E-3 in Annex E). These activities had been justified by the notion that by providing alternate activities (sport and libraries)

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49. This was in part due to the unfortunate death of the consultant while on mission.

50. The RRI is an implementation and management tool that was introduced to enhance the implementation of CMHRP sub-projects (as well as other aspects of the project). The CCEP was implemented to increase the ability of communities to successfully develop and implement CMHRP sub-projects. Out of the 8,283 individuals receiving CCEP training, 5,908 were community facilitators and 2,375 were community management team members. According to the independent evaluation 50 sub-projects had been generated through the CCEP tool (Kerouedan and Appaix 2006 in MOH 2006f).

sexual debut among the youth might be postponed, and that the meeting venues provided a location for awareness raising events especially aimed at the youth.

Table 3-2. Distribution of approved subprojects and grants by disease

	Approved sub-projects reviewed[c]		Approved grant	
Disease	**Projects**	**Percent**	**Nakfa (000)**	**Percent**
AIDS	495	58.6	50,576	43.9
HAMSeT	67	7.9	16,051	13.9
Tuberculosis	69	8.2	9,920	8.6
Malaria	97	11.5	9,213	8.0
Disease not specified[a]	23	2.7	2,504	2.2
Non-HAMSeT	93	11.0	27,042	23.5
Total	844	100.0	115,307[b]	100.0

Source: IEG analysis of *zoba*-level lists of approved CMHRP projects.
a. In these cases, there was an intervention, like "sensitization" or "training", but it was impossible to determine which of the diseases it pertained to, from the list.
b. This is the total amount approved for CMHRP grants for the 844 projects reviewed by IEG. According to the PMU, a total of 98,822,995 Nakfa was actually disbursed for the 908 projects that were completed.
c. The distribution of approved sub-projects by disease differs considerably from the distribution reported in the ICR, which attributed all approved projects to one of the three main diseases (HIV/AIDS, tuberculosis, malaria) and did not show any sub-projects attributable to the HAMSeT diseases collectively.

c) At the mid-term review the team expressed concern that too many sub-projects were not directly linked to HAMSeT disease control. The team recommended that only activities that could be directly linked to the HAMSeT diseases be funded, and that the maximum amount per sub-project be reduced from $30,000 to $5,000. In the last year of the project the size and orientation of the CMHRP sub-projects reflected these changes.

3.16 ***Financial management and procurement***. The project was relatively complex—with numerous implementing partners at various levels of government (national and *zoba*-level) as well as at the community level. Nonetheless, the project finances were well managed, thanks to experience gained during the implementation of the previous project, development of financial management manuals (for the national and *zoba*-levels), recruitment of accountants for zonal PMUs, training and a computer-based accounting system financed by the project. All annual audit reports were submitted as required and on time, and the external audits provided unqualified opinions on the annual financial statements for the project's entire duration. While there were some problems with delays in procurement, all procurements were carried out in accordance with the Development Credit Agreement. As remarked in the ICR, the Bank shares credit for this achievement because of a realistic procurement implementation plan and close supervision.

3.17 ***Safeguards.*** The Program had a category B rating for environmental safeguard purposes. An environmental assessment was conducted to assess the impact of the malaria control interventions, the main focus being the use of DDT for indoor residual spraying. The assessment concluded that only a small share of houses at risk would be sprayed with DDT; that the method of spraying was consistent with WHO guidelines and the *POPs exemption*;[51] and recommended that malaria surveillance should be improved and that DDT should gradually be replaced by

51. The "POPs (persistent organic pollutants) exemption" restricts DDT use and production to disease vector control only (not agriculture) and requires countries using DDT to follow WHO guidelines for disease vector control.

alternatives. A Pesticide Management Plan (PMP) was prepared following the recommendations of the environmental assessment.

3.18 ***M&E implementation***. The M&E plan was not approved until late in the life of the project and consequently the project lacked an M&E framework and M&E plan for most of its duration. The intention to collect baseline indicators by the end of FY02 was not fully accomplished. Until very late in the project there were no staff in the PMU with dedicated responsibility for M&E. The analysis of the CMHRP sub-projects by IEG revealed many inconsistencies and inaccuracies raising questions about the detail and quality of monitoring and supervision of sub-projects at *zoba*-level as well as at the central level.

3.19 A number of surveys were conducted and while they generated important information, there were some weaknesses. Several surveys were only single cross-sectional surveys with no baseline for comparison (the TB prevalence survey, the Lot Quality Assurance Sampling (LQAS) Survey [52]), and some variables across multiple surveys had only limited comparability (e.g., malaria data in the DHS in 1995 and 2002, the Bed-net survey in 2003, and the LQAS Survey in 2006; see Table 3-6 and Table F-5 in Annex F). The education sector conducted a needs assessment at the start and toward the end of the project, but the sampling for the two surveys was not comparable so the impact could not be formally assessed. [53] The tuberculosis prevalence survey provided some information on the disease's geographic distribution, but there were methodological concerns and disagreements on the findings (Box 3-3).

3.20 Repeated HIV sentinel surveillance surveys were conducted among women attending antenatal clinics, an important achievement (Table 3-4).[54] However, monitoring of HIV/AIDS interventions and outcomes among high risk groups had important limitations. There was no tracking of coverage of risk groups, and the recommended mapping of high-risk groups and *hot spots* for targeted interventions was not implemented. Behavioral surveys were conducted among high-risk groups such as sex workers and truck drivers although, there were some methodological weaknesses constraining their use in tracking behavior change.

3.21 ***M&E data utilization*.** The collection of project data from the zonal health offices remained weak for a large part of the project and consequently the use of the data to inform planning and implementation suffered. Health facility-based morbidity and mortality data were collected through the HMIS at the *zoba*-level and was sent to national disease control programs for analysis. The development of the HMIS—an important achievement by the MOH—

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52. Based on the Lot Quality Assurance Sampling (LQAS) methodology the country was divided into supervision areas which roughly coincided sub-*zoba*s. Sub-*zoba*s consist of large communities called *kebabis*, and based on the total population of each *kebabi*, 19 interviewees per supervision areas were randomly selected taking a probability sample proportional to the population size. The total sample size was 854 women 15-49 years. There were some differences in the phrasing of the questions complicating comparability with the DHS findings.

53. Ministry of Education and Partnership for Child Development undated; Ministry of Education and others 2007.

54. In addition, an extensive database on HIV surveillance (conducted every second year) exists in the Ministry of Defense, but this was not available for analysis or use. This is unfortunate because the prevalence data, especially among the new conscripts, is likely the best approximation of incidence in Eritrea.

generally occurred independently of the project M&E measures envisaged in the project appraisal document.

3.22 The use of data to guide implementation was particularly strong in the malaria control program. The program had a detailed data collection system which involved malaria agents, health stations, health centers, *zoba*-level and national HMIS offices and malaria control program offices. This data was used not only to track outputs, but to track program effectiveness and inform programming decisions. In the other disease control programs (HIV/AIDS, STI and tuberculosis) there was only limited evidence that data were used to assess efficacy, program effectiveness or impact. Nevertheless, the opportunity of the mid-term review was used to institute important changes (see paragraph 3.15).

Achievement of Objectives

3.23 The achievement of the objective of the HAMSeT Control Project—to reduce mortality and morbidity due to the HAMSeT diseases—is discussed separately for each disease. Table B-3 in Annex B provides greater detail on the outputs of the ministries participating in the multisectoral component and the health promotion activities implemented by the MOH.

OBJECTIVE: REDUCE THE MORTALITY AND MORBIDITY DUE TO HIV/AIDS AND STIS[55]

3.24 The IDA credit was a major source of funding for the country's HIV/AIDS interventions and accounted for 60 percent of the country's total spending ($33.8 million) on HIV/AIDS over the period 2001–2005. Jointly IDA and GOE accounted for two thirds (67 percent) of the country's HIV/AIDS spending. Starting in 2005, a major new source of funding—the Global Fund—committed $3.6 million for HIV/AIDS with a major commitment to funding AIDS care and treatment.[56]

Outputs

3.25 HIV preventive interventions included: extensive awareness-raising among the general population and among key risk groups; encouraging and expanding voluntary counseling and testing (VCT); behavior change activities targeting pupils and their parents;[57] condom-use and behavior change campaigns and encouraging VCT among sex workers and truckers; condom distribution; blood safety; and vocational and income-generating activities among sex workers.[58]

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55. STIs are not discussed separately from HIV/AIDS because the rationale for public intervention in STI control is integrally related to the fact that ulcerative STIs increase the risk of HIV transmission. Furthermore, the HIV/AIDS and STI behavioral interventions and risk groups targeted endeavor to achieve similar outcomes: deferred sexual debut among the youth, partner reduction and condom use among high risk groups.

56. MOH 2007b, pp123-4.

57. Starting in 2003, a number of the CMHRP sub-projects (some of them part of the Rapid Results Initiative) were implemented, reaching 50,000 secondary school students, 15,000 teachers and 17,000 parents for HIV/AIDS awareness and behavior change. Following several years of development, an HIV/AIDS and life skills education program was implemented in the schools toward the end of the project during 2004–05.

58. Because of the high cost and questionable effectiveness of vocational and income-generating activities among sex workers in terms of preventing HIV, these interventions were discouraged following the mid-term review.

Of the community-based sub-projects, the majority (58 percent) was for HIV/AIDS/STIs in the form of awareness raising, sensitization, and behavior change activities (Table 3-3).

Table 3-3. Distribution of approved sub-projects for HIV/AIDS and (joint) HAMSeT diseases, by target group

	Approved sub-projects[b]		Approved grants	
Group[a]	**Number**	**Percent**	**Nakfa**	**Percent**
High-risk	67	11.6	6,713,276	9.8
Low-risk	311	53.8	36,172,579	52.7
Service groups	95	16.5	13,581,444	19.8
Unspecified target	104	18.0	12,136,785	17.7
Total	577	100.0	68,604,804	100.0

Source: IEG analysis of *zoba*-level lists of approved CMHRP projects.
a. The targeted groups are provided in Annex E. Examples of high-risk groups include: sex workers, truck drivers, tourism and hotel workers etc. Examples of low-risk groups include: the general population, youth, women, farmers etc. Examples of service groups are orphans and PLWHA.
b. Includes 16 sub-projects for 'unspecified' diseases, mostly for sensitization, from SRS *zoba* and excludes one HAMSeT sub-project in Maekel *zoba* that was solely for malaria and tuberculosis.

3.26 Successive National HIV/AIDS/STI Strategic Plans identified risk groups.[59] Coverage of behavior change interventions and condom distribution among the military appears to have been universal, but for security reasons data access was limited. In 2006, the Ministry of Labor and Human Welfare estimated that there were 3,500 sex workers nationwide, and that the project-financed interventions reached about 1,000 sex workers. Interventions were also implemented by the MOH Health Promotion Unit. It is unfortunate that coverage data was not collected.[60] According to interviews during the IEG mission three-quarters of all truck drivers had been reached through awareness campaigns, but again no coverage data were available for verification. Under the CMHRP component a tenth of interventions specifically targeted high-risk groups and more than half of sub-projects were targeted at low-risk groups (Table 3-3).

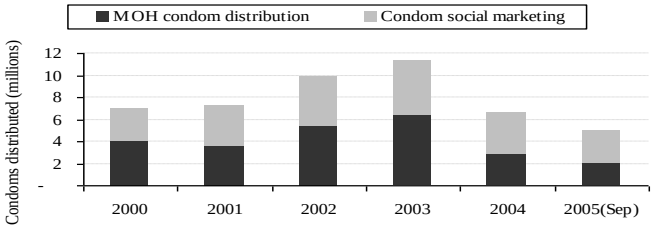
3.27 Publicly distributed and socially marketed condoms increased by 62 percent between 2000 and 2003, after which total condom distribution declined—primarily due to a two-thirds reduction in condoms distributed by the MOH (Figure 3-1). The reasons for the reduction in condom distribution by MOH were two-fold: to reduce wastage, and to encourage private purchase of condoms. No information on private condom sales was available to assess the responsiveness of private condom demand. An additional source of condoms was the Ministry of Defense; cumulatively 12 million condoms were distributed by the military over the project's duration. The Eritrean Defence Force distributed 'condom pouches' as part of the military

59. Youth were identified as an important risk group, yet surveys show low average levels of sexual activity and the lowest HIV prevalence. Median age at first sex is between 17 and 18 years. In 1995, 99.4 percent of women aged 15-19 years reported having no sexual partners and in 2002 67.6 percent had never had sexual intercourse (Macro International 1995, 2002).

60. The estimation of coverage has many methodological challenges, as coverage is a function of program reach as well as intensity of exposure. While these challenges are recognized, even imperfect coverage data could have provided a starting point for future improvements and could have assisted with the construction of a results chain linking inputs and intermediate outcomes.

uniform to 90,000 members of the armed forces. This sent a powerful (and visible) message regarding the military's commitment to HIV/AIDS prevention.

Figure 3-1. Condom distribution, 2000–2005



Source: MOH 2007.

3.28 Establishing new VCT centers, purchasing HIV tests, and information campaigns emphasizing the importance of getting tested were major project outputs. At the start of the project VCT was available only in a few large towns, and by 2005 the number of VCT centers had increased to 17. The number of VCT clients progressively increased over the life of the project, from roughly 2,000 in 2001 to over 75,000 in 2006 an important achievement (Table F-4 in Annex F). Contributing to the increase in demand for VCT services was a socially enforced practice of pre-marital HIV testing encouraged by all the religious bodies.[61] Box 3-2 points to some of the continuing controversies that exist in the literature regarding the effectiveness of VCT. However, during project implementation the expansion of VCT access was in line with the international best practice at the time. There is still no consensus on this issue from HIV/AIDS authorities such as UNAIDS and WHO.

Box 3-2. Efficacy of voluntary counseling and testing

Voluntary counseling and testing featured prominently in the HIV/AIDS response in Eritrea. The benefits of counseling and testing are said to be: (i) an entry point for care, support and treatment services for a person who tests positive and to learn how to live positively by avoiding infection of other individuals; and (ii) for the people who test negative—the overwhelming majority in Eritrea—counseling and testing is said to offer the opportunity for the person to "plan one's future" and "commit to avoid risky behaviors." While HIV/AIDS experts, including UNAIDS, have promoted VCT as a key HIV prevention intervention, the more recent literature suggests that its benefits for preventing the spread of HIV remain ambiguous.

The findings from a systematic review by Denison et al. (2006) of the effect of VCT on risk behavior found 14 studies that met the quality control criteria and concluded the following: (i) one randomized controlled trial showed a significantly greater decrease in unprotected sex with non-primary partners among individuals in the clients receiving VCT as compared to the clients receiving only health information,[a] and also a significant intervention effect for couples;[b] (ii) eight studies examined condom use: two showed significant increases in use; four showed mixed results depending on partner type and duration of follow-up; and two showed non-significant changes; (iii) of the studies that measured biological outcomes: one showed significant decreases in gonorrhea prevalence and HIV incidence among women with tested partners; two showed no significant changes in HIV or STI incidence; one showed higher rates of STI/HIV comparing men who did versus did not receive their test result.

a. Odds ratio = 0.68; $p<0.0001$. b. Odds ratio = 0.72; $p<0.014$.

61. The surge in demand for pre-marital testing has resulted in sending relatively younger and lower-prevalence adults to VCT centers, contributing to the drop in HIV prevalence among clients. Thus, HIV prevalence trends in VCT centers should be interpreted with great caution.

3.29 The project supported training of health workers in the syndromic management of STIs, especially at health stations and health centers, and training of health professionals within the Ministry of Defense.[62] It is well known in the literature that care for a significant share of STIs is sought in private facilities (private practitioners, pharmacists and other drug vendors),[63] and this is likely to be the case also in the urban centers of Eritrea. It is, therefore, unfortunate that private entities were not more explicitly targeted with STI training.

Outcomes and Impacts

3.30 Blood safety. The support to the National Blood Transfusion Service was initiated under the Health Project (Table 2-4), and has been continued under the HAMSeT Control Project. The National Blood Transfusion Service screens all donated blood and maintains rigorous quality assurance standards, subjecting 1 in 20 of blood units tested (positive or negative) to testing at the National Health Laboratory for external quality assurance. Over the years the transfusion service's capacity has expanded to meet the country's increasing blood supply needs—in 2006 nearly six thousand blood units were screened, which is 41 percent more than in 2003.

3.31 STI prevention and control. Knowledge of STIs other than HIV/AIDS was low at the start of the project—in 2002 some 58 percent of women of reproductive age reported no knowledge of STI symptoms.[64] Among high-risk groups knowledge was better—in the 2001 RGBIS survey, about 60 percent of respondents from high risk groups had correct knowledge of STIs other than HIV.[65] During field visits, IEG found that youth, factory workers, and sex workers were generally able to spontaneously mention the major STIs.

3.32 Prior to 2001, there was a downward trend in STIs treated in public health centers and hospitals (Figure 3-2). Over the period 2001–2006, the downward trend slowed, while STI cases diagnosed syndromically in health stations steadily increased.[66] According to the HAMSeT Final Report, at project closing a large share of health workers was not able to manage STIs using the syndromic approach.[67] The only source of population-based trend data on STIs is the HIV sentinel surveillance survey among antenatal clinic attendees, which also collects data on syphilis prevalence. The syphilis prevalence rate among ANC attendees decreased by a third from 1.7 percent in 2003 to 1.1 percent in 2007.

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62. 1,486 doctors, nurses, battalion health officers were also trained in syndromic STI management.

63. Khamboonruang et al. 1996; Benjarattanaporn et al. 1997; Msiska et al. 1997, Faxelid et al. 1998, Walker et al. 2001.

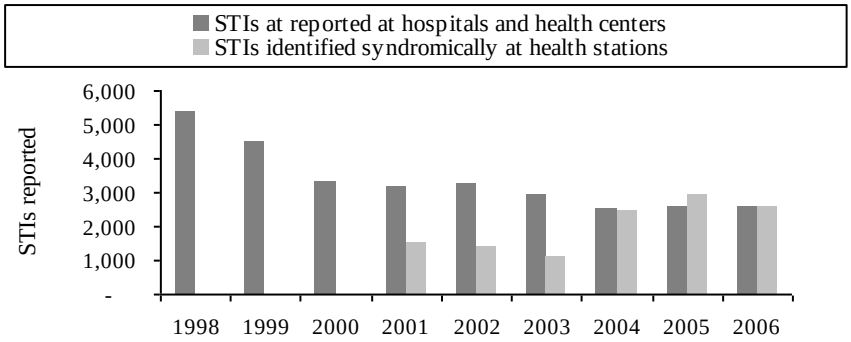
64. Macro International 2002.

65. MOH 2001 (p. 6).

66. It is unclear from the HMIS data what share of these cases were referred to the health centers and for this reason the STIs cases from the two sources have not been added to arrive at a total number of STIs cases treated at hospitals, health centers and health stations. The increasing trend at health stations could reflect better detection of STIs in health stations (conceivably associated with the project-financed training) or a real increase in STI incidence (which would reflect a failure of prevention).

67. It is worth noting that the number of pharmacies, drug shops and drug vendors—all sources of alternative STI treatment—increased between 2000 and 2006. This potentially could have drawn patients away from the public sector, but statistics on private treatment of STIs are not available for verification.

Figure 3-2. Public sector STI treatment, 1998–2006



Source: MOH 2006a, 2007a.

3.33 HIV awareness, knowledge and risk perception. The level of AIDS awareness and knowledge of HIV/AIDS prevention was already relatively high at the start of the project. In 2002 96 percent of women aged 15–49 years had heard of AIDS, 88 percent thought that AIDS was preventable, and 76 percent knew that a healthy-looking person could have AIDS.[68] More than three quarters of the youth (aged 15–19 years) correctly identified condom use as a prevention method and more than ninety percent identified partner reduction as a prevention method (Table F-5 in Annex F). Among sex workers perception of no HIV risk decreased from 83 percent to 51 percent between 2001 and 2004.[69] Self-perception of HIV risk among sex workers thus increased substantially between 2001 and 2004, but it is worth noting that half of sex workers still perceive themselves to be at no risk for HIV.

3.34 Behavior change. There were no baseline or trend data on consistent condom use with non-regular partners, the number of non-regular partners or participation in commercial sex, in general or among high-risk groups. Data from two cross-sectional behavioral surveys reported that the number of women in bars reporting condom ever-use increased from 63 percent in 2001 to 84 percent in 2004.[70] However, in a 2007 survey half of sex workers reported having steady boyfriends or 'mini-husbands' and of these only 13 percent reported condom use. Among army conscripts there seems to be a high level of awareness and condom use. For example, in 2001 the HIV/AIDS Risk Groups and Risk Behavior Identification Survey (RGBIS) showed the smallest difference between age at first sex and age of first condom use among army conscripts—for the other risk groups the difference was between 2 to 8 years compared to no

68. Macro International 2002 (p186).

69. In 2001 nearly three quarters (72 percent) of respondents did not perceive themselves at any risk of HIV infection, compared to 47 percent in 2006. For a country with a low-level epidemic concentrated in high-risk groups it may not surprising that half of adults perceive themselves at no risk for HIV. Of greater importance is the perception of risk among high-risk groups. The differences in risk perception among sex workers between 2001 and 2004 have to be interpreted with caution because of differences in the definition of sex workers across the two surveys.

70. Quoted from ESMG/FHI behavior study (2004) in MOH (2006f). Over the years there has been emerging consensus in the HIV prevention literature that this variable somewhat flawed that what matters is '*consistent* condom use' or 'condom use *at last sex act*' not '*ever* condom use.'

difference for army conscripts.[71] Given the gaps in the evidence base on partner reduction or consistent condom use caution is needed as one makes inferences about the impacts of the prevention interventions on behavior change. Similar reservations were expressed in the independent evaluation commissioned by the MOH.[72]

3.35 Up until 2005 the country appeared to have been able to maintain a low-level epidemic (Table 3-4 and Figure 3-3). The new evidence from the 2007 HIV sentinel surveillance survey shows a decrease in new HIV infections and is indicative of important successes in HIV prevention. Trends in HIV prevalence among 15-24 year olds are less likely to suffer from the limitations of HIV prevalence data as an indicator of impact of prevention interventions than HIV prevalence among 15-49 year olds (because infections among 15-24 year olds are more likely to be new HIV infections). Between 2003 and 2007 there was a steady downward trend in HIV prevalence among 15-24 year old antenatal clinic attendees, representing a 57 percent reduction in HIV prevalence in this age group (Figure 3-3). These findings are furthermore supported by the 32 percent decrease in syphilis prevalence among antenatal clinic attendees between 2003 and 2007.

Table 3-4. HIV prevalence survey results, 1994–2007

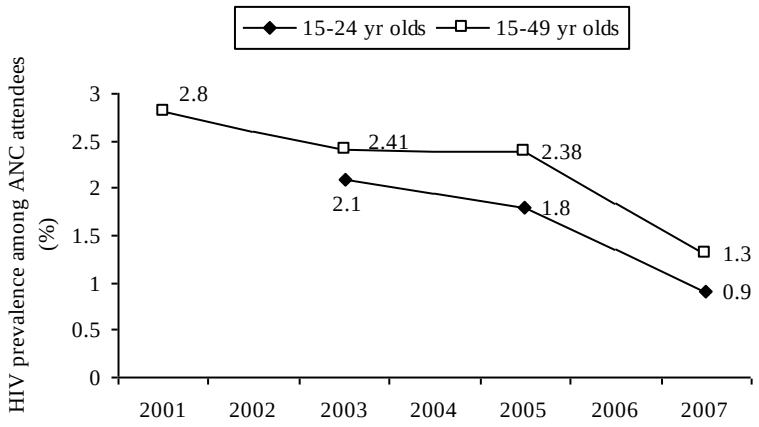
	Results[a]	Survey
1994	3 percent	HIV surveillance survey in Asmara
1999	4.2 percent among antenatal clinic attendees	Sentinel surveillance of antenatal clinic attendees in major urban areas of Maekel, Debub, Anseba, and Northern Red Sea
2001	2.8 percent among antenatal clinic attendees; 22.8 percent among female bar workers; 4.6 percent among military personnel; 0.1 percent among secondary school students	National sentinel surveillance of antenatal clinic attendees and other risk groups
2003	2.41 percent among antenatal clinic attendees; Anseba 1.3 percent; Debub 1.1 percent; Gash Barka 1.6 percent; Maekel 3.6 percent; NRS 2.2 percent; SRS 7.2 percent	National sentinel surveillance of antenatal clinic attendees (n=4,559).
2005	2.38 percent among antenatal clinic attendees; Anseba 1.3 percent; Debub 1.65 percent; Gash Barka 2.06 percent; Maekel 3.48 percent; NRS 1.77 percent; SRS 5.9 percent	National sentinel surveillance of antenatal clinic attendees (n=5,033).
2006	8.08 percent among sex workers in Asmara. 14.67 percent among sex workers in Massawa.	Special survey among sex workers in Asmara (n=272) and in Massawa (n=252).
	7.0 percent among truck drivers.	National survey of truckers (n=300).
	34.33 percent among TB patients.	TB patients in Asmara (n=166).
2007	1.3 percent among ANC women; 0.9 percent among 15-24 year old ANC attendees.	National sentinel surveillance of antenatal clinic attendees.[b]

Source: MOH 2007b (p63); MOH 2008c (p16); MOHd 2008 cited in World Bank 2008c (p5).
a. With the exception of the antenatal clinic sentinel surveillance surveys, the sampling methodologies for the surveys vary (especially among high risks groups) and their results may not be directly comparable.
b. As of October 8, 2008 the full report from the survey had not been released.

71. MOH 2001(p7).

72. Kerouedan and Appaix (2006) in MOH 2006f.

Figure 3-3. HIV prevalence among antenatal clinic attendees, 2003–2007



Source: MOH 2007b (p63); MOH 2008c (p16); MOH 2008d cited in World Bank 2008c (p5).

3.36 Care and Stigma reduction. The project made major inroads in expanding home-based care and support for people living with HIV/AIDS (PLWHA) and orphans, and in reducing stigma. The project was directly responsible for funding the creation of *Bidho*, the Eritrean organization of PLWHA, in January 2002. This achievement is not trivial given the conservative and relatively closed community structure. As of November 2005, *Bidho* membership had reached nearly 6,000 PLWHA and their relatives. According to the National HIV/AIDS/STI and Tuberculosis Control Division (NATCoD), by the end of the project 3,000 people living with HIV/AIDS were getting support through home-based care.[73] The project provided about $0.4 million in grants for training, care, financial support and counseling for PLWHA. According to a MOLHW survey there were 2,800 AIDS orphans in 2005, and under the project each orphan received 200 Nakfa per month.[74] The 27 CMHRP sub-projects for the care and support of orphans accounted for 15 percent of all CMHRP grant funds allocated to HIV/AIDS.

OBJECTIVE: REDUCE THE MORTALITY AND MORBIDITY DUE TO TUBERCULOSIS

Outputs

3.37 The main outputs included *capacity building*, *planning* activities culminating in the development of the National Tuberculosis Strategic Plan (2004–2009),[75] and the procurement of *diagnostic microscopes* in support of the expansion of the DOTS (directly-observed treatment, short-course) program.[76] Formative research was conducted to inform the tuberculosis communications strategy, which was drafted in 2004 but not implemented. The project financed

73. MOH/NATCoD (2005) cited in MOH 2007b (p75).

74. Depending on the exchange rate used, this equals $13-$20 per month. This assistance was discontinued under the HAMSeT II Project and financial support is being financed though the Global Fund.

75. MOH 2004b.

76. The NTCP introduced the DOTS program in 1997 with the support of WHO and the Italian Cooperation under the PHARPE Project (1997-2007). At the time policy guidelines were distributed and training was provided to laboratory technicians, communicable disease control (CDC) coordinators and 70 percent of health workers at the *zoba*-level.

training of nursing staff and technicians in support of DOTS expansion. For a large part of the project tuberculosis control efforts were lagging, largely due to staffing problems. After the mid-term review some of the staffing problems were addressed through additional training and procurement of long-term technical assistance. *Drug procurement* that was started under PHARPE was extended under the HAMSeT project. DOTS is available in 70 percent of facilities where smear microscopy is available, but it is unclear in what share of facilities smear microscopy (including reagents) is available.

3.38 The *Tuberculosis Prevalence Survey* was conducted in 2005. This was the first tuberculosis survey conducted in the Africa region. However, there were some design, quality and technical limitations (Box 3-3). Some of the disagreements on tuberculosis epidemiology persisted well after the survey was completed. Furthermore, the prevalence survey was not able to assess the reasons for the country's low case detection rates, one of its objectives.

Box 3-3. The epidemiology of Tuberculosis in Eritrea—some lingering questions

There is substantial disagreement on the epidemiology of tuberculosis in Eritrea—in particular, on the tuberculosis prevalence and case detection rate—to the extent that it has hampered implementation.[a] The first tuberculosis survey conducted in Eritrea in 2005 among individuals 15 year olds and older, as is standard practice for tuberculosis surveys. It estimated a prevalence of 90 new smear positive cases per 100,000[b] in individuals aged 15 years and older. Total population prevalence was estimated at 50 per 100,000, assuming that 44 percent of the Eritrean population was under-15 years of age and zero tuberculosis prevalence among this age group.[c]

These results are much lower than the World Health Organization's (WHO) prevalence estimate of 250 per 100,000, which is based on a widely used rule of thumb in tuberculosis epidemiology and informed by data from neighboring countries. A further source of disagreement is the population estimate used as the denominator. WHO uses 4.1 million and NATCoD uses 3.2 million, i.e., the population estimate used by WHO is 29 percent higher than the estimate used by NATCoD. Using the approach described above WHO estimated case detection rate at between 13.2 and 19.4 percent for 2006. The NTCP estimated tuberculosis case detection rate at 43 percent for the same year.

a. The survey was conducted among 38,047 individuals. Half of this sample was under-15 years old and, as is standard in TB surveys, these respondents were not part of the sputum survey. Based on the study's case definition, 15 new smear positive cases were detected in the survey. The prevalence estimate, corrected for under-sampling of men and other design effects, yielded a smear positive prevalence estimate of 90 per 100,000 for adults. The survey had some limitations: (i) the large share of individuals who provided saliva samples instead of sputum samples; and (ii) the loss of 1,378 samples for testing. Some of the possible explanation cited for the latter are: handling in of empty sputum cups by included individuals to the field teams; contamination of sputum cup so that the sputum sample could not be examined, loss of sputum cups by the field or laboratory teams, incorrect recording by field team, or incorrect recording of laboratory result by laboratory team. Finally, although the study had intended to assess the reasons for low case detection in addition to prevalence estimation, it did not shed much light on case detection which is particularly vexing in the Eritrean context.
b. Confidence interval (95 percent): 35–145 per 100,000.
c. No justification of this assumption is provided. This assumption is questionable based on the following: Tuberculosis was one of the leading causes of death among children under 5 years (MOH 2006a). In 2006 children under-5 years accounted for 7 percent of out-patient tuberculosis cases, 12 percent of in-patient tuberculosis cases and 7 percent of tuberculosis mortality.

3.39 There were few CMHRP sub-projects on tuberculosis and their distribution by zoba was poorly correlated with the distribution of tuberculosis in the country. Only 8.2 percent of CMHRP sub-projects were specifically devoted to tuberculosis (Table E-2c in Annex E). It is, however, conceivable that 7.9 percent of joint HAMSeT sub-projects could have contributed to raising tuberculosis awareness, sensitization, and training. Over half of the tuberculosis sub-projects financed nutrition for tuberculosis patients, DOTS, and outreach; the extent to which

these activities were linked to the National Tuberculosis Program is unclear, and there is no information on their effectiveness.[77]

3.40 The weaknesses in the tuberculosis program caused the project team to prioritize and emphasize tuberculosis in the project oversight and technical support. Some of the most important deficiencies of tuberculosis control during the course of the project were: (i) organizational and planning weaknesses in the National Tuberculosis Control Program, including human resource constraints;[78] (ii) while passive case detection correctly remains the core method of tuberculosis case detection, only recently has there been moves to use active case detection to complement passive case detection;[79] (iii) low level of community participation to complement facility-based disease control efforts; and (iv) continued disagreements on tuberculosis epidemiology between the MOH and the international community (Box 3-3).

Outcomes and Impacts

3.41 Aside from knowledge of persistent coughing, awareness of other tuberculosis symptoms was generally modest. Household data from 2005 found that about 80 percent of men and women reported knowledge of persistent coughing as a tuberculosis symptom.[80] However, knowledge of the most distinguishing feature of tuberculosis, night sweats, was reported among less than 10 percent of respondents. A tenth of women did not know any tuberculosis symptoms.

3.42 Performance relative to the global "Stop TB" targets for tuberculosis control has been mixed, as illustrated in Figure 3-4.[81] Case detection increased from 35 percent in 1999 to 43 percent for 2006, well below the Stop TB target of 70 percent.[82] There has been greater success in tuberculosis treatment—cure rate increased from 73 percent in 2003 to 81 percent in 2006, just short of the Stop TB target of 85 percent. Morbidity data show downward trends in the latter half of the project's life from a high of 4,200 in 2003 to 2,900 in 2006.[83] This has largely been

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77. Another 39 percent of tuberculosis sub-projects were labeled as non-specific "tuberculosis prevention & control" or "outreach" or simply "tuberculosis project," so it is impossible to know what was actually financed. A tuberculosis discussion guide for the CMHRP activities was completed only in 2008, under the HAMSeT-II Project.

78. According to the independent evaluation of the HAMSeT Control Project: "The National TB Control Programme is probably still struggling to assert itself in the context of the NATCoD. Particularly, it suffers from a lack of a number of qualified human resources, and has no dedicated representative at the zoba level, since the CDC shares its activities between HIV/AIDS, STIs and TB. There are no real epidemiologists at the decentralized levels, and TB promoters, even if very useful in order to bring up awareness about the disease and building up community responses, are not enough for the implementation of a solid and sustainable DOTS-oriented strategy." (Kerouedan and Appaix (2006, p80) in MOH 2006f).

79. A feature of the plan for 2008 is to include active case detection, including among PLWHA.

80. MOH 2006d.

81. The targets of the Stop TB initiative are: case detection rate of 70 percent and cure rate of 85 percent.

82. According to NATCoD data case detection was 69 percent in 2003 (just under the global target of 70 percent), but this figure seems questionable given the more recent estimate of 43 percent for 2006 (MOH 2008b).

83. Two sources shown in Table 3-5 are from NATCoD Annual Report for 2007 and HIMS data for 2005 and 2006. The NATCoD data shows a downward trend after 2003, while the HMIS data suggest a decrease of 14.2 percent between 2005 and 2006. Note, the HMIS estimates are 40-50 percent higher than the NATCoD data for the same years.

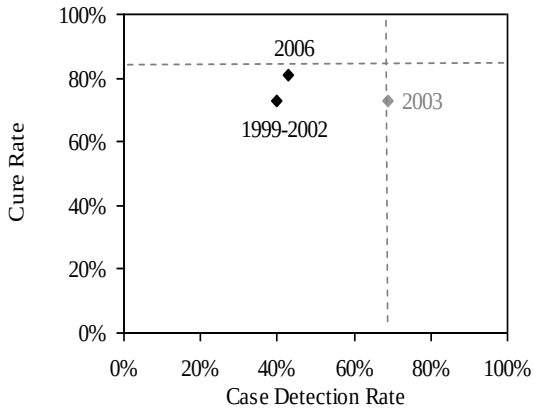
thanks to *zoba*-level service delivery while the weaknesses in the National Tuberculosis Control Program mentioned in paragraph 3.40 were raised throughout the project's lifespan.

Table 3-5. Tuberculosis morbidity, 1999-2007

	Data from NATCoD Annual Report for 2007	HMIS data for 2005 and 2006
2000	1,905	
2001	2,692	
2002	2,672	
2003	4,240	
2004	3,753	
2005	3,245	4,785
2006	2,939	4,106

Source: MOH 2008b, MOH 2006a, MOH 2007a.

Figure 3-4. Tuberculosis case detection rate and cure rate relative to global "Stop TB" targets for TB control, 1999–2006



Source: MOH 2008b; MOH 2006a, 2007a.

OBJECTIVE: REDUCE THE MORTALITY AND MORBIDITY DUE TO MALARIA

Outputs

3.43 The project financed a substantial increase in bed-nets, bed-net impregnation, indoor residual spraying and vector control, engaging significant participation in affected communities. Bed-net distribution peaked at 220,000 in 2004, then steadily declined to 81,000 in 2006. Initially, each household in malarious areas received one free bed-net, and this was subsequently increased to two bed-nets per household, or more for large households. Annual bed-net impregnation sharply increased from less than 10,000 in 2000 to 660,000 in 2006. Between 2001 and 2005 the bed-net re-impregnation rate increased from 53 to 93 percent. Indoor residual spraying (IRS) peaked at 97,000 households in 2003 IRS, declining to 69,000 households in 2006 as selectivity improved.[84] The use of DDT gradually decreased over the project lifespan and other insecticides less toxic to humans increased (e.g., malathion).[85] Households in sub-zobas in the malarious zobas were targeted for IRS based on assessments by malaria agents and the village leaders.[86] Vector control was the dominant activity in malaria sub-projects of CMHRP (Table E-2d in Annex E)—accounting for 24 out of 38 malaria sub-projects in Gash Barka, for example. A community survey in 2004 found that 61 percent of households

84. Data from 2000 through 2004 from Graves (2004) and MOH (2006b).

85. One exception was in Gash Barka. Malathion resistance was suspected in Tessenei sub-*zoba* and DDT was used exclusively in this and neighboring sub-*zobas*, Acordat and Barentu explaining the increase in DDT use in 2003 in Gash Barka.

86. Initially IRS took place in NRS, Gash Barka and Debub. IRS has been discontinued in NRS because of low malaria risk.

participated in ecological management activities, and as high as 80 percent in zoba Anseba.[87] It is worth noting that, with the support of the Bank, Eritrea is the only country in Africa that carried out larvaciding and source reduction on a large scale.

3.44 The project also financed substantial training of health workers, community health workers and community members in malaria detection and treatment. Joint HAMSeT training workshops for health workers, HAMSeT control guidelines and policies were developed and implemented. Topics specific to malaria included rapid detection and treatment, as well as the treatment of severe malaria in hospitals. Stronger links with health center and health station staff were forged with the view to improve quality of malaria clinical management. Beyond this, the project financed eight additional *meteorological stations*, which became operational in 2002, bringing the country's total to 11 stations.

Outcomes and Impacts

3.45 Knowledge and behavior. There were high levels of knowledge and awareness of malaria risks, symptoms and control measures. Bed-net ownership increased substantially between 2002 and 2006, but bed-net use data are harder to interpret. In 2006 more than ninety percent of respondents identified bed-nets as the best malaria preventive method, and more than 80 percent knew at least three malaria symptoms and at least two ways to prevent malaria.[88] Between 2002 and 2006 bed-net ownership increased from 34 percent to three quarters of respondents, and about 90 percent in malarious *zobas* (Table 3-6). Insecticide-treated bed-net utilization is confounded by seasonal effects and the regional distribution of the disease.

Table 3-6. Bed-net ownership and utilization, 2002–2006

Behavioral variables[a]	DHS (2002)[b]	Bed-net survey (2003)[c]	LQAS Survey (2006)[d]
Households with at least 1 bed-net (percent)	33.8 (Gash Barka: 53.1) (Anseba: 44.6) (Debub: 32.7)	92.7	78.1 and 76.8 for women and men (Gash Barka: 92.6 and 97.3) (Anseba: 92.9 and 97.8) (Debub: 85.9 and 93.3)
Children under 5 years who slept under an ITN the previous night (percent)	4.2 (Gash Barka: 8.0) (Anseba: 4.5) (Debub: 5.4)	76.1	39.6 (Gash Barka 59.3) (Anseba 52.9) (Debub 51.6)

Source: Macro International 2002, MOH 2004a, MOH 2006d

a. While behavioral data were obtained from a three surveys (the DHS (2002), the Bed-net survey (2003), and the LQAS survey (2006). Differences in the timing of the surveys suggest limited comparability of DHS survey with the Bed-net and the LQAS surveys—particularly for behavior change variables because unlike knowledge, behavior change (e.g., bed-net ownership and use) is seasonal.

b. The DHS (n=9,389 households) was conducted in all *zobas* during the dry season (Macro International 2002).

c. The survey (n=1,559 households) was conducted in Anseba and Gash Barka only during the 2003 rainy season 2003 (Eisele et al. 2006).

d. The LQAS survey (n=854) was conducted in all *zobas* during the rainy 2005 season (MOH 2006b).

3.46 Diagnosis and treatment. An evaluation conducted by the NMCP in 2004 found quality of diagnosis to be good, supply of drugs to be moderate, and patient management to have some

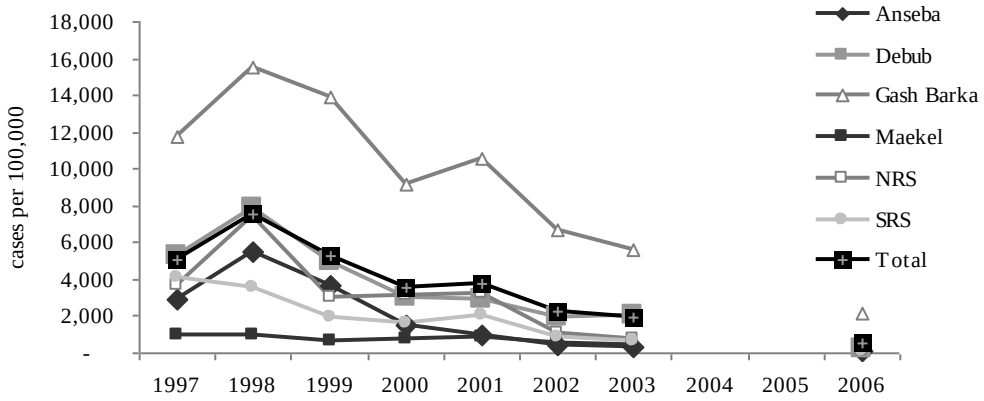
87. Nyaranga et al. 2006 (p7).

88. MOH 2006d (p64).

shortcomings.[89] At the sampled health centers and hospitals, laboratory testing was done in 81 percent of suspected patients and the level of diagnostic skills was high.[90] Two thirds of the sampled facilities reported no stock-outs of anti-malarial drugs with the lowest being at health centers (43 percent) and at facilities in the NRS *zoba* (33 percent). Only 58 percent of patients were managed according to the national guidelines.[91] Based on project-financed research the NMCP changed its first-line treatment as chloroquine-resistance increased.[92] Facility-based treatment was strongly complemented by community-based malaria agents. Malaria agents provided presumptive treatment at the community level. In 2001, half of fever cases were treated by malaria agents at the community level and this share increased to nearly eighty percent in 2005.

3.47 Incidence, morbidity and mortality. There were substantial decreases in malaria morbidity and mortality and over time, a larger share of the improvement in incidence can be ascribed to malaria control interventions. Between 2001 and 2006 malaria morbidity decreased by 85 percent (Figure 3-5).[93] As mentioned in paragraph 2.23, between 1999 and 2003, half of the variance in malaria incidence could be explained by variance in rainfall pattern. However, after 2004 there was a divergence in the trend in malaria incidence and rainfall trends (Figure 2-3). After 2003 the share of the variance in malaria incidence explained by rainfall trends drops to a third, suggesting that malaria control interventions increasingly account for a larger share of the reduction in malaria morbidity and mortality.

Figure 3-5. Malaria morbidity rate by *zoba*, 1998–2006



Source: Graves 2004; MOH 2004a; MOH 2006a, 2007a.

3.48 There was a high degree of complementarity between the various donor-financed malaria control inputs, strongly informed by the joint planning process firmly led by the NMCP. At the

89. MOH 2004a. The survey included 28 facilities in the malarious *zobas*.

90. This is evidenced by 99 percent sensitivity (the share of positive cases correctly diagnosed) and 85 percent specificity (the share of negative cases corrected diagnosed) of diagnostic tests.

91. Nyaramga et al. 2006.

92. From chloroquine to chloroquine in combination with sulfadoxine-pyrimethamine (fansidar).

93. This includes only facility-based data. According to HMIS data, there was a decline of 125,746 to 19,120 malaria cases for the period 2001-2006, and is consistent with Graves (2004).

start of the project there was already a significant decline in malaria incidence after the peak reached during the 1998 outbreak. Under HAMSeT, the Bank financed 38 percent of the NMCP expenditure and attribution for the success is clearly shared.[94] This share may appear modest, but the Bank was able to finance expenditures that could not be financed from other sources. According to interviewees, the Bank-financing was instrumental in funding community-based vector control and the malaria agents, thought to be critical to the overall success of Eritrea's malaria control efforts. In fact, Eritrea was the first country in Africa to achieve the Abuja targets for malaria control.

Project Ratings

3.49 The **outcome** of the HAMSeT Project is rated *moderately satisfactory*. This outcome rating is derived from the ratings (relevance, efficacy and efficiency) as they apply to the diseases addressed in the project: malaria, HIV/AIDS and STIs, and tuberculosis (Table 3-7).

3.50 **Relevance.** Overall relevance is rated high for malaria, and substantial for HIV/AIDS/STIs and tuberculosis.

3.51 **Relevance of objective.** The objective was to reduce morbidity and mortality from the HAMSeT diseases. The project objectives focused on the main causes of the country's disease burden, and were consistent with the Bank's past and current strategic documents which stressed the development of Eritrea's human resource base, the support of sustainable investments in the health sector and mitigating the socio-economic and disease burden from malaria and HIV/AIDS.[95]

3.52 **Relevance of project design.** One of the most important strengths of the project design was that it addressed multiple diseases under one project, taking into account the country's human resource constraints, and successfully complementing cross-cutting health system functions such as health promotion, surveillance, laboratory services, drug distribution and logistics. The project was also multisectoral in nature and the sectors were chosen on the basis of their comparative advantage in disease control. The design did not include a National AIDS Council, which did not appear to compromise the program's success. In addition, the emphasis on *software* investments complemented the *hardware* focus of the Health Project that was still underway at the time of project appraisal. There were, however, a few areas of concern regarding the project design: (i) the complexity of the project relative to the country capacity evident especially early in the project, and (ii) the complementarity between the government- and community implemented activities could have been improved.

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94. Kerouedan and Appaix (2006) in MOH 2006f. The authors' estimate of $1 million in malaria funding under the HAMSeT Control Project may be an underestimate given that the malaria sub-projects under CMHRP amounted to approximately $620,000 (Table 3-2). The latter figure excludes the sub-projects that jointly addressed HAMSeT diseases.

95. World Bank 2000b, 2005a.

Table 3-7. HAMSeT Control Project: Summary IEG Ratings by Objective

Development Objective	Relevance of Objectives and Design	Efficacy	Efficiency	Outcome
Reduce the mortality and morbidity due to malaria	High	High	Substantial	Highly satisfactory
Reduce the mortality and morbidity due to HIV/AIDS/STIs	Substantial	Substantial	Modest	Moderately satisfactory
Reduce the mortality and morbidity due to tuberculosis	Substantial	Modest	Modest	Moderately unsatisfactory
Overall Project Outcome Rating				Moderately satisfactory[a]

a. The contribution of the individual disease control outcome ratings toward the overall project outcome rating took into account the share of project cost devoted to each disease.

Efficacy

3.53 Malaria. Although malaria incidence was already starting to decline at the start of the HAMSeT Control Project, by all measures the continued malaria control efforts in Eritrea have been highly successful, evidenced by the 85 percent decline in malaria morbidity between 2001 and 2006 even in the face of increases in average rainfall, as in 2004 (Figure 2-3). Efficacy is therefore rated high.

3.54 HIV/AIDS and STIs. Efficacy is rated substantial. While the evidence of behavior change is limited there are several factors, including proxies of HIV incidence, which point to important successes. There was explicit targeting by risk category, and almost universal coverage of HIV prevention in the military was an important success given that nearly every young adult spends some time in the military (because of the national conscription policy). Other notable achievements are improvements in blood safety, and expanded uptake of VCT. Most importantly, the declining trends in HIV prevalence among 15-24 year old antenatal clinic attendees together with the declining rates of syphilis are suggestive of successful HIV prevention. The project was also successful at stigma reduction, extending care and support for PLWHA, and support to orphans and vulnerable children.

3.55 Tuberculosis. While there has been a downward trend in tuberculosis morbidity in recent years, the case detection rate has showed modest improvements, and the staffing problems and lagging performance of the tuberculosis control program leads one to question whether the downward trend could be fully attributed to the project. Efficacy of is rated modest.

Efficiency

3.56 The overall design was efficient in that it combined multiple diseases in the same project.

3.57 Malaria. The efficiency of malaria interventions is substantial. The implementation of malaria control interventions was specifically targeted at areas with high malaria risk, informed by the malaria control program's early warning system and threshold analysis. The targeting strategy was constantly updated as the disease was controlled in some areas and other challenges remain. As recommended by Graves (2004) a remaining challenge targeting less accessible but high incidence sub-*zobas* in Gash Barka.

3.58 HIV/AIDS and STIs. Efficiency is rated modest for HIV/AIDS and STIs. The project was efficient in the way it targeted high risk groups, selectively involved relevant ministries in HIV prevention and care activities, and the fact that the project used existing structures to coordinate the government's HIV response from within the MOH. The implementation of the CMHRP was, however, characterized by coordination weaknesses and some of the community projects did not have a direct links with HAMSeT disease control. The challenges especially affected HIV/AIDS activities (as these accounted for 60 percent of CMHRP sub-projects).

3.59 Tuberculosis. Efficiency is rated modest because it failed to complement facility-based disease control interventions with community-based approaches such as active case-finding and outreach to communities, as was adopted under the HAMSeT-II Project.

3.60 The project's **risk to development outcome** is *moderate*. There is a high level of government ownership and many of the project investments, especially those in the MOH, have been institutionalized. The community-based disease control efforts are relatively sustainable given the reliance on volunteer inputs. However, the health facility-based inputs are at some risk in the face of likely fiscal constraints facing the health system given the challenging economic outlook and the on-going "no war no peace" situation.

3.61 **Bank Performance.** Overall Bank performance is rated *satisfactory*. Quality-at-entry was satisfactory. The design was highly selective in the sectoral involvement and prioritized participation based on sectors' comparative and strategic advantage of specific sectors in HAMSeT disease control, and kept the number of new structures to a minimum. The multiple disease design took into account the human resource constraints. The design of the CMHRP lacked detail and could have done a better job at ensuring complementarity between the community-managed activities and MOH's and other sectors' disease control efforts.

3.62 In supervising the project the Bank provided capable resource people—either directly from the Bank or, as commented by some interviewees, through referral to consultants with relevant experience, an important resource for a country that is isolated as Eritrea. The borrower perceived the Bank to be extremely responsive, while sometimes being constructively critical. The Bank was also complemented for the problem solving and flexibility it demonstrated. Despite the dominance of the Bank as one of the few remaining donors in the sector, the Bank involved other donor partners on field visits and in review meetings.

3.63 Annex B lists the frequency of missions and their composition. On average, missions were conducted six monthly, coupled with technical support and targeted consultancies. Table 3-8 shows a comparison of the average annual resources for supervision relative to other projects managed by the HNP sector board. The average annual supervision budgets were a fifth less than the average for other HNP projects.[96] Given the complexity of the project—reflected in the multiple disease nature of the project and the multitude of implementing partners—and the absence of technical staff in the country office, the resources for supervision were severely

96. The annual supervision costs were 17 percent less than the average for HNP projects and 21 percent less than the average for HNP projects in the Africa region (Table 3.8).

constrained but creatively used to good effect.[97] There were, however, some weaknesses, for example, the supervision of the CMHRP component could have been in greater detail, although remedies for some of the shortcomings in CMHRP were implemented at mid-term review. Because of the low supervision resources and less so because of the performance of the project team, supervision is rated moderately satisfactory.

Table 3-8. Average annual project supervision costs, nominal US$

	Supervision costs ($'000)	Estimated duration of supervision (years)	Average annual supervision cost per active project ($'000)
HNP Projects in Eritrea			
Health Project	$472	7.2[a]	$66
HAMSeT Control Project	$381	5.3[b]	$71
Projects managed by the HNP Sector Board			
All regions: for period FY00-06			$86
Africa region: for period FY00-06			$90

Source: World Bank 2005b; World Bank 2006b; Business Warehouse.

a. 7.2 years reflects the duration from the date of Board approval (December 1997) to the project closing date (December 2004). It can be argued that for the last two years of the Health Project there was overlap with the HAMSeT Control Project and that this implied some cost savings.

b. The duration of supervision is estimated from the date of Board approval (March 2001) to the project closing date (March 2006).

3.64 **Borrower performance** is rated *satisfactory* overall. Government performance is rated satisfactory despite the challenging macroeconomic context and the ongoing "no war, no peace" situation. The leadership of the Minister of Planning at the cabinet level contributed to the success of the multisectoral collaboration, ensuring that the contribution of the various sectors was acknowledged (or criticized when inputs were deficient—something that the Minister of Health is less able to do with fellow ministers). While the MOH performed particularly well in the area of malaria control, and reasonably well in HIV/AIDS control, there were some weaknesses in overseeing and implementing the CMHRP. However, the PMU has to be complemented for fiduciary compliance—during the project's duration there were no fiduciary irregularities or audit objections. In fact, in instances where sub-project funds were used for unintended purposes the amounts were retrieved from the awardees. Implementing agency performance is rated satisfactory.

3.65 **Monitoring and evaluation** is rated *modest***.** The M&E design had important limitations, most notably the absence of an M&E plan at appraisal and lack of targets for the KPIs. M&E implementation and utilization was weakened by the late preparation of the M&E plan and the absence of baseline data. The NMCP benefitted from a detailed information system to detect new outbreaks, and evidence-based planning and program management to target high risk areas and prioritize resource allocation. For the other diseases, monitoring of coverage among risk groups and evaluation of efficacy of interventions was lacking. The Ministry should be complemented for commissioning MOH an independent evaluation of the HAMSeT Project.

97. For example, given the constrained supervision resources occasionally supervision was conducted through a series of video-conferences over a period of a week involving the various counterparts in government and outside of government involved with implementation.

The evaluation was candid and of high quality, and it is unfortunate that M&E during the project lifespan did not benefit from this level of quality in order to inform implementation.

4. Conclusion

4.1 Over the period 1998–2006 the Bank contributed $63.1 million to the financing of the sector, and this assessment has documented evidence of outcomes and impacts associated with this financing. There have been many successes but also some missed opportunities. Several lessons emerge from the experience of implementing the two projects and insights into the Bank's value added that may inform future Bank operations in Eritrea or elsewhere.

Lessons

4.2 **In post-conflict settings engagement is a means to an end, and needs to be accompanied by a sustained policy dialogue to ensure that development gains are realized in the medium term.** The experience of Eritrea confirms one of the lessons from IEG's 2006 evaluation, *Engaging with Fragile States*.[98] In the late 1990s the Bank's dialogue with Eritrea's health was highly contentious, but despite the initial technical disagreements the Bank engaged the sector. While the Health Project was not fully successful, it is unlikely that the development gains in the decade that followed under the HAMSeT projects would have been realized in the absence of the early engagement in the sector. The content of the sectoral dialogue that followed the initial engagement was able to steer the sector from the post-conflict "reconstruction mode" to a "development mode." The reorientation of the sectoral priorities was only possible with sustained and sometimes challenging dialogue underpinned by analytical work.

4.3 **In the area of HIV/AIDS a demand-driven model of community sub-projects is more appropriate for service delivery interventions that are responsive to local community needs (such as home-based care, support to orphans and vulnerable children) than for preventive interventions targeting stigmatized risk groups or stigmatized behavior.** The community component was based on a demand-driven model that is implemented in many AIDS projects. In the HAMSeT Control Project the community component financed a combination of HIV/AIDS prevention, care and support activities. The project experience demonstrated that community demand (on which the demand-driven approach is based) is sub-optimal as a basis for allocation for programs aimed at stigmatized risk groups or behavior.

4.4 **Community activities that are strategically planned and coordinated with the local health authorities can provide an important complement to health facility-based disease control efforts.** Community outreach and community-based activities proved to be key elements of the highly successful malaria control efforts. Malaria agents (specialized community health workers) were trained by the malaria control program and served as health educators, assisted with bed-net distribution, bed-net re-impregnation, liaison with community leaders and coordinating of community source reduction efforts. In addition, they provided a link between communities and the health systems, referring complicated cases to health facilities and

98. Independent Evaluation Group, 2006.

participating in case reporting for M&E. In contrast, some of the deficiencies of the tuberculosis control efforts can be linked to the limited community involvement. The NTCP was based on a health facility-centered model of disease control and strongly relied on passive case detection for tuberculosis control. There was only limited outreach to communities causing case detection to be one of the weakest aspects of the NTCP. It is a missed opportunity that there has not been greater learning and sharing of practices across these two disease control programs.

4.5 **Disease control projects can be complementary to—and need not undermine—cross-cutting health system functions.** In the HAMSeT Control Project various cross-cutting functions and systems were strengthened (e.g., health promotion, disease surveillance, laboratory service, drug distribution) because the sector's leadership sought to achieve programmatic efficiencies across individual disease control programs instead of duplicating these systems for each disease control program. This experience is particularly important given the debates in the international health community about the negative impacts of disease-specific projects on health systems.

4.6 **Multi-sector projects, such as AIDS projects, achieve better results if the sectors involved are strategically chosen according to their comparative advantage in disease prevention and control.** The HAMSeT Control Project prioritized the participation of sectors based on the comparative advantage of each sector in HAMSeT disease control, allowing the country's disease control efforts to balance comprehensiveness with selectivity in order to achieve maximal disease impact.

Value-added

4.7 The most important areas of value-added of the Bank can be divided into the following areas:

a) Scale. Against the counterfactual of no Bank support, all officials felt that the interventions under the Health Project as well as under the HAMSeT Control Project would have been implemented but at a smaller scale and with fewer resources.

b) Community-based approach. A key contribution of the Bank was stressing the importance of community action to complement the increase in service delivery offered by the MOH. According to interviewees, without the Bank the MOH would have focused mainly on the supply-side (i.e., service delivery), but not on the demand-side (raising community awareness or generating demand for services). An important caveat is that community involvement has to be strategically planned and coordinated with the local disease health authorities in order to complement health facility-based disease control efforts.

c) Bank involvement brings credibility and international approval. The Bank was, and continues to be, a respected partner. Both projects were of a large scale and relatively complex. Particularly with the first project the government needed the Bank's support and implied approval because of the weight it carries in terms of getting support and approval of the rest of the multilateral and bilateral donors.

d) Implementation support and technical advice. The achievements under the two projects strongly benefited from the Bank's technical advice and implementation support. These were particularly important in an isolated country such as Eritrea. While not uncritical of the Bank, various MOH staff as well as donor partners acknowledged the Bank's support in these two areas. This value added was particularly noticeable with the initiation of the GFATM activities—which occur largely in the absence of the implementation support and technical advice.

e) Readiness to accept GFATM assistance. The foundation laid by the HAMSeT Control Project and its successor was a key contributor to the country's ability to qualify for and successfully utilize the Global Fund resources. This is not a trivial achievement given the country's isolation and dire economic situation.

4.8 **The Bank's value-added has evolved over time.** In the 1990s the Bank was primarily viewed as a source of financing for infrastructure improvements. This evolved over time, as discussed earlier, to a partnership that spans *hardware* and *software* interventions. A trusted relationship has evolved over time that has formed the basis of a strong sectoral dialogue, although this does not imply that the MOH or the GOE agrees with all the Bank's policy recommendations. With the increase in Global Fund funding, the importance of the Bank's financing for disease control has reduced, and the Bank is increasingly focusing on under-funded priority areas such as human resource strengthening and reproductive health.

Remaining Challenges

4.9 The Eritrean health sector has experienced significant changes since independence, starting with reconstruction of devastated health facilities, expansion of disease control efforts focusing especially on the HAMSeT diseases, and now a strong focus on reproductive health and human resources. There are several challenges remaining, and two are highlighted here.

4.10 **Improving sectoral efficiency.** Hospitals account for half of the MOH's total expenditure yet hospitals operate at very low levels of efficiency, evidenced by the low bed occupancy rates.[99] The challenging economic environment will continue to place pressure on the MOH's resources, and heighten the need to ensure optimal returns to existing health expenditure, especially hospital spending. A candid assessment is needed by the MOH to explore ways to improve the efficiency of hospital service delivery—for example, through outsourcing of excess hospital capacity in urban centers where appropriate, reduction of untapped capital investments through selling of new and unused hospital equipment especially in the new hospitals, management training for hospital superintendants, and establishing hospital performance targets and monitoring hospital management performance.

4.11 **Getting the most out of disease-specific development assistance**. The HAMSeT experience has demonstrated that disease-specific resources can contribute to improving various systems in the sector (for example, disease surveillance, laboratory services, and drug

99. In 2005 hospitals accounted for 47 percent of MOH expenditure (2005 World Bank 2008b). The median bed occupancy rate for the country was 42 percent based on 2006 HMIS data (MOH 2007a).

distribution) without losing the focus and outcome orientation of disease control programs. The availability of large amounts of development assistance through the Global Fund provides another opportunity to improve health outcomes among the poor while strengthening the systems necessary for the sustainability of the disease control efforts. In doing so the Eritrean health sector will move beyond the vertical versus horizontal debates, and give practical meaning to the call for synergy between disease control and systems strengthening in the Bank's new 2007 HNP Strategy.

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Annex A. Health Project Data

Table A-1. Health Project – Basic Data Sheet

Key Project Data

	Appraisal estimate	Actual or current estimate	Actual as percent of appraisal estimate
Total project cost ($ million)	21.10	22.63	107
Credit amount ($ million)	18.3	17.5	96
Cancellation (SDR)		3,405	

Source: World Bank data, World Bank 1997, 2005b.

Project Dates

	Original	Actual
Board approval		12/16/1997
Signing		12/22/1997
Effectiveness	03/23/1998	05/28/1998
Mid-term review	11/30/2000	03/05/2001
Closing date	06/30/2003	12/31/2004

Source: World Bank data, World Bank 1997, 2005b.

Staff Inputs

	Actual/Latest Estimate	
	Number of staff weeks	$('000)
Preparation to appraisal	151.1	433.9
Appraisal/ Negotiations	43.4	131.8
Supervision	124.2	472.3
Completion	18.3	68.7
Total	337.0	1,106.7

Source: World Bank data, World Bank 1997, 2005b.

Table A-2. Health Project – Mission Data

	Date (month/year)	No. of per-sons	Specializations represented	Performance Rating	
				Implement-ation Progress	Development Objective
Identification/ Preparation	09/20/1995	3	Team leader; Household survey specialist; Health and hospital finance expert		
	11/08/1995	4	Team leader; Household survey expert; Health and hospital finance expert; Epidemiologist and health planner		
Appraisal/ Negotiation	02/07/1996	8	Team leader; Project operations specialist; PHC specialist; Household survey expert; Health and hospital finance expert; Epidemiologist and health planner; Health management specialist; STI/HIV and PHC specialist		
	06/14/1997	2	Team leader; Operations officer		
	08/12/1997	2	Team leader; Operations officer		
	10/30/1997	2	Team leader; Legal officer; Procurement specialist; Financial analyst		
Supervision	01/30/1998	2	Financial management specialist; Procurement specialist		
	06/07/1998	1	Financial management specialist		
	10/03/1998	4	Team leader; Operations officer; Sr. Financial analyst; Procurement specialist		
	05/27/1999	3	Team leader; Operations analyst; Public health specialist	S	S
	10/28/1999	1	Operations officer	S	S
	03/01/2000	1	Team leader	S	S
	09/30/2000	2	Team leader; Economist	S	S
	03/10/2001	3	Team leader; Economist; Financial management specialist; Procurement specialist	S	S
	11/08/2001	4	Team leader; Economist; Financial management specialist; Architect	S	S
	04/27/2002	1	Team leader	S	S
	06/07/2002	4	Team leader; Human resource economist; Environmental specialist; Architect	S	S
	11/22/2002	3	Lead health specialist; Sr. human development economist; Architect/consultant	S	S
	02/27/2003	7	Team leader; Health planner/consultant; Health financing specialist/consultant; Sr. Economist/M&E specialist; Africa coordinator MTL; RRI Coordinator/consultant; M&E specialist/consultant	S	S
	06/26/2003	5	Team leader; Lead health specialist; Sr. human development economist; Architect/consultant; Equipment specialist/consultant	S	S
	02/06/2004	7	Team leader; Health specialist; Sr. human development economist; Financial management specialist; Architect/consultant ; Communications specialist/consultant; Tuberculosis specialist/consultant	S	S
	06/27/2004	2	Health specialist; Architect/consultant	U	S
Completion	12/07/2004	7	Team leader; Health specialists (2); Sr. financial management specialist; Architect/consultant; human resource specialist/consultant; Task team assistant	S	S

Source: World Bank 2005b.

Health Project Outputs

Table A-3. Health Project – Outputs

Component/ sub-component	Proposed activities	Outputs
1a. Expanding access to secondary referral health care in two regions	Constructing, equipping and staffing two referral hospitals in Barentu and in Mendefera	The 144-bed Barentu Hospital and the 168-bed Mendefera Hospital opened in 2006. According to the HMIS data the number of beds in Barentu remained constant at 60 beds—the capacity of the old hospital being replaced—over the transition period of the hospital opening (2005–2007).[100] The result is that in 2007, ten years after the Health Project was approved, the Barentu Hospital made a modest contribution to the functional bed capacity in the *zoba*.[101]
1b. Strengthening health services nationally	Supporting 12 health centers and 18 health stations, by providing equipment, furniture, essential drugs and vaccines; training providers; and improving their management by better training, communication and supervision.	The project procured $1.84 million in equipment and furniture and $1.2 million in drugs and medical supplies for 12 health centers and 18 health stations, representing 24.5 percent of health centers and 12.1 percent of health stations.[102] The equipment and furniture were quite unsophisticated, illustrative of how basic the needs in the health facilities were. [103]
	Developing the national blood bank services.	At the start of the project there was no blood transfusion service. In 2003 the NBTS distributed 4,200 units of blood after being screened for four blood-borne diseases: HIV, hepatitis B and C, and syphilis. At project closing the NBTS estimated that it met half of the country's blood supply needs.[104] At the *zoba* level, blood is sometimes collected and transfused (often unscreened) from relatives in referral hospitals mainly in emergency situations.
	Support malaria control program.	Malaria strategic plan. Together with other donor partners, the project supported the development of the National Malaria Strategic Plan (2000–2004) which provided the strategic framework for the following key interventions: bed-net and insecticide treated net (ITN) distribution; bed-net impregnation; indoor residual spraying (IRS); vector control by eliminating and treating breeding sites; and treatment of malaria in health facilities and by malaria agents (specialized community health workers). The NMCP's achievements for the period 1998–2006 are summarized in Figure 2-3. ITN distribution and bed-net impregnation. Initial programmatic efforts focused on bed-net distribution, starting from 62,000

100. MOH 2006a (p31); MOH 2007a (p34).

101. Nonetheless, Gash Barka is the *zoba* that has shown the largest increase in the number of beds between 2000 and 2006. The largest source of the increase was Tessenei Hospital (adding 34 beds; from 84 beds in 2000 to 118 in 2005/06 compared to the addition of 19 beds from Barentu Hospital over the same period). It is worth noting that Gash Barka currently has the highest bed to population ratio: 3.59 per 1,000 versus a national average of 0.65 per 1,000. (MOH 2007a). This is based on the population estimates used by the HMIS.

102. In 1998, at the start of the project, there were 49 health centers and 149 health stations.

103. The equipment and furniture included: delivery beds, hospital beds, examination couch, baby cribs, medication cabinets, drug dispensing tables, office tables, and chairs.

104. World Bank 2005b (p. 9). In 2007 the NBTS estimates that it met about 85 percent of the country's approximately 8,000 units of required blood.

Component/ sub-component	Proposed activities	Outputs
		annually in 1999 and reaching a peak of 276,000 per year in 2002.[105] Re-impregnation efforts initially lagged but sharply increased after 1999. The bed-net distribution was a massive undertaking—on average, 160,000 bed-nets were distributed annually between 2000 and 2003. There was considerable learning along the way: initially, bed-nets were not free, but by 2002 they were distributed at zero cost in malarious areas.[106] There appeared to be no explicit effort to target poor households within malarious areas, although the availability of free bed-nets may have implicitly benefited the poor. Indoor Residual spraying (IRS). IRS focused on Gash Barka, Debub and the Northern Red Sea (NRS) *zoba*. Following a significant decline in malaria incidence in NRS in 2000, IRS was limited to the selected sub-*zobas* in Gash Barka and Debub, based on malaria risk factors, such as previous malaria cases, rainfall, and type of housing structure. Vector control. On average, 24,900 breeding sites were filled annually between 1998 and 2003.[107] These efforts were complemented by larvaciding water-sources that could not be eliminated.
2a. Program management and sustainability	Training, study tours, and pilot interventions in order to enhance decentralization of decision-making, and to test local-level mechanisms to raise, retain and utilize additional revenues for health services.	A large share of this budget was reallocated to fund the malaria control ($2.8 million); and post-conflict emergency programs ($1.2 million). Study tours and other training were envisaged but the MOH restricted international travel and the budget was reallocated for nurse training.
2b. Project management and implementation	Capacity building for project management and implementation in the Ministry of Health and in the zonal health offices.	Training for PMU staff; office furniture and equipment; consultant services; operating expenses.

105. *Kebabi* administration offices maintain records of all the households under their jurisdiction. Based on *kebabi* household registration data nets are issued and re-impregnated by malaria agents with the cooperation of health facility staff.

106. The NMCP, with the help of *kebabi* leaders, distinguishes between malarious and non-malarious villages based on recent malaria cases or overall malaria risk. Classification as a malarious village is accompanied by free bed-nets. Despite the incentive for over-classification of malarious villages bed-net distribution is tightly controlled by the *kebabi* administration.

107. Vector control is hard to quantify because breeding sites may vary from a small pool to a river, and the outputs should be interpreted with this caveat in mind.

Annex B. HAMSeT Control Project Data

Table B-1. HAMSeT Control Project – Basic Data Sheet

Key Project Data

	Appraisal estimate	Actual or current estimate	Actual as percent of appraisal estimate
Total project cost ($ million)	50.0	51.39	103
Credit amount ($ million)	40.0	45.63	114
Cancellation ($ million)		0	

Source: World Bank data, World Bank 2000a, 2006b.

Project Dates

	Original	Actual
Board approval		12/08/2000
Signing		
Effectiveness	03/01/2001	03/01/2001
Mid-term review	05/03/2004	11/22/2004
Closing date	03/15/2006	03/31/2006

Source: World Bank data, World Bank 2000a, 2006b.

Staff Inputs

	Actual/Latest Estimate	
	Number of staff weeks	$('000)
Preparation to appraisal	15.57	65.54
Appraisal/ Negotiations	36.33	152.91
Supervision	112.67	381.09
Completion	34.14	118.40
Total	198.71	717.94

Source: World Bank data, World Bank 2000a, 2006b.

Table B-2. HAMSeT Control Project – Mission Data

	Date (month/year)	No. of per-sons	Specializations represented	Performance Rating	
				Implementat-ion Progress	Development Objective
Identification/ Preparation	03/16/2000	7	Team leader; Human development economist; School health specialist; Malaria specialist; Environmental specialist; Communications specialist; Malaria and tuberculosis assistant		
	05/20/2000	5	Team leader; Implementation specialist; Project costing and design specialist; Communications specialist; Program assistant		
	09/30/2000	9	Team leader; Sr. school health specialist; AIDS specialist; Economist; Environment and community participation specialist; Implementation specialist; Project costing and design specialist/consultant; Sr. development communications specialist; Communicable disease specialist/WHO		
Appraisal/ Negotiation	05/31/2001	8	Team leader (1); Malaria specialist (1); Lead. school health specialist (1); Financial management specialist (1); Human development economist (1); Communications specialist (1); M&E specialist/consultant (1); AIDS specialist/UNAIDS (1)	S	S
Supervision	11/08/2001	8	Team leader; Human development economist; Financial specialist; Malaria specialist; Lead. school health specialist; AIDS specialist; Communications specialist/consultant; M&E specialist/consultant	S	S
	06/07/2002	10	Lead health specialist; Human development economist; Malaria specialist; Community participation specialist; Tuberculosis specialist; Communications specialist/consultant; AIDS specialist/UNAIDS; M&E specialist/consultant ; Architect; Environment specialist	S	S
	11/22/2002	10	Team leader; Human development economist; Health specialist; Communications specialist/consultant; Lead operations specialist; Sr. health specialist; Consultant (2); Institution assessment and M&E specialist; Lead health specialist	S	S
	02/27/2003	7	Team leader; Health planner/consultant; Health financing specialist/consultant; Sr. Economist/M&E specialist; MTL Africa coordinator (1); RRI Coordinator/consultant; M&E specialist/consultant	S	S
	06/26/2003	7	Lead health specialist (2); Sr. human development economist; Health specialist; Sr. Health specialist; Communications specialist/consultant; Sr. economist	S	S
	02/06/2004	7	Team leader; Health specialist; Sr. human development economist; Communications specialist/consultant; Lead education specialist; Sr. financial management specialist; Tuberculosis specialist/consultant	S	S
	06/26/2004	2	Health specialist; RRI consultant	S	S
Completion	08/19/2005	7	Team leader; Health specialists (2); Operations officer; Junior professional associate; Procurement specialist; M&E specialist consultant	S	S
	02/17/2006	8	Team leader; Health specialists (2); Lead health specialist; Sr. financial management specialist; Sr. financial management specialist; Sr. operations officer; Procurement analyst; Tuberculosis specialist/consultant	S	S

Source: World Bank 2006b.

Table B-3. HAMSeT Control Project – Multisectoral Outputs[108]

Ministry of Education
In 2003, a RRI was launched on the HAMSeT diseases and life skills, reaching 50,000 students age 12–20, 15,000 teachers, and 17,000 parents, in 90 days. There were subsequent 4 RRIs from 2003–2005: 135,000 students aged 12–20 were reached directly, and indirectly reached 15,000 teachers and staff of school, as well as 17,000 parents.
Equipment and vehicle procurement
Three computers and office furniture procured; electronic equipment supplied to 35 secondary schools across all *zobas*; entertainment equipment procured for Eritrea Institute of Technology, and Warsay Yekalo Secondary School in Sawa; 50 tape recorders and 500 audiocassettes procured and distributed to listening centers in remote areas; musical instruments were procured for Asser Cultural Concert Group, and sport equipment distributed to all senior and junior secondary schools. Two 4WD vehicles purchased. Eight technical schools received financial support of Nakfa 8,090.00 (prizes for competitions in these institutions). National and zonal HAMSeT plans were prepared. A policy guideline for coordination between the Ministry of Education and the Ministry of Health was developed, as well as a school health policy. A National School Health Planning Workshop to 50 participants from different sectors.
Material Preparation
The MOE has developed school health materials, life skill training manuals prepared for junior and senior school students and distributed to all schools for use, reading books of short stories and poems prepared in Tigrigna and Tigre, a booklet of HAMSeT diseases related cartoons and a supplementary readers prepared for adults in eight local languages, and two new books in Tigre and in Tigrigna of poems and short stories are ready for publication. Furthermore, training of writers on writing life skills materials, workshop to rural reading centre librarians on library management and utilization of health related materials, and training of Adult education radio producers on the production of health related radio programs were also given.
Curriculum development
School-based health curriculum developed (includes life-skills education). Life skill education introduced in schools.
Awareness Campaign
Awareness campaigns include: creation of health clubs in schools, conducting school-based delivery of health and nutrition services; drama and music concerts; sport promoted through construction of playgrounds.
Radio and TV Programs to complement Adult Education
Nine video films produced in five languages on HIV/AIDS and TB; Several songs distributed in different languages related to HAMSeT diseases; regular radio programs on HAMSeT diseases broadcast targeting mainly the youth and adults; HIV/AIDS messages recorded and distributed to literacy listening centers to reach people in remote areas where TV broadcasting not received; shortwave transmitter procured; transmitter-house for a shortwave transmitter built; generator house built; antenna basement constructed to expand the coverage of Adult Education Radio Program.
Ministry of Defense[109]
Vehicle and equipment procurement
Two 4-wheel drive cars, two audiovisual vans, four motorcycles for field transport procured; office equipment procured, 4 ELISA readers with accessories and reagents procured as well as CD4 counters and reagents, HIV test kits; Toyota ambulances, motorcycles procured and distributed to *zoba* hospitals.

108. MOH 2005a,b,c , MOH 2006e, MOH 2007b.

109. In 2000-2001 an MOH study reported HIV prevalence of 4.6 percent in the military. The entire military is tested every 2 years. (Conscripts are informed of their test results and are not dismissed if HIV positive. PLWHA are given non-combat, sedentary duties and when sick or deteriorating, care is provided in the MOD hospitals.) The MOD surveillance data are not available for analysis, although it is reported that HIV prevalence is much lower and "less than the ANC level." This could not be verified. It is also reported that STI treatment in military facilities has also declined over time.

Production of Promotional Materials
Promotional and IEC material developed, produced, distributed by MOD Department of Health in 2002 and 2004; materials mainly on HAMSeT diseases, specifically to HIV/AIDS, and STIs. Materials produced include: 500 copies of posters on HIV/AIDS and STIs; promotion of VCT; early treatment of STI; and health-seeking behavior. Posters produced in Tigrigna and Arabic languages. Pocket calendars (200,000) distributed containing prevention messages for STI and HIV/AIDS, safe sex practice, condom promotion, proper use of condoms etc. Condom pouches (90,000) distributed as part of the standard military uniform. Wooden condom demonstration model developed and distributed for training and demonstration purposes to all battalion health clinics, division health centers, peer educators, community change agents; two films produced/translated covering all STI infections and HIV/AIDS.
Training programs
Training targeted medical staff: 1,486 doctors, nurses, battalion health officers trained in management of STIs, 1,800 hospital staff and paramedics trained on universal precautions, doctors and nurses trained on HIV policy guidelines, treatment, and management of OIs; 4 laboratory technicians trained on ELISA; all doctors and nurses trained on management of malaria. Battalion health officers (1,400) and paramedics trained on management of malaria, vector control, prophylaxis, and bed-net impregnation. Training provided on basic counseling. Two week training for all hospital nurses and 27 higher medical officers on DOTS management, TB data collection, reporting system, and introduction of new data collection for treatment. Five laboratory technicians trained on sputum microscopy, and 17 pharmacists and pharmacy technicians on logistic management. TOT training of peer educators (46) and counselors (11). Advocacy seminars "Seeing is believing campaign" by PLWHA on personal testimonies to the MOD members, including higher officers and more than 200,000 soldiers.
Health Care Service
In relation to health care service, five VCT centers were established and provided testing and counseling services in central military hospitals and operation hospitals. In addition to this the VCT centers equipped, VCT format reviewed, counselors trained, lab facilities upgraded, storehouse renovated. Emergency transportation 4WD ambulances distributed to four hospitals; computerized logistic management system and logistic management information systems introduced.
Distribution of Condoms and Bed Nets
Condoms distributed: as a ration; in all cafeterias; in health facilities; and at social gatherings. Cumulatively, 12,000,000 condoms distributed. Cumulatively, 258,385 bed-nets distributed; Perimethrine (6,875 liters) for impregnation; chloroquine tablets prophylaxis distributed to soldiers during malaria season.
Logistics Management
A logistic management specialist was hired, workshop to review and finalize changes in logistic procedures was conducted. 17 pharmacist and pharmacy technicians trained in logistic management information system. Computers were procured and computerized logistic management techniques introduced.
Testing and Counseling Service to Demobilized Soldiers
Brochures on HAMSeT diseases developed and distributed to all demobilized soldiers. Advocacy and training on HAMSeT diseases given to all demobilized soldiers; as well as VCT services, safe sex health seeking behavior, condom promotion, personal protection for malaria, and importance of bed nets.
Ministry of Labor and Human Welfare
Development of Training Manual
Community empowerment training manual designed for community promoters on community mobilization. Topics included: community mobilization, community research, counseling, M&E, empowering community members through income generation schemes, psychosocial problems. English version of training manual translated into five languages: Tigrigna, Tigre, Arabic, Afar and Kunama.
Capacity Building of Community Promoters
Capacity building of community promoters aimed to build the capacity of human resources at national, regional, sub-regional and community level. TOT training for 4 MOLHW on care, support and counseling in Nairobi. 500 community promoters from the six regions attended a TOT, 120 regional and sub regional staff attended information and orientation workshop; 1,209 community change agents provided training on psychosocial intervention and counseling on HAMSeT diseases.

Establishment of Counseling Services
Counseling services at *zoba* and sub-*zoba* levels strengthened. Two types of counseling services established: counseling by skilled professionals for people living with HIV/AIDS and their families to deal with illnesses, stigma, psychosocial trauma and many others; and community-based counseling. Professional counseling services established in the six zobas with 4 professional counselors. Counselors reached 2,800 PLWHA and OVCs. Community-based counseling to create awareness to help HIV/AIDS infected and affected families and to meet the psychosocial needs of orphans. Community-based services provided using various community ceremonial occasions. More than 6,000 people PLWHA, OVCs, child headed households reached.
HIV/AIDS Awareness Creation
A team of experts from MOLHW conducted awareness raising activities to 10,000 people including SWs in the six *zobas*. Issues addressed during the awareness campaign were: prevention; impact mitigating; reducing high-risk sexual behavior among SWs; home based care to PLWHA; meeting the needs of OVC, child headed households and children helping grandparents.
Sensitization of the Working Force
Inspection Division within the Department of Labor trained industry workers and establishments that are governed by the Labor law. TOT implemented (starting 2003) on: prevention of occupational accidents; HAMSeT diseases; provision of first aid and medication targeting 1,056 employers and employee in 70 industries and service-giving establishments. Training ultimately reached about 30,000 employees and employers through seminars and workshops.
Sensitization of Commercial Sex Workers
TOT for 200 regional social workers on sensitization and rehabilitation of commercial sex workers. Ministry designed a plan of action to prevent the commercial sex exploitation of children; plan being implemented starting 2005.
Orphans Affected by HIV/AIDS
Study by the MOLHW reveals that there are more than 2,800 HIV/AIDS orphans in the six regions of the country (in child headed households and living with their extended families mainly with grand parents). These orphans are being provided a monthly support of 200 Nakfa per child, per month. In order to overcome their economic problem on a sustainable base and to avoid dependency syndrome, situational analysis has been conducted and viable income generation activities have been identified. Furthermore, in an attempt to fight the stigmatization of HIV/AIDS orphans, a broad sensitization program is being conducted to the public through mass media, seminars and workshops.
Ministry of Transport and Communication
Activities included: Workshop for 12 peer coordinators and facilitators training for one week. Sensitization workshop for 240 Taxi drivers. Sensitization for 180 Transport workers. Assessment of effectiveness of the meteorological posts. 8 Bicycle for transportation facility. Refresher course of HAMSeT meteorological observation (16 observers for 10 days).
Ministry of Tourism
Activities included: Publication of brochures or booklets. Production of posters and Training Workshops.
Ministry of Information
Designing and producing the radio in various Eritrean languages. The departments of Television and Print Media had also assigned their own journalists to produce the required programs and articles (see under Health Promotion above). Transcribers (15); Cassette tape recorders (10); Real tapes (200); Toners (30); Digital color video cameras (3); Beta recorder unit (3); Beta editing players (2); Beta editing recorders (1); Editing suit with accessories (1); Vehicle pickup Toyota (1).
Cultural Affairs Bureau
Publication of Books and Short Stories; Publications of pamphlets: Hiyab no. 1: Tigrigna (60,000); Tirgre (30,000); Arabic (10,000); Hiyab no. 2: Tigrigna (60,000); Tirgre (25,000); Arabic (15,000); Hiyab no. 3: Tigrigna/Arabic (50,000); Cartoon booklet, Tigrigna. Production of Poetry, Songs Drama Sketches and Videos Spots; Production of Feature Film; Paintings for Calendars, Posters and Clipboards. Drama and Musical performance tours (437 performances).
National Union of Eritrean Youth and Students
Head Quarter Activities include: Proposal development for survey of communication outcomes on youth focusing on use of mass-media and IPC skills during the year 2003 was prepared. More than 90 radio programs on HAMSeT diseases broadcasted. Nine cultural shows reflecting HAMSeT diseases through poems and songs and role plays have been

broadcasted through the Eritrean Television.
Fully equipped audio-visual mobile unit procured; mobile units used for an average of 180 outreach campaigning visits per year since January 2002. The audio-visual mobile outreach campaigns reached more than 1.2 million people. Equipment procured for youth-friendly centers: 5 computers, 5 printers, 6 satellite receivers, 6 Televisions, and 6 video players.
TOT course on care and support to more than 150 youth; calendar for 2005 promoting female condom produced; Hotline Counselling service support implemented. Quarterly sector plan meeting institutionalized involving NUEYS HAMSeT Central Coordinator, the six NUEYS regional HAMSeT coordinators, and the NUEYS regional heads.
Youth centres constructed in Gindae, Dekemahre, Adi Keih and Debarwa and youth centres/clubs of Asmara, Barentu and Mendefera renovated. Volleyball and Basket ball courts in Tessenei and Haikota youth centres constructed. Youth centres/clubs supplied with audio-visual materials: tape recorders and televisions.
Bed-nets distributed in Gash Barka. Training courses on HIV/AIDS, peer education, Malaria, TB and STIs for 300 young promoters in model communities. 30 high school students' general knowledge competitions on HAMSeT diseases conducted in all *zobas*.
12 Counselling and HAMSeT clubs established (where trained peer educators give advice to peers on HIV/AIDS and other HAMSeT diseases and provide with IEC materials). Existing IEC materials translated to more languages and distributed to local youth and community members. Film entitled "LEWTI", which means "change" produced by NUEYS Northern Red Sea Zoba.
National Union of Eritrean Women
(i) Campaign on BCC Strategy to Girls: focused on high school and technical vocational training boarding school girls to increase their awareness and knowledge in women health, gender and development issues, and women rights. (ii) Establishing Communication Centres for Women: The traditional way of life in Eritrea confines women at home. In general, women have less chance to education and information and these centres were meant to redress this imbalance. (iii) Increase access to information for women.
Training
Training workshops given to different stakeholders (administrators, magistrates, religious leaders, opinion leaders, Baito members, female workers, and venerable women). Training was also given to Health Promoters at Head Quarter and Zoba Level: TOT, Peer Educators and Group Facilitators; Voluntary Home Based Care providers (VHBCP), and advanced training in KAP to already experienced people.
Mobilization of Communities
Conducting of health education to the communities using the BCC Strategy. Regular IEC sessions to groups of 20–25 participants were given. Dramas and traditional songs and dancing were performed to educate the communities on HAMSeT diseases. Informal social gatherings were used to spread the information on these communicable diseases.
Capacity Development
Awareness and knowledge workshops for NUEW's Central Committee and staff were organized and conducted. Traditional Birth Attendants (TBAs) were given training on HAMSeT diseases and the skills of how to control and prevent HIV/AIDS spread. Refresher courses for health promoters, TOT, peers and group facilitators, and voluntary home based care givers (VHBCP). Annual meetings to report, evaluate and share experience among project implementers were organized. High school girls were given "Life Skill Communication" training in S.R.Sea, Anseba and Gash Barka to empower them.
National Confederation of Eritrean Workers
NCEW works through its branch offices in all the six *zobas*, mainly in the campaign for awareness of HIV/AIDS using MOH IEC materials, video shows, drama plays, and peer education. Other activities: preparing workplace HIV/AIDS policy, campaigning against the spread of HIV/AIDS in workplaces, in particular in member organizations, conducting RRI programs among transport workers, forming and conducting peer education programs in selected model communities, networking with international agencies to get technical know-how and funding for the HIV/AIDS campaigns and national partners in the integrated implementation of projects, and collaborating in the assessment of economic impact of HIV/AIDS in the workplaces.
Orthodox Church of Eritrea
The Orthodox Church participated in a RRI activity by reaching 100 PLWHA and giving them care and support in 100 days. Forty volunteer deacons and priests were given the necessary training to undertake the RRI and participated in the work. The Church provided support to train 50 more home-based care givers. The proposal was accepted and 10 day training was given to the second round volunteers. Some of these are working in the care and support of PLWHA.

Eritrean Catholic Church
The Catholic Church gives health education in accordance with the Ministry of Health directives in its 29 health facilities. Between January 2002 and September 2005, a total of 1820 health education sessions related to HIV/AIDS were conducted at these health facilities. A total of 86,411 people were reached. Within the program, a series of workshops on HIV/AIDS for the religious people were conducted. The IHV/AIDS awareness campaigns started with the three Bishops and 25 Superiors of different religious congregations. Then, it continued with the various groups of the Catholic Church community such as the schools and parishes. These awareness workshops conducted on various times included 57 theology and philosophy students, 89 seminarians, 72 parish priests, 60 members from dioceses staff and lay parish council members. Don Bosco Institution at Dekamhare conducted four workshops on HIV/AIDS awareness to 210 students and teachers. 600 of the Catholic Youth members were also reached.
Evangelical Church of Eritrea
Training of sex workers: ECE has rehabilitated 117 sex workers from 2002–2004 with the support of HAMSeT project. Those SWs that were willing to change their work and life by acquiring new skills were selected for the rehabilitation projects. The benefits of rehabilitation are to the SWs, their family members, and the community at large. For example, in 2004 thirty SWs were enrolled, 28 completed the training. The total cost was Nakfa 322,214.00. After the completion of the training, 14 trainees received each weaving machine and ERN 600 for purchasing materials. The rest 14 sex workers rehabilitated by providing sewing machine and additional materials such as tread, scissor and other materials. RRI-1and 2: 170 beneficiaries infected and affected families with HIV/AIDS and home based caregivers were trained. The target was 200 families. The training started on 04/08/2003 one week training per group. 139 individuals have been trained in 4 weeks on the above topics. These were from ECE, *Bidho*, Orthodox Church and Mufti office beneficiaries and caregivers.
Office of the Mufti of Eritrea
In 2003 the budget approved for the Mufti Office was Nakfa 200,000 of which only Nakfa 40,000 was used for training. 40 promoters were trained, 25 from the youth (5 females) and 15 leaders from the Mosques. Every month about 2000 people in Mosques of Asmara and its surrounding were being reached. Specifically there were campaigns organized for 500 young men and another 500 women and young ladies on a weekly basis. The HIV/AIDS awareness campaign as integrated with the religious training.
Bidho
PLWHA Life Testimonies. The use of PLWHA in public awareness campaigns aimed to combat the existing denial and silence in HIV/AIDS; raise the HIV risk perception; and to combat the existing stigma and discrimination against PLWHA. The first campaign involved 10 PLWHA who gave their testimonials in various ministries, schools, national unions, FBOs, hotels and bars. These activities give their human face to HIV/AIDS. From October 2003 -October 2005, a total of 106,000 people were reached, 62,000 in *zoba* Maekel.
Counseling Program. The counseling services started in September 2003, starting with 24 trained counselors, of which 16 were working in VCT centers around the country, offering face to face, telephone, or through the email. Different psychosocial problems associated to HIV/AIDS and other personal or business related issues are discussed between the client and the counselor. This program was of particular importance to have special advantage to new members.
"Positive Living" Training in PLWHA community. This activity started with a four-day training training-of-trainers activity involving 270 active members of the association (Counselors, home based care providers, PLWHA going public, staff members, and other members). All subsequent "Positive Living" training was facilitated by trained *Bidho* members. Some of the themes covered were: health motivation, determination to live, value ones own life, purpose to live for PLWHA, knowledge about HIV/AIDS, healthy body, healthy mind and soul.
Community home-based care (HBC). This was supported through CMHRP subprojects. The aim was to provide appropriate care to PLWHA and support their families to maintain their independence and achieve the best possible quality of life. It provided opportunities for PLWA to address the existing problems of stigma, discrimination and silence on HIV/AIDS by creating an open discussion and awareness programs in the family, keeping the necessary privacy and confidentiality. The beneficiaries formed cooperative schemes grouping 10 PLWHA working together. Additional HBC training in two phases was provided 46 of *Bidho*'s HBC providers in techniques and skills of home-level palliative care, counseling and referral to health facilities as necessary. Each care provider was responsible for 3 households and their families, and providers received incentives (950 Nakfa/month). No information is available on the coverage of HBC services or the efficacy of HBC and orphan care delivered by communities and the extent to which the HBC is linked to the resources/referral of the health system.
Income Generating Projects for PLWHA. In an effort to promote self-reliance several IGAs were undertaken:

poultry farming (the most successful), bee-keeping, cattle breeding/fattening, and vocational training (now driving license training). An additional and equally important objective was to demonstrate to the community that PLWHA can live positively, avoid dependency and continue to be productive members of society thereby reducing stigma, and discrimination. Transparent structures were set up and each cooperative project was managed by three individuals known as the management unit elected from and by members of the project, a project coordinator, treasurer, and technical manager. Funding for activities that were not implemented as planned was returned to HAMSeT.

Health Promotion (materials developed by MOH for implementation by various sectors)

Media	Activities	Time duration (hrs)	Languages	Disease
Radio	Educational programs, dramas and spots			
	71	11	6	HAMSeT Diseases
	137	27	9	HAMSeT Diseases
	17	2	n/a	HAMSeT Diseases
	18	4	n/a	HAMSeT Diseases
	82	18	9	HAMSeT Diseases
	52	7	9	HAMSeT Diseases
	126	daily spots of 6 mins	Tigrigna	HAMSeT Diseases
		daily spots of 4 mins	8	HAMSeT Diseases
		4	9	HAMSeT Diseases
	126	9	9	not available (n/a)
	171	9	9	n/a
	65	6	9	n/a
	11	6	all languages	HIV/AIDS
	3	6	n/a	malaria
	2	6	n/a	tuberculosis
	15	n/a	n/a	HIV/AIDS
	6	n/a	n/a	malaria
	4	n/a	n/a	tuberculosis
TV	Educational programs, dramas and spots			
	10	n/a	n/a	HAMSeT Diseases
	5	5	Tigringna, Tigre	HAMSeT Diseases
	2	2	Tigringna, Tigre	HAMSeT Diseases
	10	8	Tigringna, Tigre, Arabic	HAMSeT Diseases
	6	5	Tigringna, Tigre, Arabic	HAMSeT Diseases
	9	6	n/a	n/a
	2		Tigringna, Tigre	n/a
	9	4	Tigringna, Tigre, Arabic	n/a
	7	5	Tigringna, Tigre	n/a
	6	n/a	n/a	n/a (Nuzazie)
	2	n/a	n/a	HIV/AIDS
News-papers	Articles and cartoons			
	12	n/a	2	n/a
	7	n/a	n/a	HAMSeT Diseases
	6	every Sunday	n/a	HIV/AIDS
	9	every Sunday	n/a	HIV/AIDS
	Educational programs and cartoons			
	9	n/a	Tigringna, Arabic	HAMSeT Diseases
	8	n/a	Tigringna, Arabic	HAMSeT Diseases
	7	n/a	Tigringna, Arabic	HAMSeT Diseases
	6	n/a	Tigringna, Arabic	HAMSeT Diseases
	8	n/a	Tigringna, Arabic	HAMSeT Diseases
	7	n/a	Tigringna, Arabic	HAMSeT Diseases
	3	n/a	Tigringna, Arabic	n/a
	2	n/a	Tigringna, Arabic	n/a
	4	n/a	Tigringna, Arabic	n/a

Annex C. Persons Interviewed

Washington, D.C.

World Bank

- Albertus Voetberg, Lead Health Specialist, AFTHV, Lead Health Specialist on HAMSeT Project supervision team
- Christine Pena, Senior Human Development Economist, LCSHH, economist on HAMSeT Project supervision team
- Christopher Walker, Lead Health Specialist, AFTH1, former TTL for the HAMSeT Project
- Donald Bundy, Lead Specialist on School Health, HDNED, advisor to the HAMSeT education sub-component
- David Dunlop, Senior Economist and TTL during project preparation of the Health Project
- Eva Jarawan, Sector Manager, AFTH2, former TTL for the Health and HAMSeT Projects
- Joseph Valadez, Senior M&E Specialist, AFTHD, involved with HAMSeT-I and II Projects
- Son Nam Nguyen, Senior Health Specialist, AFTH1, former TTL for HAMSeT Project
- Sundararajan Srinivasa Gopalan, Senior HNP Specialist, SASHD**,** former TTL for the Health Project

USAID

- Lawrence Barat, Senior Malaria Advisor, President's Malaria Initiative, former malaria advisor to HAMSeT Project

Eritrea

World Bank

- Christopher Lovelace, Country Manager, AFMER

Ministry of Health

- Hon. Saleh Meky, Minister of Health
- Andeberhan Tesfatsion, Director, AIDS and tuberculosis Control Division (NATCoD)
- Andom Ogbamichael, Director General, Human Resources and Research
- Bahlbi Kiflom, Manager, National tuberculosis Control Program
- Berhana Haile, Head, Family and Child Health Division
- Bernando Kifleyesus, Director General, Regulation, Pharmaceutical Services
- Bikremaniam Ghillamichael, Infectious Disease Surveillance and Response Unit
- Embaye Andom, Director of Monitoring and Evaluation
- Eyob Tekle, Director, Project Management Unit (PMU)
- Goitom Mebrahtu, Director General, Communicable Diseases
- Leteyesus Negassi, Director, Finance and Administration
- Meles Seyoum, Director, National Laboratory Service
- Shashu Gebreselassie Director, Health Management and Information System (HMIS)
- Tajedin Addeh-Aziz, Head, Health Promotion Center
- Tekle Tewolde, Coordinator, Community-managed HIV Response Program, PMU
- Tewolde Ghebremeskel, Director, National Malaria Control Program
- Yifdeamlak Tesfamariam, Director, National Blood Bank
- Yosief Kiflemicael, Health Promotion Officer, Health Promotion Center

Other Ministries and Agencies

- Hon. Woldai Furtur, Minister of National Development
- Hagos Ahmed, Head, Population and Social Statistics Division, National Statistics Office
- Nequsse Maekele, Coordinator of Health Education, Sports, and Youth Affairs in the office of the Minister of Education, MOE focal person for HAMSeT
- Tsegenedu Afewerki, Ministry of Labor and Human Welfare
- Tsehaye Kebede, Project Coordinator, Ministry of Transport and Communication
- Yacob Yishak, Coordinator, Population and Social Statistics Division, National Statistics Office
- Yemane Tsegai, Director of Health Services, Ministry of Defense

Non-governmental structures involved with HAMSeT

- Caterina Keflemariam, Eritrean Catholic Secretariat, HIV/AIDS focal person
- Confederation of Workers HAMSeT focal person
- Hagos Ghirmay, Chairman and Founder, *Bidho* (Association of PLWHA)
- Issaias Neguse, Eritrean Catholic Secretariat, HAMSeT officer
- Mohammed Ali, Mufti HAMSeT focal point
- Robel Glher, Project Officer, *Bidho*
- Women's Union (NUEW) HAMSeT focal person
- Youth Union (NUEYS) HAMSeT focal person

International NGOs

- Bernt Skutlaberg, Director, Norwegian Church Aid

Donors

- Andrew Kosia, Resident Representative, WHO
- Aye Aye Mon, HIV Specialist, UNICEF
- Dirk Jena, Resident Representative, UNFPA
- Fransesco Leoni, hospital advisor/consultant, Italian Cooperation
- Juanita Vasquez, Deputy Resident Representative, UNICEF
- Michela Romanelli, Project Officer, Italian Cooperation
- Pascal Steiner, Country Coordinator, UNAIDS

Debub Zoba

- Joint meeting of Zoba HAMSeT-II Committee (including representatives of: Ministries of Health, Education, Labor and Human Welfare, Local Government, Tourism, Transport and Communication; the National Unions of Youth (NUEYS) and Women (NUEW); National Confederation of Eritrean Workers; faith-based organizations; people living with HIV/AIDS (*Bidho*); and the *zoba* PMU)
- Deputy-Governor, Social Affairs
- Tesfazion Ghirmay, Medical Officer, Zonal Technical Committee Chairperson
- Zonal Manager, HIV/AIDS, STI, Tuberculosis
- Abraham Woldeselassie, Malaria Officer
- Okbay Mehari, Public Health technician and head of laboratory, Entomology Laboratory
- HMIS Officer
- Visit to VCT Center
- Visit to Health Station
- Visit to Health Center
- Hospital Director, Mendefera Hospital

- Meeting with NUEYS representative for Mendefera and NUEYS Post-Test Club
- Meeting with 4 *Bidho* members providing home-based care to AIDS patients
- Meeting with Dessie Tesfay Woldu, peer facilitator and 30 female garment worker peers, Arrak Garment Factory
- Meeting with former sex worker trained in weaving
- Solomon Ghirmai, Zonal HAMSeT Project Officer, PMU
- Ghebereneguse Admekom, CMPHR facilitator, HAMSeT, PMU

Gash Barka Zoba

- Joint meeting of Zoba HAMSeT Committee (including representatives of: Ministries of Health, Education, Labor and Human Welfare, the National Unions of Youth (NUEYS) and Women (NUEW); National Confederation of Eritrean Workers; and the *zoba* PMU)
- Dr Girmai, Medical Officer; Chair *zoba* HAMSeT Committee
- Meeting of 2 sex workers and 2 representatives of Women's Union in Barentu
- Visit to Youth and recreational center
- Meeting of 3 members of PLWHA Group (*Bidho*)
- Visit to Health Station
- Visit to Catholic Health Center
- Hospital Director, Barentu Hospital
- Tadesse Kelati, Zoba HAMSeT-II Zonal HAMSeT Project Officer, PMU

Anseba Zoba

- Joint meeting of Zoba HAMSeT (including Deputy-Governor, Social Affairs and representatives of: Ministries of Health, Education, Labor and Human Welfare, Local Government, Tourism, Transport and Communication; the National Unions of Youth (NUEYS) and Women (NUEW); National Confederation of Eritrean Workers; and the *zoba* PMU)
- Ghebreselassie T/mariamManager, HIV/AIDS, STI, tuberculosis
- Kiros Sereke, Manager, Malaria
- Health Promotion Officer
- Meeting of 23 commercial sex workers and peer facilitator in Keren
- Manager, ART Program, Keren Hospital
- DOTs Program officer, Keren Hospital
- Awolkier Idris, Zoba HAMSeT-II Zonal HAMSeT Project Officer, PMU

Maekel (Central) Zoba

- Kibreab Tseggai, MOH, Zoba Maekel Health Promotion Officer
- Sex worker sub-project, 15 sex workers, peer facilitator in Abashal, Asmara
- Long-Distance Truck Driver peer group, Transhorn Company

Annex D. Timeline of World Bank Support to Eritrea's Health Sector

Table D-1. Chronology of events

Date	Eritrea national events	Eritrea Health Policy/Outcomes	World Bank	International and Donor Events
1952	Eritrea granted self-government as part of Ethiopia.			
1961	Ethiopia dissolves federation and declared Eritrea a province. Liberation movement, EPLF formed.			
1974	Intensification of struggle between Ethiopia and Eritrea.			Military coup in Ethiopia; Ethiopian Emperor Haile Selassie overthrown by Haile Mariam Mengistu.
1977–1991	Continued fighting between Eritrea and Ethiopia.			
May 1991	Liberation from Ethiopia ending three decades of war for independence.			Ethiopian People's Rev Democratic Party takes over Megistu military government.
1991–1993			Eritrea requests Bank assistance. Bank starts Country Economic Memorandum (CEM) and prepares Recovery and Rehabilitation Project for Eritrea (RRPE).	
1992		Establishment of the National AIDS Control Program		
1993	Eritrea referendum votes for independence. Eritrea joins the UN. Eritrea formally independent (April)		RRPE becomes effective (in advance of Eritrean Bank membership). Internal CAS prepared. First Consultative Group held in Paris (December)	
1994	Eritrea becomes member of World Bank (July)		Eritrea becomes member of World Bank (July) CEM to Board (November)	
1995		First Demographic and Health Survey implemented.	RRPE suffers implementation delays. Health Project - Identification/Preparation Mission (September, November).	Eritrea presents first macroeconomic policy to CG.
1996			First CAS presented to the Board. ECDF Project presented to Board. Health Project – Appraisal/Negotiation Mission. Several projects cancelled; project preparation stalls; implementation problematic. Poverty and Environment Paper produced; was poorly received.	
1997	Ratification of Constitution by Constituent Assembly (May)	MOH formulates HIV/AIDS policy and guidelines and adopts its first five-year National Strategic Plan (NSP) on HIV/AIDS/STIs for the period 1997–2002. PHARPE (Public Health and Rehabilitation Program in Eritrea) starts; funded by Italian Cooperation and WHO was the implementing agency. Minister Meky appointed as Minister of Health.	Health Project – Appraisal/Negotiation Mission (June, August, October). Health Project – Approval (December).	

Date	Eritrea national events	Eritrea Health Policy/Outcomes	World Bank	International and Donor Events
1998	War with Ethiopia (May).	Ratification of the HIV/AIDS and STIs policy and policy guidelines.	Resident Mission established. Health Project – Supervision Missions (January, June, October) Health Project – Effective. New Bank lending halted (May)	
1999		Mendefera Declaration on Malaria Control in Eritrea commits the country to reducing malaria morbidity and mortality by 80 percent from the 1999 levels.	Health Project – Supervision Missions (May, October). Bank agreed to finance malaria control program (October) following request for emergency reallocation (May).	NORAD agrees to co-finance hospital construction under the Health Project (NOK25 million; $2.75 million). Swiss Red Cross agrees to fund equipment and technical assistance for NBTS.
2000	Escalation of war (May 12) Cessation of hostilities agreement with Ethiopia (June 18) Security Council authorizes UN Mission in Ethiopia and Eritrea (July). UN authorizes Peace keeping force to be deployed by December 2000 (September) Peace talks resume (October 23)	Eritrea signs African Summit on Roll Back Malaria in Abuja, Nigeria (April)	Health Project – Supervision Missions (March, September) HAMSeT Control Project – Identification/Preparation Missions (March, May, September). Bank resumes lending and prepares multi-donor Emergency Reconstruction Program (ERP). Bank reallocates funds from existing portfolio (June). Early Childhood Development Project approved (July). CAS Interim Support Strategy approved. ERP approved (November). HAMSeT Control Project approved (December).	
2001		Communications strategy, Winning through caring, launched (June). MOH conducts a nationwide HIV sentinel surveillance in which 14 urban and 29 rural sites from all six zones were included.	Health Project – Supervision Missions (May, November). HAMSeT Control Project – Appraisal/Negotiation mission and effectiveness (May). HAMSeT Control Project – Supervision Mission (November).	UN Monitored Temporary Security Zone established (April).
2002		MOH adopts its second NSP for 2003–2007. Adoption of a set of HIV testing guidelines. PMTCT services were opened as pilot project in 2002 in the *zoba* Maekel. Formal adoption of a national BCC strategy entitled “Winning through Caring." Second Demographic and Health Survey implemented. CMHRP Manual drafted and translated. First CMHRP sub-projects launched in all but one *zoba*, SRS. (December). *Bidho* was founded (January). The organization fulfils the requirements of article 404–482 of the transitional civil code of Eritrea and is established as a civil, non-religious, non-political, non-governmental and non-profit association. Eritrean Household Health Utilization and	Health Project – Supervision Mission (April, June, November). HAMSeT Control Project – Supervision Mission (June, November). Health Project Reallocation of funding for training (abroad) to fund training centers	

Date	Eritrea national events	Eritrea Health Policy/Outcomes	World Bank	International and Donor Events
		Expenditure Survey (EHHUES) completed.		
2003		Restructuring of the MOH and the creation of the National HIV/AIDS/STI and TB Control Division (NATCoD). Development of PMTCT guidelines and plan of action. Development of Joint UN and Partners Implementation Support Plan to the National Strategic Plan, developed for 2003, 2004 and 2005. Development of home- based care and VCT training manuals. RRI workshop in Asmara to accelerate implementation of CMHRP component (February). The RRI focused on: (i) VCT; (ii) BCC among vulnerable groups (CSW, truckers); (iii) school-based prevention; (iv) home-based care; and (v) safe injection practices	Health and HAMSeT Control Projects – Supervision Missions (February, June).	Global fund approved $2.6 million for malaria. (Source: Mid-term Review (MTR)).
2004	GOE formulates its Millennium Development Goals.	PMTCT services expanded to the *zoba* Debub. Second round of RRIs launched in Zoba Maekel on: (i) BCC among SWs; (ii) BCC among truck drivers; (iii) HIV/AIDS education for school children; (iv) maintenance of safe injection at Halibet hospital; and (v) HBC. (January/February) New health curriculum including HAMSeT diseases is formally launched (2004–2005 school year).	Health Project – Supervision Mission (February, June) and Completion Mission (December). Closed (December) HAMSeT Control Project – Supervision Mission (February, June) and Mid-Term Review. After MTR, it recommended that future CMHRP sub-project grants be limited to $5,000 or less (previously it was $30,000), that they be more focused on vulnerable groups, and be implemented by communities rather than decentralized line ministries.	Global fund approved $8.1 million for HIV/AIDS. (Source: MTR).
2005		Sentinel surveillance in pregnant women was 2.38 percent. Development of antiretroviral policy and treatment guidelines. Launching of antiretroviral therapy (September) Tuberculosis prevalence survey implemented.	Interim Strategy Note (March). HAMSeT II Control Project – Board Approval (June) and effectiveness (August). HAMSeT Control Project – Completion Mission (August).	In response to a request by the GOE (July), USAID offices were closed and development assistance programs ceased on December 31, 2005.
2006		PMTCT expanded to all *zobas*. Development of revised VCT guidelines.	HAMSeT Control Project – Completion Mission (February) and closing date (March). Special surveys conducted of SWs in Asmara and Massawa.	
2007		Universal Access targets on prevention, treatment, care and support services. Development of a revised Eritrean HIV/AIDS Care Manual. PMTCT Communication Strategy Manual.	Early Childhood Development Project – Closing date (March).	

Annex E. Analysis of approved CMHRP sub-projects

This annex presents detailed tabulations of the approved sub-projects financed through the Community-Managed HAMSeT Response Program (CMHRP). According to the PMU, as of the project's closing, a total of 941 sub-projects had been approved and 908 had been completed. The 33 projects that had been approved but not launched were financed out of HAMSeT II.

The documentation of the sub-projects by the central PMU was generally weak, as most of the control of these funds was at the *zoba* level. However, the PMU facilitated IEG in obtaining the complete list of approved sub-projects for *zobas* Anseba, Maekel, Northern Red Sea, and Southern Red Sea, and partial lists for Debub (71 percent of approved sub-projects) and Gash Barka (89 percent of approved sub-projects, see Table D-1). Thus, IEG was able to analyze 844, or 90 percent, of the 939 approved sub-projects.[110] However, this analysis was limited exclusively to the sub-project approvals; no information was available on the efficacy of any of the sub-projects.

There was no standard reporting format for sub-projects across the *zobas*, particularly prior to the mid-term review. The disease to be addressed, the specific activities to be implemented, the responsible agency for implementation (for example, the community, a line ministry, a non-government entity), the target group for the intervention, and the dates of approval, implementation, and completion, were not consistently reported across *zobas*. IEG also found many inconsistencies in summing the total grant amounts and the total number of sub-projects. Additional tables are available from IEG with more detailed disaggregated data.

Table E-1. Summary statistics – Review of approved CMHRP sub-projects

Zoba	No. of projects approved	No. of projects reviewed	Coverage of review (%)	Approved CMHRP budget		No. of grants >1 million Nakfa	No. of grants >450,000 Nakfa ($30K)	No. of grants with no comm. contri-bution	Avg CMHRP grant/ sub-project
				Mini-mum grant	Maximum grant				
Anseba	144	144	100.0	3,577	968,200	0	2	22	75,450
Debub	238	168	70.6	15,211	2,682,179	6	12	0	217,390
Gash Barka	235	210	89.4	27,310	510,000	0	1	18	83,928
Maekel	139	139	100.0	750	2,800,000	2	4	5	148,135
NRS	89[a]	89	100.0	9,760	4,536,133	5	11	17	812,450
SRS	94[b]	94	100.0	3,400	945,061	0	7	33	185,371
Total	939	844	89.9	750	4,536,133	13	37	95	136,619

Source: IEG analysis of zoba-level lists of approved CMHRP projects.
a. PMU documents counted 90 approved projects in NRS. However, on review of the project list, one line number was skipped and the total number approved is actually 89.
b. PMU documents counted 95 approved projects in SRS. However, on review of the project list, one line number was skipped and the total number approved is actually 94.

110. IEG discovered mis-counts in two of the *zoba*s with 100 percent coverage; the number of sub-projects actually approved seems to have been 939, not 941.

Table E-2. Distribution of sub-projects by disease and intervention

Table E-2a. Distribution of approved HIV/AIDS sub-projects by intervention

	Approved sub-projects		Approved grants	
Intervention	Number	Percent	Nakfa	Percent
Behavior change communication	221	44.6	14,004,026	27.7
Awareness/sensitization/campaigns	78	15.8	8,455,201	16.7
Care and support for orphans	27	5.5	7,606,989	15.0
Vocation training/rehab for SWs	8	1.6	4,818,933	9.5
Administrative/training	59	11.9	3,494,111	6.9
Home-based care and HBC training	50	10.1	3,320,629	6.6
Unspecified care and support	4	0.8	2,876,000	5.7
VCT promotion, construction, expansion or post-test clubs	22	4.4	2,284,097	4.5
Care, financial support, counseling for PLWHA	13	2.6	2,186,224	4.3
Prevention of infection in hospitals	1	0.2	780,831	1.5
PMTCT	8	1.6	510,460	1.0
Intervention unclear	2	0.4	107,638	0.2
Income generation	1	0.2	64,000	0.1
Condom distribution	1	0.2	67,500	0.1
Total	495	100.0	50,576,639	100.0

Source: IEG analysis of *zoba*-level lists of approved CMHRP projects.

Table E-2b. Distribution of approved HAMSeT sub-projects by intervention

	Approved sub-projects		Approved grants	
Intervention	Number	Percent	Nakfa	Percent
Awareness/sensitization	40	59.7	13,103,431	81.6
Training/assessments	19	28.4	2,342,711	14.6
BCC promotion through sports events	4	6.0	280,000	1.7
Vocational training	2	3.0	197,975	1.2
Strengthen village health committees for malaria & TB	1	1.5	70,000	0.4
Specific intervention not clear	1	1.5	57,155	0.4
Total	67	100.0	16,051,272	100.0

Source: IEG analysis of *zoba*-level lists of approved CMHRP projects.

Table E-2c. Distribution of approved TB sub-projects by intervention

	Approved sub-projects		Approved grants	
Intervention	Number	Percent	Nakfa	Percent
Food and DOTS/outreach/case detection, shelter	38	55.1	4,953,188	49.9
Specific intervention not identified: "TB prevention & control", "outreach", "TB project"	27	39.1	4,732,637	47.7
Training of TB promoters	3	4.3	190,000	1.9
TB "promotion", sensitization	1	1.4	44,013	0.4
Total	69	95.7	9,919,838	100.0

Source: IEG analysis of *zoba*-level lists of approved CMHRP projects.

Table E-2d. Distribution of approved malaria sub-projects by intervention

	Approved sub-projects		Approved grants	
Intervention	Number	Percent	Nakfa	Percent
Source reduction	41	42.3	3,543,179	38.5
Sensitization	14	14.4	3,216,936	34.9
Source reduction/sanitary equipment	27	27.8	1,076,043	11.7
Source reduction and bed-net distribution/reimpregnation	6	6.2	408,830	4.4
Environmental controls	4	4.1	270,000	2.9
Plant trees	4	4.1	591,120	6.4
Workshop	1	1.0	106,354	1.2
Total	97	100.0	9,212,462	100.0

Source: IEG analysis of *zoba*-level lists of approved CMHRP projects.

Table E-3. Distribution of sub-projects by intervention that are not directly related to control of HAMSeT diseases, by intervention

	Approved sub-projects		Approved grants	
Intervention	Number	Percent	Nakfa	Percent
Water supply and sanitation	12	12.9	7,894,973	29.2
Renovation of buildings, libraries, sports fields	13	14.0	7,226,768	26.7
Construction of recreation centers & libraries	3	3.2	3,072,279	11.4
Vocational training for vulnerable/destitute women	6	6.5	2,672,127	9.9
Sporting events/indoor games/youth clubs	8	8.6	2,019,613	7.5
Training/incentives/M&E/PMU/CMHRP administrative	15	16.1	1,462,042	5.4
Antenatal care, delivery, MCH nutrition	25	26.9	1,349,455	5.0
Cultural performances/activities	10	10.8	1,260,135	4.7
School supplies for students	1	1.1	84,946	0.3
Total	93	100.0	27,042,338	100.0

Source: IEG analysis of *zoba*-level lists of approved CMHRP projects.

Table E-4. Distribution of approved sub-projects by *zoba* and disease

	Anseba		Debub		Gash Barka		Maekel		NRS		SRS		Total	
Disease	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
AIDS*	82	57	75	45	137	65	100	72	58	65	43	46	495	58.6
**Of which STI*	*0*		*8*		*43*		*0*		*0*		*0*		*51*	
Tuberculosis	11	8	6	4	25	12	2	1	14	16	11	12	69	8.2
Malaria	19	13	27	16	38	18	4	3	9	10	0		97	11.5
Hamset[a]	27	19	33	20			1	1	3	3	3	3	67	7.9
Not specified							7	5			16	17	23	2.7
Non-HAMSeT	5	3	27	16	10	5	25	18	5	6	21	22	93	11.0
Total	144	100	168	100	210	100	139	100	89	100	94	100	844	100

Source: IEG analysis of *zoba*-level lists of approved CMHRP projects.
a. Includes one project in Maekel devoted to malaria and TB only. Neither Gash Barka nor Maekel had projects labeled as "hamset" or with activities described as "hamset".

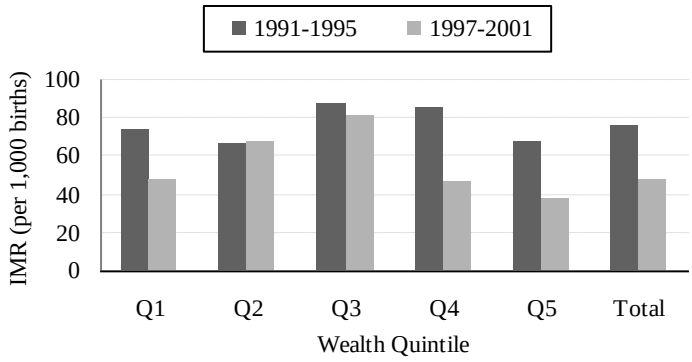
Table E-5. Distribution of approved CMHRP sub-project budgets by *zoba* and disease

	Anseba		Debub		Gash Barka		Maekel		NRS		SRS		Total	
Disease	CMHRP	%	CMHRP	%	CMHRP	%	CMHRP	%	CMHRP	%	CMHRP	%	No.	%
AIDS	7,286,864	67.1	9,541,096	29.8	9,000,264	64.9	10,775,839	56.4	8,558,801	35.9	5,413,775	34.6	50,576,639	43.9
Tuberculosis	535,398	4.9	473,604	1.5	1,727,954	12.5	94,095	0.5	3,495,498	14.7	3,593,289	22.9	9,919,838	8.6
Malaria	566,843	5.2	5,179,354	16.2	2,521,630	18.2	241,870	1.3	702,765	2.9		0.0	9,212,462	8.0
Hamset[a]	2,162,262	19.9	4,279,471	13.4		0.0	70,000	0.4	9,309,439	39.1	230,100	1.5	16,051,272	13.9
Not specified		0.0		0.0		0.0	457,782	2.4		0.0	2,046,173	13.1	2,503,955	2.2
Non-HAMSeT	313,423	2.9	12,516,952	39.1	610,090	4.4	7,465,630	39.1	1,762,270	7.4	4,373,973	27.9	27042338	23.5
Total	10,864,790	100	31,990,477	100	13,859,938	100	19,105,216	100	23,828,773	100	15,657,310	100	115,306,504	100

Source: IEG analysis of *zoba*-level lists of approved CMHRP projects.
a. Includes one project in Maekel devoted to malaria and TB only. Neither Gash Barka nor Maekel had projects labeled as "hamset" or with activities described as "hamset".

Annex F. Sectoral data and Communicable disease outcomes

Figure F– 1. Improvement in IMR, by wealth quintile



Source: Macro International 2002; Gwatkin et al. 2007.

Table F-1. Referrals to Barentu and Mendefera hospitals, 2004-2007

Referrals to:[a]	2004	2005	2006	2007
Barentu Hospital				
from health centers in *zoba*		177		294
from other hospitals in *zoba*	15	46	2	8
Mendefera Hospital				
from health centers in *zoba*	315	299	384	409
from other hospitals in *zoba*	109	239	211	238

Source: MOH 2008a.
a. Data on the reasons for the referrals are not collected by the HMIS and were not available for analysis.

Table F-2. Burden of Disease, 2001

	Share of total estimated deaths (percent)	Share of total estimated DALYs (percent)[a]
Communicable, maternal, peri-natal and nutritional conditions	70	69
Infectious and parasitic diseases	44	41
Tuberculosis	5	4
STIs excluding HIV	0	1
HIV/AIDS	16	13
Malaria	6	7
Diarrheal diseases	6	6
Childhood-cluster diseases	4	5
Respiratory infections	16	15
Maternal conditions	2	4
Peri-natal conditions	6	7
Nutritional deficiencies	1	2
Non-communicable diseases	22	22
Cardiovascular diseases	10	3
Injuries	7	9
All causes	100	100

Source: WHO, http://www.who.int/whosis/en/

a. Disability-adjusted life years (DALYs) is a measure for the overall disease burden, and is designed to quantify the impact of premature death and disability by combining mortality and morbidity into a single, common metric.

Table F-3. Public sector health expenditure, 1996-2005

	1996	1997	2000	2001	2002	2003	2004	2005
Public health expenditure ($ 000)								
Government	12,144	15,414	10,798	10,697	11,943	11,124	13,473	12,353
Recurrent	10,515	13,244	10,209	9,813	10,768	10,173	10,055	10,862
Capital	1,628	2,170	589	884	1,175	951	3,418	1,491
Donor					26,558	21,945	35,570	31,035
Total (Government + Donor)					38,352	33,740	49,043	43,387
Per capita public health expenditure ($)								
Using population estimates in MOH HMIS					10.2	9.3	14.2	13.2
Using the population estimates in World Bank PER					7.0	9.0	10.0	8.0

Source: World Bank 2008b.

Table F-4. VCT coverage and HIV prevalence rate at VCT sites, 1999–2007

	People tested	HIV prevalence rate (%)
1999	1,510	
2000	2,010	
2001	2,227	
2002	10,659	
2003	32,292	
2004	47,663	3.9
2005	69,121	3.4
2006	75,795	3.5
2007	80,706	3.2

Source: MOH 2008b.

Table F-5. Level of knowledge of HIV/AIDS and STIs, marital status and sexual activity among young people 15-19, prior to HAMSeT interventions

	Men 15–19	Women 15–19	
	1995 (n=237)	1995 (n=1,129)	2002 (n=2,001)
Source of information:			
Radio	78.4	73.8	
Newspaper	41.6	26.1	
TV	34.1	23.3	
School	28.0	18.6	
Friend/relative	31.8	30.1	
Knowledge of HIV			
Ever heard of AIDS?[a]	89.4	82.1	97.2
AIDS can be avoided	97.5[b]	95.4[c]	92.1
Can be avoided by condom use	45.9[b]	40.4[c]	78.5
Can be avoided by having only one partner	39.8[b]	46.8[c]	90.9[d]
A healthy-looking person can have AIDS	71.3[b]	67.3[c]	80.3
Knows someone with HIV/AIDS	7.3[b]		40.4
Knowledge of STIs			
No knowledge of STIs in men or women			60.0

Source: Macro International 1995, 2002.

a. Prompted question. b. Sample size is 212 (those who have heard of AIDS). c. Sample size is 926 (those who have heard of AIDS). d. Includes limit number of partners, limit sex to one partner/be faithful to one partner, one partner who has no other partners.

Table F-6. HIV knowledge and risk perception, 2006

	Knowledge of how HIV can be prevented			Self-perception of HIV risk	
	Abstinence	Being faithful	Condom use	No risk	High risk
National (2006)	51.4	49.1	57.3	47.2	26.6
Anseba	48.7	47.7	49.0	45.4	25.4
Debub	49.0	60.4	80.1	69.8	20.6
Gash Barka	47.1	52.4	52.9	42.4	31.9
Maekel	53.8	53.3	77.1	45.6	32.9
NRS	55.0	41.8	39.7	36.2	29.7
SRS	60.6	29.7	42.1	38.4	14.6

Source: MOH 2006c.