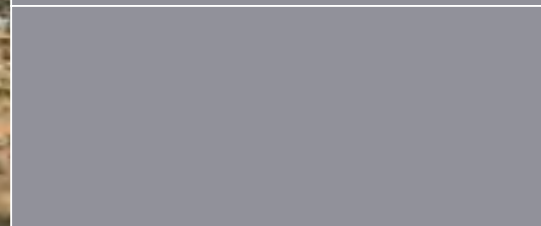
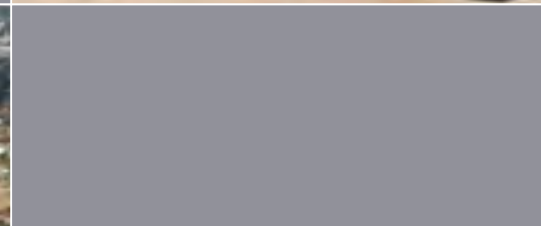
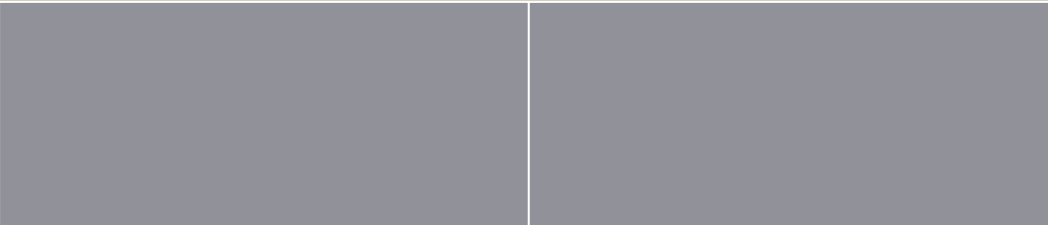




# Evaluation of Norwegian Health Sector Support To Botswana

**Report 10/2011 – Evaluation  
Volume I**



**Norad**

Norwegian Agency for  
Development Cooperation  
P.O.Box 8034 Dep, NO-0030 Oslo  
Ruseløkkveien 26, Oslo, Norway

Phone: +47 22 24 20 30

Fax: +47 22 24 20 31

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# **Evaluation of the Norwegian Health Sector Support to Botswana**

**Final Report  
Volume I  
January, 2012**

Karen Campbell  
Philda Kereng  
John Malmborg  
Marta Medina  
Vincent Musowe  
Marc Réveillon  
Garth Singleton



## Preface

Norway has provided development assistance to the health sector in Botswana since 1972. The first phase of assistance started with the support for construction of rural health clinics and gradually developed into a substantial technical assistance program over the next fifteen years. The second phase started in the mid-nineties and focused on the education of Botswana medical students in Norway together with supporting Botswana in its efforts to overcome the challenges posed by the HIV/AIDS epidemic in the country. The main purpose of this evaluation has been to assess the results of this long-term assistance and outline lessons that can be used in the design and implementation of future health sector programs in partner countries.

The evaluation finds significant improvements in the provision and utilization of health infrastructure together with substantial gains in health status of the population up until the HIV/AIDS epidemic reversed the trend in the early nineties. However, it should be noted that during the same period Botswana also experienced large increases in natural resource revenues which were used to finance substantial improvements in education, nutrition and access to clean water and sanitation; all factors that are relevant in explaining the observed improvements.

The evaluation credits Norwegian assistance with being relevant and for contributing to the observed gains in health status. It also commends Norway for being innovative in delivering assistance. Technical assistance through direct placement of clinical and non-clinical personnel in mid-level line positions within the Botswana health services shows a commitment to ownership and alignment which was much ahead of its time.

The rural health facilities constructed during the early phase of Norwegian assistance continue to be operational. The same applies to the infrastructure for distribution of medical supplies and medicines through the Central Medical Stores established under Norwegian assistance. The sustainability of these investments has been as much due to the early Norwegian assistance as to the ability and the willingness of Botswana to maintain these investments. The HIV/AIDS epidemic has reversed much of the gains in health status made during the early years, though the study suggests that the well-developed rural health infrastructure and an operational distribution system may have contributed to containing the impacts of the epidemic. One of the objectives of the second phase of the cooperation was to

develop Botswana's own capacity through education of medical personnel. Results of this measure could not be confirmed by this evaluation.

The experience from Botswana illustrates the potential for development cooperation when foreign assistance is combined with domestic resources under a stable political environment. It also illustrates the vulnerability of the gains to exogenous shocks and the importance of investing in epidemic preparedness.

Oslo, November 2011

A handwritten signature in black ink, appearing to read 'Marie M. Gaarder', written in a cursive style.

Marie M. Gaarder  
Director, Evaluation Department

## Acknowledgements

Undertaken by:

Health Research for Action (HERA), Laarstraat 43, 2840 Reet, Belgium

Consultant Team:

Karen Campbell – Human Resources

Philda Kereng – Social Scientist

John Malmborg – Capital Planning

Marta Medina – Public Health

Vincent Musowe – Botswana Health Policy

Marc Réveillon - Finance

Garth Singleton - Team Leader

Evaluation Management by:

Balbir Singh – Evaluation Department, NORAD.

Ms. Naladi Mlaudzi – Botswana Ministry of Health

This report is the product of its authors, and responsibility for the accuracy of data included in this report rests with the authors. The findings, interpretations, and conclusions presented in this report do not necessarily reflect the views of EVAL.





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## List of Definitions

Epidemiological Transition	The phase of development witnessed by an increase in population growth rates brought about by a fall in mortality rates, as a result medical innovation in the prevention or treatment of disease, while fertility rates remain high.
Infant Mortality Rate	The number of infant deaths (one year of age or younger) per 1000 live births.
Life Expectancy at Birth	Life expectancy is the expected (in the statistical sense) number of years of life remaining at a given age, in this case the expected number of years a child born in a particular year can be expected to live.
Maternal Mortality Ratio	The number of maternal deaths during given time period <i>per 100,000 live births</i> during the same time.
Multi-drug resistance tuberculosis	Cases of TB in which the drugs for first line treatment are not effective due to resistance by the TB organisms to these treatments. In such cases multidrug-resistant TB (MDR-TB) can develop. MDR-TB takes longer to treat with second-line drugs, which are more expensive and have more side-effects.
Extensively drug resistance tuberculosis (XDR-TB)	A form of TB that can develop when the second-line drugs (see above) are also misused or mismanaged and also become ineffective. Because XDR-TB is resistant to first- and second-line drugs, treatment options are seriously limited.
Stunted	Stunted growth in a child refers to low height-for-age, when a child is short for his/her age but not necessarily thin. Also known as <b>chronic malnutrition</b> , this carries long-term developmental risks.
Under five years mortality rate	Probability of dying (per 1000) under age five years.
Wasted	Wasted refers to low weight-for-height where a child is thin for his/her height but not necessarily short. Also known as <b>acute malnutrition</b> , this carries an immediate increased risk of morbidity and mortality.

## List of Abbreviations and Acronyms

ANC	Ante-Natal Care
ART	Anti-Retro Virus Therapy
ARV	Anti-Retro Virus
BEMS	Bio-Medical Engineering Unit, of MOH
BWP	Botswana Pula (Currency of Botswana)
CMS	Central Medical Store
CSO	Central Statistics Office, of GOB
CWC	Child Welfare Clinic
DAC	Development Assistance Committee of OECD
DBES	Department of Building and Engineering Services of MIST
DiS	Diakonjemmet International Centre, Oslo, Norway
DOT	Directly Observed Treatment (for TB)
EMOC	Emergency Obstetric Care
EPI	Expanded Programme on Immunisation
EVAL	The Evaluation Department of NORAD
FGD	Focus Group Discussion
GAVI	Global Alliance for Vaccines and Immunisations
GDP	Gross Domestic Product
GFTAM	Global Fund for Tuberculosis, HIV/AIDS and Malaria
GOB	Government of Botswana
HIS	Health Information System
HIV	Human Immunodeficiency Virus
HIV/AIDS	Human Immunodeficiency Virus / Acquired Immunodeficiency Syndrome
HMIS	Health Management Information System
HRD	Human Resources Development
HRH	Human Resources for Health
HSR&P	Health Sector Relations and Partnerships
ICD10	International Classification of Diseases (10th Edition)
IMR	Infant Mortality Rate
M&E	Monitoring and Evaluation
MDG	Millennium Development Goal
MFDP	Ministry of Finance and Development Planning
MIST	Ministry of Infrastructure, Science & Technology
MMR	Maternal Mortality Ratio
MNCH	Maternal, New born and Child Health
MOH	Ministry of Health
MOLG	Ministry of Local Government

MTR	Mid-Term Review
NACA	National AIDS Coordinating Agency
NDP	National Development Plan
NGO	Non-Governmental Organisation
NHA	National Health Accounts
NOK	Norwegian Krona (Currency of Norway)
NORAD	Norwegian Agency for Development Cooperation
OECD	Organisation for Economic Development & Cooperation
OPA	Outpatient Attendance
OPD	Outpatient Department
ORS	Oral Rehydration Solution
PEPFAR	President's Emergency Plan for AIDS Relief
PHC	Primary Health Care
PMTCT	Prevention of Mother to Child Transmission of HIV
PPM&E	Policy, Planning and Evaluation Division of MOH
Pula	The national currency unit of Botswana
RADP	Remote Areas Development Project
RT	Review Team
SSB	Statistics Norway
TA	Technical Assistant
TB	Tuberculosis
TOR	Terms of Reference
TSS	Technical Support Services of MOH
U5MR	Under Five Mortality Rate
UN	United Nations
UNFPA	United Nations Fund for Population Activities
UNICEF	United Nations Children's Fund
UoB	University of Botswana
USD	United States Dollar
WHO	World Health Organisation

## Botswana National Development Plan Periods

NDP 3	1971/2 – 1974/5	NDP 7	1991/2 – 1996/7
NDP 4	1975/6 – 1980/1	NDP 8	1997/8 – 2002/3
NDP 5	1979/80 – 1984/5	NDP 9	2003/4 – 2008
NDP 6	1985/6 - 1990/1	NDP 10	2009 - 2016

# Executive Summary







# Executive Summary

## Introduction

Norway has been collaborating with Botswana to develop the Botswana health sector for over thirty five years, since shortly after Botswana's Independence in 1966. During that time Botswana's economy has grown such that it has graduated from being one of the poorest countries in the world to one that is classified as being upper middle income. These economic gains have been translated into development activities that have increased economic opportunities for the country's citizens, improved educational levels dramatically and, until being severely affected by the HIV/AIDS epidemic, saw a steady rise in the health status of the people of Botswana. Norway has been a partner in the development of the Botswana health services since 1975 and this evaluation has been conducted to try to identify what role Norwegian assistance had in assisting Botswana to make the health status gains recorded up until around 1990 and, thereafter, what role its assistance may have had in helping Botswana respond to the severe challenges posed by one of the worst HIV/AIDS epidemics in the world.

The evaluation was conducted by a team of international consultants experienced in various aspects of health sector development, mainly using secondary data from a variety of different official Botswana and Norwegian sources. The analysis of this secondary data was informed by interviews with a number of key Norwegian and Botswana stakeholders who had experience of the collaboration going right back to 1975. In addition a short field visit was conducted, to a limited sample of health facilities and communities, to assess the present condition of infrastructure developed with Norwegian support, to gain insights into the current functioning of the Botswana health sector and of community perceptions of changes to the sector since Independence.

It is recognised that there are many, perhaps more important, factors that impact on the health status in a country besides just its health care system. In Botswana there have been dramatic improvements in many of these factors, principally education levels, access to clean water and economic status. It is also recognised that in the context of overall spending on health care in Botswana over 35 years, the financial contribution by Norway was relatively minor, although in the late 1970s it was a very significant contributor to the Botswana health development budget.

The evaluation conducted studies into the changes in health status in Botswana between Independence and the present day, using an impressive series of data sets available within the country. Similarly it studied changes in the health sector itself, looking at policies, infrastructure, human resources and ultimately health sector performance to measure how the sector had developed since Independence. A third study strand was to identify and evaluate the multiple Norwegian supported inputs to the health sector over the same period. These different strands were then considered together, and, with the help of key stakeholders, a judgement arrived at as to the effect of Norwegian assistance on the Botswana health sector.

### **Norwegian Assistance**

Norwegian Assistance to the Botswana health sector can be considered to have taken place in two distinct phases. Phase 1, from 1975 to 1996 and valued at nearly 400 million Norwegian Krona through its many separate project inputs is best considered as a Programme Approach (see below). The much smaller Phase 2, which started in 1996 and is due to finish in 2012, valued at around Krona 135 million, was implemented through an Institutional Cooperation approach. This, in 1996 when it started, was a relatively new policy initiative for Norwegian development assistance.

### **Relevance**

The support in Phase 1 is considered by the Evaluation team to have been highly relevant and focussed on the expressed needs of Botswana, as these were articulated through successive National Development Plans. The assistance took a programme approach to initially assist in the development of primary health care services through the provision of health infrastructure (buildings, equipment, communications systems and health staff housing) to enable access to health care to be increased significantly. It provided support to the development of decentralised management systems to enable a functioning district health system to become operational in support of the primary care facilities and it addressed central level systems, notably pharmaceutical supplies and an oral health service, to enable the efficient functioning of the primary care network. These systems, developed with considerable Norwegian assistance are still functioning in a similar form today. Norway also addressed health human resources shortages by the provision of medical doctors and other health professionals.

The comprehensive focus of Norwegian Assistance on primary health care development and systems development during Phase 1 had great significance in helping Botswana structure a health service that enabled greatly improved access to health care throughout Botswana.

Phase 2, 1996 – 2012, took place in the context of a health system that had achieved its targets for enabling access to health care services and was turning more to a need to improve the quality of care provided while

also needing to address issues of efficiency and effectiveness. This was particularly so in the context of a major crisis resulting from the AIDS epidemic and the shift to the more complex and expensive care requirements of a country that was undergoing the epidemiological transition. Phase 2 supported activities included support to develop systems to improve the quality of care and to roll out Anti-Retroviral Therapy, to increase health systems research capacity and improve HIV prevention efforts as well as support medical doctor training. The Evaluation team considers that the activities supported in Phase 2 have been very relevant for the health sector in Botswana.

### **Effectiveness**

Norway was the most important external partner to Botswana's health sector and an important contributor to the development of the sector during the years 1972-1995. Norwegian assistance represented more than 90% of total Government of Botswana development expenditure on health in 1975 and was still above 30% in 1991.

From a very low base at the time of Independence, the Government policy to improve access to health facilities for the population was successfully implemented, with 84% of the population now living within a 5 km radius of the nearest health facility and a further 11% living between 5 and 8 km. Over the period 1974-1994, when there was active Norwegian support for health infrastructure development, the infrastructure for the provision of primary health care services in Botswana grew steadily. In this period, the number of health posts grew by 57%, from 198 to 310, and the number of clinics more than quadrupled from 47 to 200. Alongside the expansion in access to health facilities, there was an increase in the utilisation of health services with primary level services contributing significantly:

- The number of general outpatient attendances more than doubled between 1974 and 1994 (from 0.87 visits per capita to 1.77 per capita) with clinics and health posts providing the majority of outpatient attendances.
- The total number of child welfare attendances provided by the various facilities grew almost 400% from 427 thousand to 1.7 million. This growth mainly took place at clinics and health posts.
- Immunisation coverage rates of 90% or higher for all vaccines amongst children under one year of age were achieved by 1988 and subsequently maintained. This successful programme can, in part, be attributed to the wide access to health facilities throughout the country.
- Antenatal care attendances grew by around 75% between 1976 and 1994 with primary health care facilities being the largest providers of these services.
- There was a massive increase in the uptake of family planning services from 1976 with, by 1996, 40% of all women of reproductive age using some form of contraceptive. Most of these services were provided by clinics and health posts.

Significantly improved access to health services, accompanied by various social factors had a positive effect on health status in Botswana. The

social factors that will have impacted on health status in Botswana are the growth in the economy, which grew by an average of nearly 9% per year; education, in which Botswana has achieved the goal of universal access to primary education; and access to clean water supplies, by 2007, 96% of the population had access to improved sources of drinking water. However, there are still concerns over nutritional status with, in 2007, 25.9% of children under five being stunted and 7.2% wasted.

Botswana's population nearly tripled in the period 1971- 2001, growing from a population of 574,000 inhabitants in 1971, to 1,680,863 in 2001. It is projected to grow to nearly 1,950,000 by 2016. The high rate of population growth of the 1970s and 1980s has, however, been declining, from 3.5% between 1981 and 1991 to 1.17% from 2001 to 2006. The total fertility rate declined rapidly from 6.5 children per woman in 1971, to 4.2 in 1991 and 3.2 in 2006.

Mortality rates were in decline until 1991. However, from 1991 crude death rate increased from 11.5 to 12.4/ 1,000 in 2001, Infant Mortality Rate from 48 to 56/1,000, and Under 5 years Mortality Rate rose from 63 to 74 /1,000 in the same period. Currently mortality rates are at about the same level as they were in 1991. The maternal mortality ratio fell from 326/100,000 live births in 1991 to 193/ 100,000 live births in 2007. After recording continuous improvements in life expectancy at birth, from 55.5 years in 1971 to 65.3 years in 1991, life expectancy in 2006 had declined to the levels of 1971. These increases in mortality rates and reduced life expectancy at birth are largely due to the impact of HIV and AIDS.

In 1985 the first case of HIV infection was reported and Botswana now faces the second most severe HIV/AIDS epidemic in the world. By 1991, HIV/AIDS was having a significant effect on national morbidity and mortality levels. Tuberculosis, malaria and diarrhoea had all re-emerged. In 1974, Tuberculosis was considered "probably the worst Public Health problem in the country (MOH 1974)". After declining in prevalence until the early 1990s, and as a result of the HIV epidemic, it has re-emerged as a major concern and once more represents an important public health problem, with increasingly, Multi-drug resistance tuberculosis and in 2008, Botswana's first case of extensively drug resistance tuberculosis.

The primary health care infrastructure, the district health systems, and the presence of an effective pharmaceutical supply network, all developed with Norwegian assistance, along with the support of a number of Norwegian Technical Assistants, contributed to the capacity of Botswana's health system to respond to the AIDS epidemic. Although, prior to the advent of Anti-Retroviral Therapy, Botswana was not successful in significantly reducing the advance of the epidemic, the existing primary care network has provided the infrastructure for rolling out Anti-Retroviral Therapy which is having a significant effect on reducing AIDS and AIDS related mortality.

It is the view of the Evaluation Team that Norway's assistance contributed positively to the development of the Botswana Health System. The Programme Approach to supporting the Botswana Health sector as a whole and the sustained period of the engagement contributed significantly to the success of the first phase of the Norwegian support (1975 – 1996). The development of a functioning primary care health system, to enable wide access for the people of Botswana, later supported by the development of central systems, notably the pharmaceutical supply system, which enabled the effective functioning of the primary care network, will have contributed significantly to improved health services delivery in Botswana and ultimately had an impact on health status. Following the advent of HIV/AIDS and the development of Anti-Retroviral Therapies, the existence of a functioning primary care network and a strong pharmaceutical supply chain enabled the delivery of an effective and widely accessible response for those infected with HIV.

Stakeholders were unanimous in the view that the Norwegian assistance to establish a functioning primary health care system was the most significant and beneficial contribution to the development of Botswana's health service. Similarly, the Norwegian support to develop an effective pharmaceutical supply network and their foresight in helping Botswana to develop an effective Oral Health Service were also seen as very significant contributions.

### **Efficiency**

A number of features of the implementation of the Phase 1 support would suggest that Norway's support was delivered in a cost effective manner. Norwegian assistance, during the period 1972-1996, took place in circumstances that are unlikely to ever be repeated in any other country in the future. A number of features of the assistance, unusual at that time, contributed to its success. The Norwegian assistance during Phase 1 was implemented as a Programme of Assistance rather than as projects:

- It followed Botswana's own planning priorities established through a transparent and participatory planning process.
- It was sector wide in that it addressed, to varying extents, the overcoming of key constraints to improve the effectiveness of the health system as a whole.
- It was flexible in that as one bottleneck was loosened, it moved on to address the next.
- It was implemented using the Government of Botswana's own procedures and systems with no separate project management structures.

It is to be noted that these features were in conformity with the Paris Accord of 2005 and the Accra agenda for Action (2008), but were implemented well in advance of those agreements.

Norway's Phase 2 activities were much less significant and appear to have suffered from a lack of clarity over goals and objectives. They were

designed in response to a new policy imperative within Norwegian Assistance and their design, while containing a number of useful sets of activities, was overly complicated in relation to the institutional capacity available to implement them. It was not possible to reach a conclusion on the efficiency of the Phase 2 inputs as there was a lack of clarity about the aims and objectives and anticipated outputs for most of the separate components that constituted this Phase. The evaluation team felt that the support suffered from a 'lack of clarity and confusion of concepts involved in its implementation' as identified in an earlier review of Norway's Institutional Cooperation programme.

### **Sustainability**

Botswana has an enviable health care system with high levels of access, even for the sparsely populated rural areas. It has functioning systems to manage this network of health facilities and also a well-functioning pharmaceutical procurement and distribution system that has been strong enough to cope with the very considerable increased demands placed on it by the HIV/AIDS epidemic. Norway had a significant role in the early development of these systems which have been largely sustained. Compared to many African countries, Botswana has been fortunate to have developed an economy that has been able to continue to support these systems and it has done so to a great extent.

During Phase 1 of the collaboration, Norway contributed to the development of an effective primary health care system in Botswana; this enabled the delivery of a number of basic health services to a large proportion of the population. This contributed to Botswana achieving high levels of coverage for various health service indicators such as immunisation rates and antenatal care, achievements that have been sustained to this day. At the same time various other factors, such as the greater wealth of the nation, universal primary education etc. were also improving, culminating in improved health status for the people of Botswana as reflected in the reduction of infant and child mortality and increased life expectancy at birth, until the HIV/AIDS epidemic reversed these positive trends. The sound Primary Health Care network has provided the basis for an extensive role out of Anti-Retroviral Therapy that will, it is hoped, result in an improvement in health status of the population in the future.

Norway's contribution during Phase 2 consisted of a series of disparate inputs, some seen as short term gap-filling and others with a more developmental focus. Sustainability of these inputs has been mixed with some evidence of policy initiatives developed with Norwegian support being implemented and sustained but other initiatives no longer evident.

## Recommendations

The Programmatic approach taken by Norway and the success of Botswana's health services during the period up to around 1990 in improving access to health and contributing to significant health gains over the period serves to reinforce the correctness of the approach recommended in the Paris Accord of 2005 and the subsequent Accra Agenda for Action (2008). Norway is a signatory to these agreements and the findings of this evaluation are that Norwegian development cooperation should conform to the agreements in future development cooperation activities.

While the starting point, shortly after Independence, in Botswana was very low, the extended period of collaboration between Botswana and Norway in the health sector has enabled Botswana to develop and entrench robust systems of health management and administration. These showed their capacity in helping Botswana respond to the AIDS epidemic in an effective way, developing and widely introducing a major Anti-Retroviral Therapy programme that would have been much harder without effective systems in place. It is the view of the evaluation team that developing and entrenching effective health systems takes time, longer than the normal project horizon of 3 – 5 years, and so where Norway hopes to assist other countries to develop comprehensive health systems it should expect to be involved for a lengthy period.

With regard to Botswana specifically, it is clear that the country's health system will face considerable problems over the coming years. Increasing demand for services, particularly the continued growth of the Anti-Retroviral Therapy programme and in the context of an economy that seems unlikely to continue to grow significantly, will place greater strains on the health sector. The country will need to adapt to make services more efficient and effective; a painful process of health sector reform seems likely to be necessary. In the absence of major bilateral development partners, the country may have difficulties accessing support for such internal reforms that have more in common with the health reforms being undertaken in the developed economies than in other African States. Given the long history of association between Norway and Botswana it could be beneficial to Botswana if the legacy of trust and understanding between health professionals in the two countries could be built upon to perhaps help Botswana undertake such

reforms. Given the economic strength of Botswana, this could no longer be done through the traditional donor – recipient relationship and the challenge is to find a way in which the Institutional Collaboration model, tested during Phase 2, could be made to work using different funding and implementation modalities. This deserves further exploration.

If some effective mechanism for collaboration can be developed, other technical areas for future collaboration might be in further work on quality improvement, collaboration over the analysis of epidemiological data, aspects of nutrition as well as efficiency and effectiveness of health services delivery.

While it is a relatively small component in the overall context of Norway's assistance to Botswana, the training of medical doctors has, to date, been singularly ineffective in increasing the number of Botswana doctors working in the Botswana public health sector. It may be beneficial to undertake some research to try to locate the ten 'missing' medical graduates from Norwegian Universities to see where they are and why they have not yet returned to Botswana. The lessons from this may be able to inform actions to improve the likelihood of the remaining students returning to Botswana when they graduate.

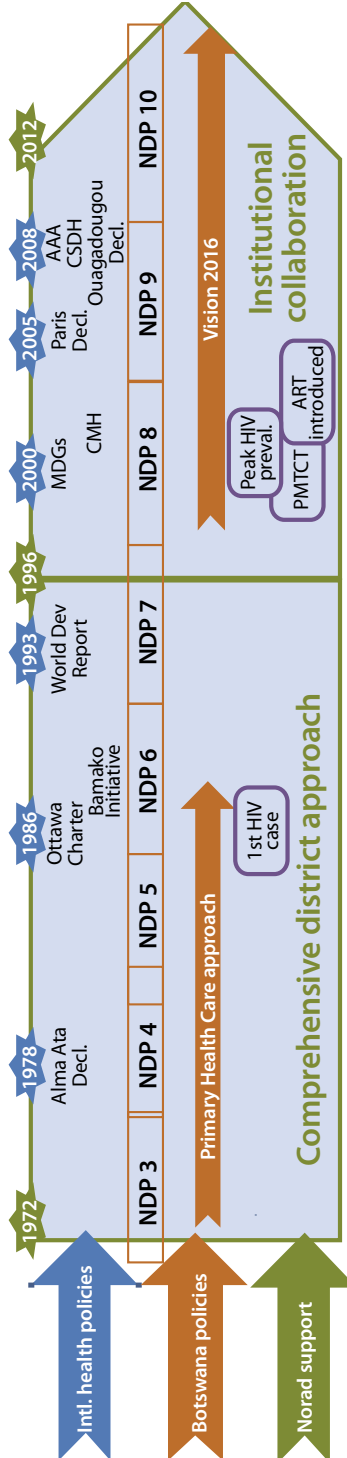
A lack of, or changing, formally stated objectives, anticipated outputs and indicators of achievement in the Norwegian supported activities, unsurprising in the context of a programmatic approach, presents challenges for an evaluation such as this one. In a programme approach, one would expect the Health Sector indicators to be used as the measure for judging the success of the support provided. To some extent it was possible to construct such an approach, post-hoc, for the Phase 1 Norwegian assistance, although the successive Botswana National Development Plans set relatively few formal targets for health sector achievements. This problem also affected Phase 2, however this was not a programme approach but nor was it a conventional project approach; it was an attempt by Norway to introduce a new Institutional Collaboration approach which seems to have other, perhaps higher objectives, than are usually found in a project. The lack of formally stated objectives, anticipated outputs and indicators of achievement made formal evaluation, using the OECD Development Assistance Committee (DAC) criteria, of the programme as a whole difficult. If formal evaluations are to be required, Norwegian development assistance should be clearer about what the objectives, anticipated outputs and indicators of achievement of their support are anticipated to be.

This evaluation was supposed, to an extent, to build on previous reviews and evaluations as a form of summary evaluation. These predecessor evaluations were of a variable value, partly due to the lack of clear objectives etc. for the programmes or projects they were evaluating. Although it is recognised that a number of the previous reviews and

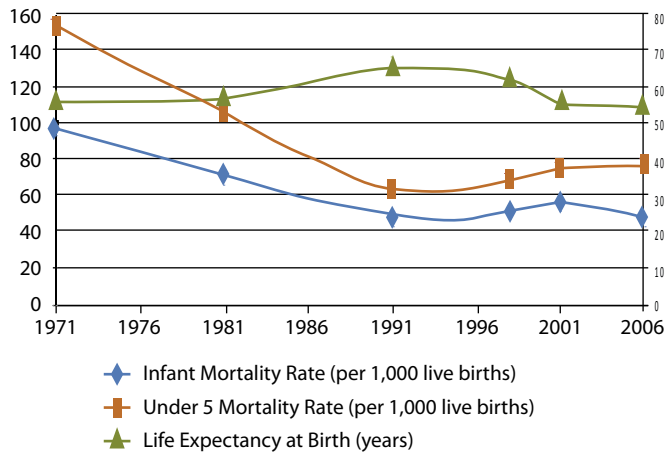


evaluations took place before the DAC evaluation criteria were formally adopted, none consistently used DAC principals for evaluation to enable a clear conclusion to be drawn about the various inputs. It might be worth considering that the TOR for future evaluations should clearly state the requirement that they be conducted using the DAC principals.

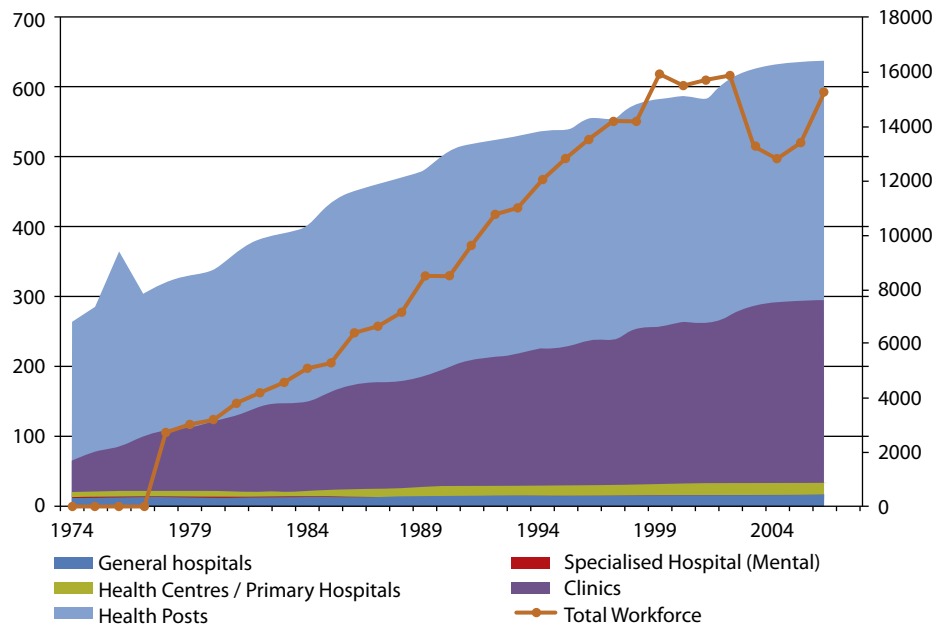
The following diagram attempts to encapsulate some of the key features of the Norwegian assistance in relation to some key events in Botswana and internationally over the period.



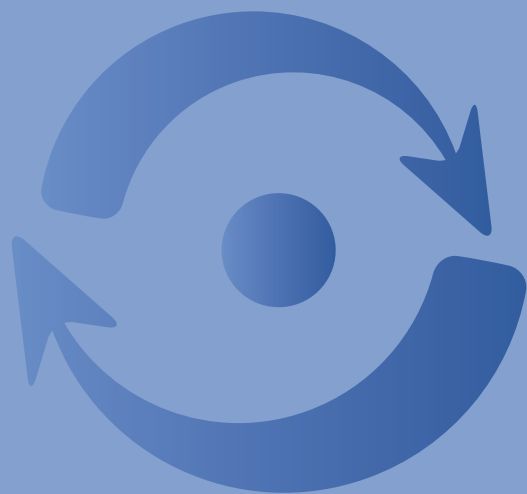
**IMR, U5MR and life expectancy**



**Number of facilities (by category) and total health workforce**



# Main Report





# 1. Introduction and Background

The Government of Norway has provided development assistance to the health sector in Botswana ever since 1972. Over this lengthy period, the assistance has changed to reflect both the changes in Botswana generally and to the Botswana health sector in particular. Early Norwegian support focussed on the development of Botswana's physical health infrastructure with the subsequent addition of technical assistance to enable a focus on service delivery and institutional strengthening. This continued until the 1990s when Norwegian support changed to focus on developing institutional links between Norwegian and Botswana organisations and, from 2004, to provide human resources to strengthen Botswana's capacity to combat the HIV/AIDS epidemic. Throughout the nearly forty years there has also been some support to address one of Botswana's key constraints, health human resources development.

In parallel to this external support, Botswana has made truly enormous strides from the immediate post-Independence State when it was characterised as a Least Developed Country, with very poor health status indicators and very limited health infrastructure to the situation today as an Upper Middle Income Country<sup>1</sup> with a wide network of health infrastructure and a health service that is considered amongst the best in Sub-Saharan Africa.

The Evaluation Department of Norad contracted HERA to undertake an evaluation of the Norwegian support to the health sector in Botswana over the period 1975 to the present day. The TOR for the evaluation (detailed in Volume II-Annex 3) indicate that the main purposes of the evaluation were to:

Document the outcomes and impacts of Norwegian health sector assistance both for the *users of health services* and for the *health care system* at large in Botswana.

Outline relevant lessons for design and implementation of future result-oriented health sector programs keeping in view the changing environment for health sector assistance programs in partner countries.

The evaluation took place between January – April 2011 with an inception visit to Botswana in February (see Inception report of 3 March 2011) and the substantive evaluation taking place in March and April. The results of the

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<sup>1</sup> As defined in World Bank <http://databank.worldbank.org>.

evaluation are presented as the main report and a series of Annexes. The Main Report (this document, Volume I) consists of information about the methodology and analytical framework used in the study (Section 2), the study findings (Section 3) and the study team's conclusions and recommendations (Section 4). The annexes (Volume II) include (i) a more detailed description of the study methodology, including instruments used, (Annex 1); (ii) evaluation programme and stakeholders interviewed (Annex 2); (iii) the evaluation Terms of Reference (Annex 3); and (iv) the detailed findings from the various sub-studies from which the content of the main report were derived (Annex 4).

## 2. Methodology and Analytical Framework

The Terms of Reference for the evaluation pose a hierarchy of questions:

What have been the main changes since 1975 in the health status of the individuals and communities and the health care system in Botswana?	What have been the inputs to the Botswana health system by the Norwegian Government and what have these achieved?
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1. To what extent has Norwegian assistance contributed positively to these changes in health status, and to what extent was the assistance used in a cost-efficient manner?



2. What conclusions can be drawn from the duration, nature and quality of the Norwegian support to Botswana?

In order to address this hierarchy, a two-stage process was planned for the evaluation with, in **Stage 1**, objective information being collected, primarily from secondary sources (Norwegian Government, Government of Botswana and other documents), but also field visits, to answer the TOR questions:

1. What have been the main changes since 1975 in the health status of the *individuals and communities* and the health care system in Botswana?
  - What has been Government of Botswana spending on the health sector?
  - What have been the developments in health status of the target groups for assistance?
  - What have been the developments in the clinical/non-clinical, governance and policy-making capacity at the local and the national levels of the health system in Botswana
2. What is the chronology of Norwegian assistance to the health sector in Botswana?

In order to have a coherent framework to address the first set of questions related to Norway's contribution to health status and health systems development in Botswana, a *post hoc* logical framework was constructed (Annex

1, Volume II). This Log Frame encompassed all known inputs<sup>2</sup> to the Botswana health sector by Norwegian assistance from 1975 to the present day. Based on our understanding of the nature of Norwegian inputs, the Log Frame organised the many Norwegian inputs according to the 'nine building blocks for health systems' as defined in the Ouagadougou Declaration<sup>3</sup>. The information available suggested that Norwegian assistance contributed to all of these nine building blocks, to a greater or lesser extent, at some stage over the 35 years of cooperation.

These Norwegian supported activities delivered outputs which in turn contributed to an outcome of 'Ensuring the provision of high quality health care to the population of Botswana, with strong emphasis on the rural populations'. This outcome in turn contributed to an assumed Impact of 'Improved health for the people of Botswana'.

The Evaluation team used this structure to define indicators for measuring progress at the Output, Outcomes and Impact levels. At Impact and Outcome levels, the indicators selected were ones that were currently available in Botswana and it was assessed that the evaluation would have a reasonable prospect of finding comparable data from previous years to monitor progress. Of course it was recognised that very few data series would go all the way back to 1975.

Given the long duration of the Norwegian support, as well as its flexible nature based on annual work plans rather than predefined outputs to be expected over a particular time frame, it was recognised that the Output indicators would be harder to monitor. However, it was anticipated that evidence of achievement against output targets would be assessed from the formal mid-term reviews and evaluations that have been undertaken, as well as other sources.

The second Stage 1 question relating to the chronology of Norwegian assistance to the health sector in Botswana was addressed through a review of both the archive documentation on the various Norwegian inputs over the thirty five years of the collaboration as well as the formal reviews and evaluations that were obtained.

These stage 1 questions were addressed through five interlinked sub-studies each focussing on a different aspect of the evaluation.

1. Finance (GOB Health Expenditure, Norwegian Assistance health project expenditure)
2. Health Status (Demographic and epidemiological changes 1975-2010)
3. Health Systems Development (health policy, infrastructure, human resources and system performance 1975-2010)
4. Stakeholders & Beneficiaries (Botswana and Norwegian)
5. Norwegian Projects/programmes (1975-2010)

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<sup>2</sup> Based on documentation made available from the Norwegian Assistance archives.

<sup>3</sup> WHO (2008): Ouagadougou declaration on Primary Health Care and Health Systems in Africa.



Annex 1 provides detailed information about the methodologies, instruments and sources used in each of these sub-studies with the detailed finding of each sub-study presented in Annex 4.

Stage 2 used semi-structured interview techniques to initiate stakeholder discussions (in person, by telephone and by email) with a variety of stakeholders, from both Botswana and Norway, who were involved in the design and implementation of the Norwegian assistance, to reach a judgement on the TOR questions:

To what extent has Norwegian assistance contributed positively to these changes, and to what extent was the assistance used in a cost-efficient manner? To what extent has the assistance:

- Impacted on improvements in the health of the target user groups for assistance?
- Been responsive to the needs and expectations of the target users groups for assistance?
- Impacted on the capacity of the Botswana health care system to fulfil its core functions to improve and safeguard the health of its population?
- To what extent have the improvements made at the user and the systemic levels prior to the onset of the HIV and AIDS epidemic contributed to the capacity of the Botswana Health Systems to handle the epidemic?
- What has been the impact of the HIV and AIDS epidemic on the time-path of the results of Norwegian assistance?
- What are the stakeholder perceptions of the achievements and limitations of Norwegian assistance?
- How important has the long-term character of the Norwegian engagement been in bringing about the changes in the health status of beneficiaries?

The responses from the Norwegian and Botswana informants are synthesised in Annex 4.

Finally the team reviewed the findings of these preliminary stages in order to suggest conclusions relating to the final TOR question 'What lessons can be outlined regarding targeting of assistance and the capacity development of the health care system in general?' The findings and conclusions were tested during a 'work-in-progress' seminar with relevant stakeholders in Botswana towards the end of the assignment and adjusted to reflect the suggestions proposed during the seminar.

In evaluating the contribution of Norwegian assistance to the Botswana health sector, the DAC evaluation criteria of relevance, effectiveness, efficiency and sustainability were used.

Relevance: to what extent has Norwegian support responded to the needs of the Botswana health sector as these have changed over the decades of collaboration? Were the correct choices made? In this context it was important

to note that thinking on what is necessary to improve health and health systems has changed significantly over the last 35 years. Thus what was considered a correct approach in 1980 may have less validity today. The Evaluation attempted to judge events in the long history of Botswana/Norway cooperation not just on the basis of what we know today but also the prevailing development thinking of the time.

Effectiveness: To what extent were defined outputs achieved as planned? Did these outputs contribute towards achieving the goals set by the Botswana health sector? What has the health sector, with the support of Norway, achieved (or not achieved) vis-à-vis its strategic objectives and expected outputs? How have health systems, organisational structures, infrastructure and human resources developed to achieve the country's objectives? What role has Norwegian support had in designing and/or supporting these developments? How has Norwegian support influenced national policy, and policy implementation?

Efficiency: Based on available secondary data, the evaluation attempted to assess how efficient the delivery of Norwegian assistance, in terms of outputs achieved relative to the means provided, has been. Did Botswana get value for the money provided by Norway? Could Botswana have got more outputs for the same level of inputs financed through Norwegian Assistance (or the same level of outputs with fewer inputs financed through Norwegian Assistance)? Are there outputs/outcomes that are more correlated to the Norwegian approach (i.e. alignment and harmonisation) than to the amount of funds provided?

Sustainability: The major inputs of Norwegian support were examined for evidence of sustained benefit. The health buildings constructed and equipped – are they still functioning; the staff trained – are they now still working in the Botswana health sector; the health systems developed (e.g. district health systems, dental services, maintenance) - are they still relevant and supported?

Limitations of the studies: The study was based primarily on the use of secondary data, and thus was only as reliable and complete as the original data sources. We have noted where obvious anomalies were identified. The data collected to measure health and health services performance has grown significantly since the 1970s which means that not all data series extend back over the full period of study. In addition there have been changes in data recording methodologies over the long period of time. For example, in 2004 the MOH introduced the International Classification of Diseases (10<sup>th</sup> Edition) (ICD10) for the reporting of morbidity and mortality data from health facilities, making comparisons with earlier years more difficult. Similarly, new data collection tools for the health facilities have been introduced over the period. As far as possible the Evaluation tried to use the same information source for each variable.

Given the fact that health status is the end result not only of health care provision but of many other intervening factors (notably education and wealth as well as HIV/AIDS), and there are many other players and factors involved in the development of health systems and services, we assumed that it would not be

possible to isolate a direct causal effect to changes in health status in Botswana to the Norwegian collaboration. Thus the effect of Norway's contribution to health service development, and by extension the health of the people of Botswana, would be a matter of judgement. The views of key stakeholders, both Botswana and Norwegian, were used to come to this judgement.

While the Evaluation Team were able to get the views of a range of stakeholders, extending right back to the beginning of the Norway – Botswana collaboration, we are aware that we were only able to contact a limited number of these key stakeholders and that, for some, a considerable time had elapsed since those early years, and their recollection of the events may have faded. It was, of course, easier to find stakeholders with experience of the more recent collaborations than those involved in events on the 1970s, particularly individuals involved as decision makers at the time.

Only a small number of formal evaluations or reviews of the Norwegian assistance were located<sup>4</sup>:

Per Granberg and J.J.Parkinson (Editors)	1988	<i>Botswana: Country Study and Norwegian Aid Review 1988.</i>	Chr. Michelsen Institute, Norway.
Fjelland, S, et al	1990	<i>A Joint Botswana Norwegian Project Review of NORAD Assistance to the Health Sector</i>	Unpublished document Norad Archive
Moeti, T., P. Leepile, T.Hetland & L.Lundgren	1998	<i>Final Report on the Mid-Term Review of the Health Sector Agreement between Norway &amp; Botswana.</i>	MOH & Norad
Maphorisa KJ. & M. Lauglo	2007	<i>Human Resource Assistance Programme BOT 2201: Mid-Term Review 2007.</i>	Norad Collected Reviews 21/2007

A number of problems meant that a detailed evaluation of Norwegian Assistance projects, particularly those that were implemented several decades ago, was difficult:

- The early programmes appear to have been planned with flexibility in mind such that while the agreements defined the inputs (funds, human resources etc.) and outputs anticipated (health facilities etc. constructed) there is no definition of the anticipated outcomes (e.g. improved access to care, increased immunisation rates) and only a broad definition of the ultimate goal of the aid (better health) with no indicators defined for either outcomes or goals.
- The flexibility of these early programmes enabled an annual programme of activities to be agreed, within the overarching framework of the agreed

<sup>4</sup> The Evaluation TOR indicate that further Programme Evaluations took place in 1994 and 1996 however reports of these evaluations were not located.

National Development Plan (NDP) activities. No end of programme reports have been located for these early construction projects that report exactly what was done over the programme life. Thus there is no simple way of checking that the number of facilities that it was agreed would be built or renovated were actually built.

- This is compounded, again by the flexibility in the overall approach, whereby later separate Norwegian Assistance programmes just carried on the inputs and outputs of the earlier ones such that it is not possible to distinguish between the outputs of earlier and later phases of the same programmes or later programmes.
- The later programmes (the Health Sector Agreement BOT2202 and the Human Resources Assistance to the Botswana MOH for ARVs) were also flexibly implemented with a variety of goals, outcomes and outputs defined in different documents as the programmes were implemented.
- The four reviews identified do not use the DAC<sup>5</sup> criteria of relevance, effectiveness, efficiency and sustainability as the basis for their review, although the 2007 MTR on BOT2201 does use relevance and sustainability. This may be at least partly because the programmes were designed without clearly defined goals or anticipated outcomes with indicators, making it hard to objectively measure such things.

Botswana is very well endowed with useful data records that were available to the Evaluation Team in libraries in the Ministry of Finance and Development Planning (MFDP), the Central Statistics Office (CSO) and the Ministry of Health (MOH). The Evaluation Team did not have the time to carry out an in-depth analysis of the information made available. Primarily we undertook a descriptive analysis of the trends in the data with qualifications, where appropriate, and supplementary commentary based on information provided by key informants.

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5 The DAC criteria have been in use by DAC since 1986; however the OECD DAC Quality Evaluation standards were only formally introduced in 2006.

## 3. Findings

### 3.1 International Health Developments

Health sector development in Botswana has taken place in the context of a number of global initiatives that have affected thinking about health and health services. The major international trends that had an impact on the thinking of development and health professionals between 1975 and 2010 are discussed below. The response by the health sector in Botswana to some of these international trends is discussed in Annex 4.

The first major international initiative in the health sector during this period was the **Alma Ata Declaration** of 1978<sup>6</sup> in which the concept of Primary Health Care was put forward and widely accepted internationally as an appropriate model for the development of health services. Subsequent debate focussed on whether PHC should be 'selective' or 'comprehensive'. This entailed discussions over whether PHC should encompass the delivery of a core set of health services, usually to include certain key elements such as vaccinations, ante-natal and maternity care, or whether a fully comprehensive service should be offered.

Amongst the strategies proposed by WHO to implement 'Health for all by 2000', the idea of reviewing administrative systems to ensure coordination of services at local, intermediate and central levels was suggested, re-introducing the concept of **decentralisation** of authority for health services management to lower tiers of government<sup>7</sup>.

The **Ottawa charter on health promotion**<sup>8</sup> (1986) emphasised a commitment to health promotion as a mechanism for achieving equity in health. This recognised the need to address the many external factors that have a significant effect on community and individual health with health promotion being used to reduce differences in health status. Equal opportunities and access to resources would enable all people to achieve their fullest health potential. This included a supportive environment, access to information, life skills and opportunities for making healthy choices.

In 1987, the **Bamako Initiative**<sup>9</sup> was based on the realisation that, despite accepting the core tenets of comprehensive primary health care, by the late 1980s many countries – especially in sub-Saharan Africa – were burdened by a lack of both resources and practical implementation strategies. The Bamako

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6 [http://www.who.int/hpr/NPH/docs/declaration\\_almaata.pdf](http://www.who.int/hpr/NPH/docs/declaration_almaata.pdf).

7 WHO (1979).

8 [http://www.who.int/hpr/NPH/docs/ottawa\\_charter\\_hp.pdf](http://www.who.int/hpr/NPH/docs/ottawa_charter_hp.pdf).

9 [http://www.unicef.org/sowc08/docs/sowc08\\_panel\\_2\\_5.pdf](http://www.unicef.org/sowc08/docs/sowc08_panel_2_5.pdf).

Initiative aimed to increase access to PHC by raising the effectiveness, efficiency, financial viability and equity of health services. Bamako health centres implemented an integrated minimum health-care package in order to meet basic community health needs, focusing on access to drugs and regular contact between health-care providers and communities. This was based on the concept that communities, through village committees, should participate directly in the management and funding of essential drug supplies.

The **World Development Report** of 1993<sup>10</sup> advocated a three-pronged approach to government policies for improving health in developing countries. First, governments were encouraged to foster growth policies that ensured income gains for the poor and to expand investment in schooling, particularly for girls. Second, the report encouraged governments to consider the cost-effectiveness of health programs with an emphasis for government health expenditure on low-cost, highly effective programs such as control and treatment of infectious diseases and of malnutrition that would do more to help the poor. Finally, governments were encouraged to promote greater diversity and competition in the financing and delivery of health services. While retaining a role in the provision of public health and essential clinical services, it was suggested that Governments should be concerned with the regulation of the health sector with an enhanced role for private finance, usually mediated through insurance, or social insurance, to pay for the coverage of remaining clinical services.

As the new millennium approached, there was recognition of the failure to achieve all that had been hoped for in the development of many countries. The General Assembly of the UN established the **Millennium Development Goals**<sup>11</sup> (2000), a mechanism by which countries would establish, for themselves, a series of goals in a variety of areas including health, to be achieved by 2015 and which each country is required to report on periodically to demonstrate achievements. This had the effect of focussing much external assistance to developing countries to help them achieve their MDGs.

The **Commission on Macroeconomics and Health** (2001)<sup>12</sup> was established by WHO in January 2000 to assess the contribution of health to global economic development. The Commission concluded that health is both a creator and pre-requisite of development and stressed that extending the coverage of health services and a small number of critical interventions to the world's poor could save millions of lives, reduce poverty, spur economic development, and promote global security.

Collectively these international initiatives resulted in health sector development being considered within a conceptual framework of equity and the fight against poverty. It also placed health economics at the heart of health sector development with an increased emphasis on measuring the performance of health sectors and issues of cost effectiveness and efficiency within the health

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10 <http://files.dcp2.org/pdf/WorldDevelopmentReport1993.pdf>.

11 <http://www.un.org/millennium/declaration/ares552e.htm>.

12 <http://www.who.int/trade/glossary/story008/en/index.html>.

sector supporting the concept of an **Essential Package of Care** to be guaranteed by governments either through direct services delivery or public-private collaboration.

While not specific to the health sector, the **Paris Declaration** (2005), and the **Accra Agenda for Action**<sup>13</sup> (2008) which built on it, called for joint progress toward enhanced Aid Effectiveness. This included:

- Ownership - Developing countries set their own strategies for poverty reduction, improve their institutions and tackle corruption;
- Alignment - Donor countries align behind these objectives and use local systems.
- Harmonisation - Donor countries coordinate, simplify procedures and share information to avoid duplication.
- Results - Developing countries and donors shift focus to development results and these results get measured.
- Mutual Accountability - Donors and partners are both accountable for development results.

The increased emphasis on improving performance as a result of the need to deliver on country MDGs brought about the advent of several new funding mechanisms that together brought public and private sector contributions to particular aspects of health sector development. The **Global Alliance for Vaccines & Immunisation** (GAVI-2000), the **Global Fund to fight AIDS, TB and Malaria** (2002), and **U.S. President's Emergency Plan for AIDS Relief** (PEPFAR - 2008) each brought significant additional funds to focus on achieving country MDGs and also an increased emphasis on demonstrating the achievement of results.

The **WHO Commission on Social Determinants of Health**<sup>14</sup> reported in 2008, providing a synthesis of the global evidence on the social determinants on health and their impact on health. Their conclusion that it is factors in the social environment that determine access to health services and influence lifestyle choices in the first place reemphasised the importance of poverty and inequity in determining health outcomes.

Most recently, the member States of the WHO African Region issued the **Ouagadougou Declaration**<sup>15</sup> (2008) in which the principles of the Declaration of Alma-Ata were reaffirmed, particularly in regard to health as a fundamental human right and the responsibility that governments have for the health of their people. The need for accelerated action by African governments, partners and communities to improve health was called for as was a reaffirmation of the importance of the involvement, participation and empowerment of communities in health development in order to improve their well-being. The importance of a concerted partnership, in particular, civil society, private sector and development partners to translate commitments into action was recognised.

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13 [http://www.oecd.org/document/18/0,3343,en\\_2649\\_3236398\\_35401554\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/18/0,3343,en_2649_3236398_35401554_1_1_1_1,00.html).

14 [http://www.who.int/social\\_determinants/thecommission/finalreport/en/index.html](http://www.who.int/social_determinants/thecommission/finalreport/en/index.html).

15 [http://www.unicef.org/wcaro/WCARO\\_Mtgs\\_OuagaDec-eng.pdf](http://www.unicef.org/wcaro/WCARO_Mtgs_OuagaDec-eng.pdf).

## 3.2 Health Status in Botswana 1975-2010

<b>Goal : Improved health for the people of Botswana</b>										
<p>The population of Botswana has tripled since Independence. However, since 1991 the rate of population growth has been declining as has the total fertility rate (which has declined rapidly). After continuous increases in life expectancy at birth since Independence up to 1991, life expectancy at birth declined in 2001 to the levels of 1971, with a further decline in 2006. Since 1991 the crude death rate has increased. The increase in mortality rates and reduced life expectancy at birth are largely due to the impact of HIV and AIDS. Additionally, HIV and AIDS have affected the age profile of the Botswana population.</p> <p>Botswana has had some success in halting the HIV epidemic, the prevalence amongst young women has fallen, an indication that incidence amongst this group has also fallen. Overall prevalence rates are still likely to rise due to the successful ARV programme.</p> <p>After early successes against TB, the HIV epidemic has brought with it a resurgence of this disease with the emergence of multi-drug resistance and extensively multi-drug resistance strains of the disease being a cause for great concern.</p> <p>Botswana would appear to have exceeded its target for reducing the incidence of malaria in its population.</p>										
<b>Indicator</b>	<b>Evaluation conclusion</b>									
Life Expectancy increased	Life expectancy improved from 1971 to 1991, but then declined to the levels of 1971 in 2001 with a further decline in 2006.									
Infant Mortality Rate reduced to 27/1,000 by 2011 ( <u>Baseline</u> : Year 1973-1977, 57.3/1,000, Family Health Survey II, 1988 )	The infant mortality of 48 per 1000 is at the same level as the 1991 level, but is lower than the Baseline.									
<5yrs Child Mortality Rate reduced to 21/1,000 by 2011 ( <u>Baseline</u> : Year 1973-1977, 88.62/1,000, Family Health Survey II, 1988)	The U5MR of 76 per 1,000 is higher than the 2001 level, but is lower than the Baseline.									
Maternal Mortality Rate reduced to 150/100,000 by 2011 ( <u>Baseline</u> : 2005, 380/ 100,000 live births, WHO, UNFPA, UNICEF and The World Bank, 2007)	The Maternal mortality ratios have been reduced from 326/100,000 live births in 1991 to 193 /100,000 live births in 2007.									
Incidence of HIV, particularly amongst the youth, halted and reversed by 2016 (Botswana Millennium Development Goals, Status Report 2010, Ministry of Finance and Development Planning, GOB, United Nations)	Prevalence: <table border="1"> <tbody> <tr> <td>Pregnant women</td> <td>1998: 28.6%</td> <td>2007: 17.2%</td> </tr> <tr> <td>15-19yrs Pregnant women</td> <td>2003: 37.4%</td> <td>2006: 32.4%</td> </tr> <tr> <td>15-49yrs All Adults</td> <td>2003: 31%</td> <td>2005: 28%</td> </tr> </tbody> </table>	Pregnant women	1998: 28.6%	2007: 17.2%	15-19yrs Pregnant women	2003: 37.4%	2006: 32.4%	15-49yrs All Adults	2003: 31%	2005: 28%
Pregnant women	1998: 28.6%	2007: 17.2%								
15-19yrs Pregnant women	2003: 37.4%	2006: 32.4%								
15-49yrs All Adults	2003: 31%	2005: 28%								
Morbidity and mortality caused by TB reduced. ( <u>Baseline</u> incidence of TB: 431.4/100,000: MOH Report 1976)	The anticipated morbidity and mortality reduction has not been achieved. Morbidity and mortality due to TB has increased in recent years mainly due to HIV/AIDS. In 2008 there were 712 cases of TB per 100,000 population.									
The incidence of confirmed malaria reduced to below 20 cases per 1,000 people. (Botswana Millennium Development Goals, Status Report 2010, Ministry of Finance and Development Planning, GOB, United Nations)	In 2006 there were 1.5 confirmed cases of malaria per 1,000 population.									



### 3.2.1 Population and demographic trends

Botswana's population nearly tripled during the period 1971-1991 (Table 1). The country's population went from 574,000 inhabitants in 1971, to 1,680,863 in 2001 and is projected to grow to nearly 1,950,000 by 2016. The high rate of population growth of the 1970s and 1980s has, however, been declining (from 3.5% between 1981 and 1991; 2.4% from 1991 to 2001; 1.17% from 2001 to 2006; and is projected to be 1.2% in the period 2006-2011)<sup>16</sup>. This trend of a falling growth rate is projected to continue until 2016.

**Table 1 – Botswana, Demographic indicators, 1971-2006**

Population Characteristics	Census 1971	Census 1981	Census 1991	Census 2001	BDS 2006	Projections 2011-2016
<b>Enumerated population</b>	574,094	941,027	1,326,796	1,680,863	1,773,240	1,947,806
<b>Pop. Distribution (%)</b>						(2016)
<b>0-4</b>	17.6	18.8	14.6	11.6	12	11.5
<b>5-14</b>	29.9	28.8	28.6	25	23.4	20.8
<b>15-64</b>	46.9	47.6	51.8	58.2	58.2	63.6
<b>15-49</b>	39.4	40.8	45.5	52	52.3	56.2
<b>65+</b>	5.6	5.1	4.9	5	5	4.1
<b>Percentage urban</b>	9	17.7	45.7	54.2	59.6	
<b>Population density (per km)</b>	1	1.6	2.3	2.9	3	
<b>Crude birth rate (per 1,000)</b>	45.3	47.7	39.3	28.9	29.7	24.8
<b>Crude death rate (per 1,000)</b>	13.7	13.9	11.5	12.4	11.2	11.9
<b>Natural rate of increase (% per annum)</b>	3.1	3.4	2.7	1.7	1.9	1.29
<b>Total fertility rates (births per woman)</b>	6.5	6.6	4.2	3.3	3.2	
<b>Infant mortality rate (per 1,000 live births)</b>	97	71	48	56	48	30.8
<b>Under 5 mortality rate (per 1,000 live births)</b>	152	105	63	74	76	
<b>Life expectancy at birth (years), all population</b>	55.5	56.5	65.3	55.7	54.4	
<b>Males</b>	52.5	52.3	63.3	52	48.8	
<b>Females</b>	58.6	59.7	67.1	57.4	60	

Source: National Development Plan 10; National Censuses 1971, 1981, 1991 and 2001; 1998 and 2006 Botswana Demographic Surveys; Central Statistics Office, Republic of Botswana; CSO Population Projections for Botswana: 2001-2031, consulted on 18 March 2011 at [www.ub.bw/ip/documents/2008\\_Population\\_Projections](http://www.ub.bw/ip/documents/2008_Population_Projections).

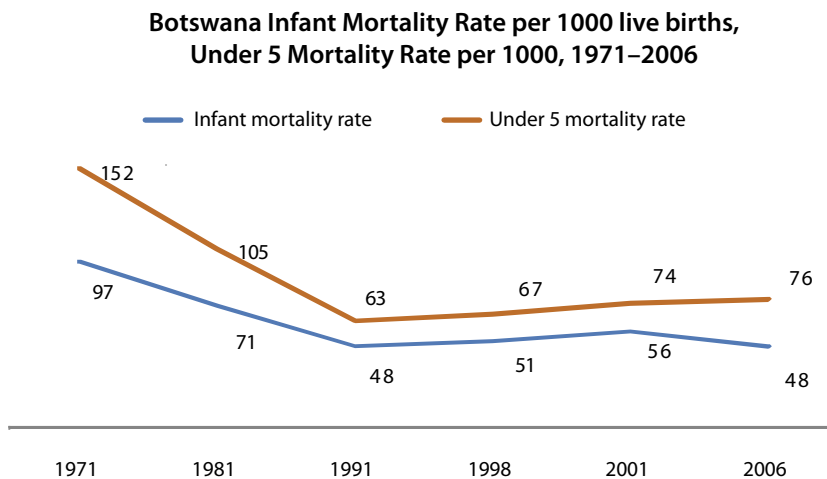
<sup>16</sup> Population growth rates for the years 2001-2006 and 2006-2011 taken from CSO Population Projections for Botswana: 2001-2031, consulted on 18 March 2011 at [www.ub.bw/ip/documents/2008\\_Population\\_Projections](http://www.ub.bw/ip/documents/2008_Population_Projections).

During the period 1971-1991, Botswana had both a high birth rate and declining mortality rates, however in the following years, declining trends in fertility rates and increasing mortality rates were observed. The total fertility rate declined rapidly from 6.5 children per woman in 1971, to 4.2 in 1991 and 3.2 in 2006<sup>17</sup>.

The period from Independence up to 1991 was also characterised by sustained declines in mortality rates. This trend was reversed from 1991 when the crude death rate increased from 11.5 to 12.4 per 1,000 in 2001 but fell again to 11.2 per 1,000 in 2006 (close to the 1991 level).

Infant and child mortality rates were decreasing up to 1997 but since then these gains have been reversed (Graph 1), mainly due to high HIV/AIDS prevalence. IMR increased from 48 per 1,000 in 1991 to 56 per 1,000 in 2001 before falling again by 2006 to 48 per 1,000 (the same level as the 1991 level). The Under 5 mortality rate also rose from 63 per 1,000 in 1991 to 74 per 1,000 in 2001 but continued to rise, up to 76 per 1,000 in 2006. The aim of the GOB is to reduce infant mortality rate to 27/1,000 and to reduce under-five mortality rate to 21/1,000 by 2011. There is still an important gap to achieve these goals. Among others, teenage child-bearing and unsafe abortions contribute to these high mortality rates.

**Graph 1 – Botswana, Infant and Under 5 Mortality Rate per 1,000 live births, 1971-2006**

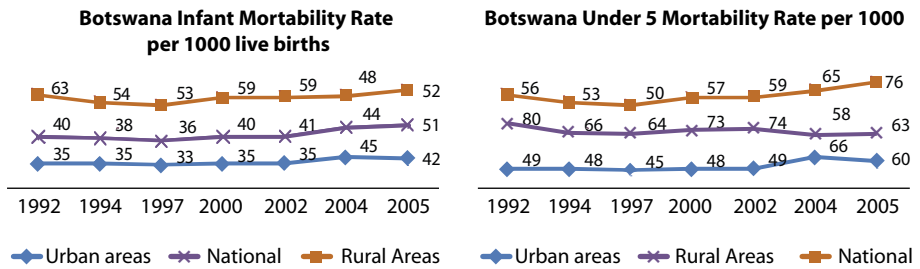


Source: National Censuses 1971, 1981, 1991 and 2001; 1998 and 2006 Demographic Surveys, CSO.

There are mortality differences between the rural and urban areas. Infant and under five mortality appears to be higher in rural than in urban areas (Graph 2). For example, for the year 2005 infant mortality rates for urban and rural areas were estimated at 42 and 52 per 1,000 lives respectively (BDHS 2006).

<sup>17</sup> This decline has been so rapid that the total fertility rate is now lower than the stated population policy target of reducing fertility to 3.4 by 2011.

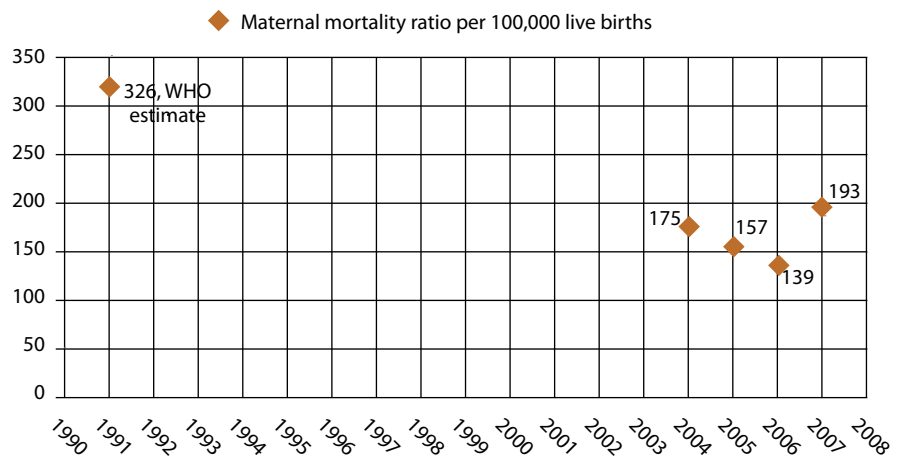
**Graph 2 – Botswana, Infant and Under 5 Mortality Rates by place of residence**



Source: Botswana Demographic Survey 2006, CSO.

The Maternal Mortality Ratio (MMR) has decreased but remains high in spite of a high proportion of births attended by skilled health personnel (97% in 2000 and 96% in 2003). The MMR fell from 326/100,000 in 1991 to 193/100,000 live births in 2007<sup>18</sup>. The goal of the GOB is to reduce maternal deaths to 150/100,000 live births by 2011.

**Graph 3 – Botswana, Maternal Mortality Ratio, rate per 100,000 live births, 1991 & 2004-2007**



Source: Data for 2005 – 2007: Stats Brief, Issue 8, CSO, October 2008. Data for 1991, 2004 WHO Botswana Country Cooperation Strategy 2008-2013.

Note: 1991 information on Maternal Mortality was the earliest data found.

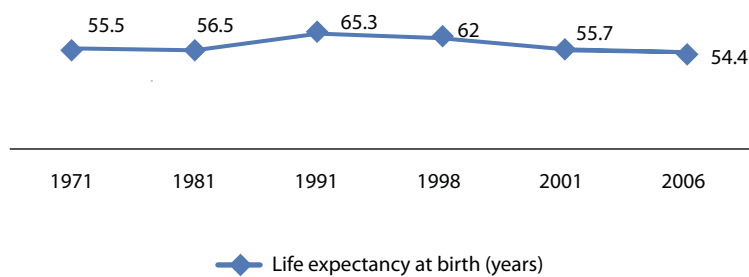
According to UNFPA (2009), contributing factors to the high number of maternal deaths include: a lack of skilled personnel to manage obstetric complications; stock-outs of essential equipment and drugs due to weak logistics management; weak referral systems, especially in rural and geographically remote areas; insufficient community mobilisation and engagement; high teenage pregnancy and unsafe abortion rates. Additionally, the high prevalence of HIV and AIDS among women in the reproductive age group is another factor contributing to the high number of maternal deaths. HIV related complication accounted for about

<sup>18</sup> The MOH has required all health units to report maternal deaths in order to improve monitoring of such deaths. It is thought that this is the reason for an apparent rise in MMR from 2006 to 2007.

30% of total maternal deaths during 2005 and 2006 but dropped to 9.8% in 2007, presumably as a result of PMTCT.

These increases in mortality rates have impacted on life expectancy at birth. After recording continuous improvements in life expectancy at birth, from 55.5 years in 1971 to 65.3 years in 1991, life expectancy had, by 2001, declined again to the levels of 1971, with a further fall by 2006 (Graph 4). The increase in mortality rates and reduced life expectancy at birth are largely due to the impact of HIV and AIDS.

**Graph 4 – Botswana, Life Expectancy at Birth (years), 1971-2006**



Source: National Censuses 1971, 1981, 1991 and 2001; 1998 and 2006 Demographic Surveys, Central Statistics Office, Republic of Botswana.

These changes in fertility and mortality rates have affected the age profile of the Botswana population, particularly in the youngest age groups. In 1981 the 0-14 years age group represented 47.6 % of the total population but by 2006 it represented only 35.4%. This decline in the proportion of the population under 15 years is due to the combined effect of increased child and mortality rates due to HIV/AIDS, and a lower fertility rate (among others due to the use of contraceptives among women of reproductive age, greater participation of women in the economy which encourages delay in first birth and use of contraceptives methods). The changes in the age structure of the population have several policy implications. The working age population (i.e. those aged 15-64) more than doubled between 1981 and 2006. An important segment of this population is made up of the youth who demand education, training and skills developments as they enter into the labour market.

The proportion of population living in urban areas has increased very significantly from just 9% in 1971 to 57.4 % in 2006. This has given rise to an increased demand for urban-based services such as housing, water and electricity.

### 3.2.2 Social trends

At the time of Independence in 1966, Botswana was one of the poorest countries in Africa, but there has been continuous economic growth since then with Botswana now being one of the richest. GDP growth has averaged 8.7% per year in the post-independence period (see Annex 4). Considerable development has taken place over this period resulting in increased access to education,

water, health services and roads. Despite these economic achievements, the country still faces serious problems of high poverty and unemployment. High rates of unemployment, approximately 20%, have persisted. Poverty rates have improved, falling from 49% in 1993/94 to 30% in 2002/03 and to an estimated 23% by the end of 2009. Despite some improvements, Botswana's income inequality is the fifth worst in the world (Gini coefficient of 60.5 %, UN ranking) (World Bank 2009). Women seem to be affected more by poverty. In 1993, 50% of female headed households were poor as compared to 46% of male headed households.

Household incomes are much lower in rural than in urban areas (HIES 2003) and, while rural poverty rates have fallen, they remain significantly higher than in urban areas. There are important differences in access to basic services between rural and urban areas. A brief description of developments in certain areas follows.

- *Poverty*

The immediate causes of poverty identified by the Botswana Institute for Development Policy Analysis (BIDPA 1996) include: unemployment and underemployment, which are primarily determined by lack of skills and education; HIV/AIDS, which takes people from work (patients as well as care providers), reduces accumulated wealth and creates new groups of vulnerable people; lack of access to productive assets such as land, water and finance; and lack of access to markets.

- *Education*

Education has been a key development priority for Botswana since Independence. Education is the single largest expenditure item in the Government budget, averaging more than a fifth of total expenditure<sup>19</sup>. Girls accounted for just over half of the gross enrolment in primary and secondary schools and slightly below half in tertiary institutions in both 1992 and 2002 (Government of Botswana 2004).

Botswana has achieved the goal of universal access to primary education. In 2004, the net enrolment rate for the primary school age group (i.e. those between 7 and 13 years of age) was 98.5%. Primary education is not compulsory, and no fees are charged in government primary schools<sup>20</sup>.

Table 2 presents the trend in the adult literacy rate according to indirect estimates in the national censuses (1981, 1991 and 2001) and the results of the two national literacy surveys in 1993 and 2003. This shows a doubling of literacy rates, rising from around 40% in 1970 to over 80% in 2003. In 2007/08 the literacy rates was 83% (MFDP – NDP 4).

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19 Calculated by Team from MOFDP budget data.

20 During NDP 9 the government re-introduced fees at secondary and tertiary levels.

**Table 2 – Botswana, Adult literacy rates disaggregated by sex, 1970-2003**

Year	10–70 years			12–70 years			15–65+ years		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
1970	-	-	-	-	-	-	-	-	41% (1)
1971	-	-	-	-	-	-	-	-	40% (1)
1981	32%	36%	34%	-	-	-	-	-	-
1991	-	-	-	-	-	-	66.80%	67.70%	67.30%
1993	-	-	-	-	-	-	66.90%	70.30%	68.90%
2001	64.98%	69.82%	67.50%	-	-	-	69.90%	73.60%	71.80%
2003	75.30%	77.90%	76.60%	79.60%	81.80%	80.90%	80.40%	81.80%	81.20%

Source: Central Statistics Office/ Department of Non-Formal Education, 2004:15; (1) Presidential Task Group, 1997:14; (2) Youngman, F., 2001:5 Copied from Hanemann Ulrike, Literacy in Botswana, UNESCO Institute for Education, Hamburg, Germany, 2005.

- *Unemployment*

High rates of unemployment have persisted. The 1995/96 Labour Force survey reported an overall unemployment rate of 21.5%, for those individuals who were actively seeking work. Unemployment rates are high particularly among the youth. In 2006 (BDS 2006), 66% of those aged 15-19 were reported as unemployed and 55% for those aged 20-24. At that time the overall unemployment rate was 28%. Young people aged between 15 to 29 years are estimated to comprise 73% of those unemployed. Unemployment is higher for women for all age groups. Most (85%) of the unemployed had no training.

Higher education and low income from agriculture have resulted in young people leaving school and coming to the towns in search of jobs. This change in traditional employment has resulted in the high unemployment among the youth.

- *Access to safe water*

The country has made important efforts to secure access to improved sources of drinking water to its population. In 1996 (BFHS 1996), 77% of the population was using a safe source of drinking water. In 2007 (BDHS 2006), 96% of the population had access to improved sources of drinking water; however there are differences between urban and rural areas. While around 85% of the population in cities/towns and urban villages<sup>21</sup> draw their water from within their homes (indoor or outdoor pipe), only a third of the rural population draw water from these sources. About 45% of the population in rural areas draw water from community stand pipes (Table 3).

21 In 1991, 19 of Botswana's villages were classified as urban villages. The number of urban villages increased to 27 after the 2001 Population census. (BDHS 2006).

**Table 3 – Botswana, % distribution of household population according to main source of drinking water and % of household’s members using improved drinking water sources, 2007**

Drinking water	City/Town	Urban Village	Rural	Total
<b>Improved Sources</b>				
Piped indoors	48.1	19.7	6.7	20.1
Tap in yard	37.7	64.7	26.6	41.7
Communal tap	12.1	12.0	45.0	26.8
Borehole	0.0	0.0	9.3	4.2
Rain water tank	0.2	0.0	0.7	0.4
Bottled water from stores	0.4	0.4	0.3	0.3
Neighbors	1.3	3.1	2.7	2.5
<b>Total</b>	<b>99.8</b>	<b>99.9</b>	<b>91.3</b>	<b>96.0</b>
<b>Unimproved sources</b>	<b>0.2</b>	<b>0.1</b>	<b>8.7</b>	<b>3.9</b>

Source: 2007, Botswana Family Health Survey IV Report, CSO in collaboration with UNICEF, Gaborone, November 2009.

- *Access to sanitation facilities*

Inadequate disposal of human excreta and personal hygiene is associated with a number of diseases such as diarrheal and intestinal parasitic diseases. In Botswana, an important proportion of the population still has no access to improved sanitation facilities, however there have been significant improvements since 1981 (Table 4).

According to the 2007 BFHS IV, 20% of the population was using unimproved sanitation facilities. The rural areas have less access to sanitation facilities than urban areas. A flush toilet was used in 56% of households in cities and towns, in 21% in urban villages and in 8% of households in rural areas. The trend in access to sanitation facilities is presented in the table 4 below.

**Table 4 – Botswana, Access to sanitation facilities**

Access to sanitation	1981	2001	2006
% of households with ordinary pit latrine	n/a	25.0%	29.0%
% of households with flush toilets	8.6%	20.7%	23.0%

Source: Census 2001, BDS 2006.

- *Malnutrition*

Malnutrition is still present amongst children in Botswana (Table 5). Malnutrition is high for a country of Botswana’s economic status. Prevalence of malnutrition fell from 1996 to 2000, but then increased in 2007. In 2007, 25.9% of children under five were stunted and 7.2% wasted (BFHS IV 2007).

**Table 5 – Botswana, Nutritional status of children under five years of age (%)**

Nutritional Status of under-fives	1996 BFHS III	MICS 2000	2007 BFHS IV
<b>Underweight prevalence (proportion of under-fives who are too thin for their age)</b>	17	13	13,5
<b>Stunting prevalence (proportion of under-fives who are too short for their age)</b>	29	23	25,9
<b>Wasting prevalence (proportion of under-fives who are too thin for their height)</b>	11	5	7,2

Source: 2007, Botswana Family Health Survey IV Report, CSO, 2009.

In addition to protein-energy malnutrition, other nutritional problems in Botswana are related to micronutrient deficiencies such as Vitamin A, iodine and iron deficiencies and diet related non-communicable diseases (with the increased urbanisation, the eating habits of the population are also changing). The causes of nutritional problems include inadequate food intake, poor maternal and child caring practices, poverty, food taboos, lifestyles and predisposing diseases such as tuberculosis and HIV/AIDS.

### 3.2.3 Epidemiological trends

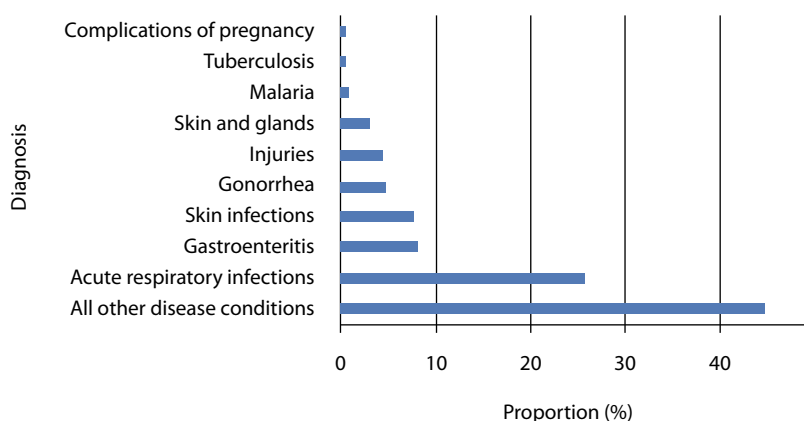
#### Appraisal report from Norad mission to Botswana, 1972

“After what we saw and heard there could be no doubt that tuberculosis is widespread. It is estimated that about 5 per cent of the population has a tuberculosis infection that needs some treatment...Venereal diseases like syphilis and gonorrhoea are also widespread... Communicable diseases like smallpox, measles, diphtheria, whooping cough, tetanus, etc. have to be fought by an intensive comprehensive immunisation programme along with improvement of hygiene... Gastrointestinal diseases were common. Especially amongst children these diseases were responsible for quite a number of deaths”.

The epidemiological profile of Botswana has changed since Independence. In the 70s and 80s (Graph 5) the main causes of illness and death were infectious diseases and diseases associated with poverty, inadequate hygiene and sanitation conditions. In the 70s the predominant diseases included respiratory tract infections, enteritis and other diarrhoeal diseases, tuberculosis, malaria, skin infections. Vaccine preventable diseases were also common. 1974 outpatient attendances (MOH 1974) were reported for measles, and pertussis (whooping-cough), but no cases of smallpox were reported, unlike the previous years; 30 cases of smallpox in 1973 and 1072 cases in 1972.



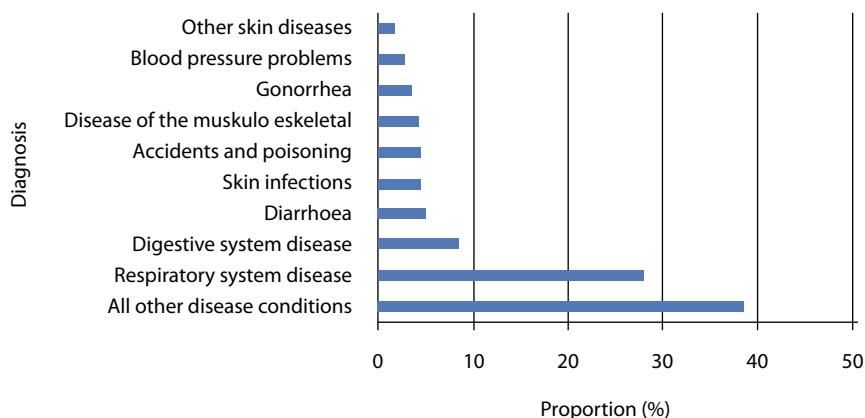
**Graph 5 - Botswana, Causes of outpatient morbidity, 1979**



Source: Medical Statistics 1978/1979, Medical Statistics Unit, Ministry of Health (1981).

Amongst other factors, with improvements in education and household income a new pattern of disease started to emerge in the late 80s (Graph 6). By 1986 diseases associated with affluent lifestyles and longer life expectancy, such as high blood pressure, began to be reported.

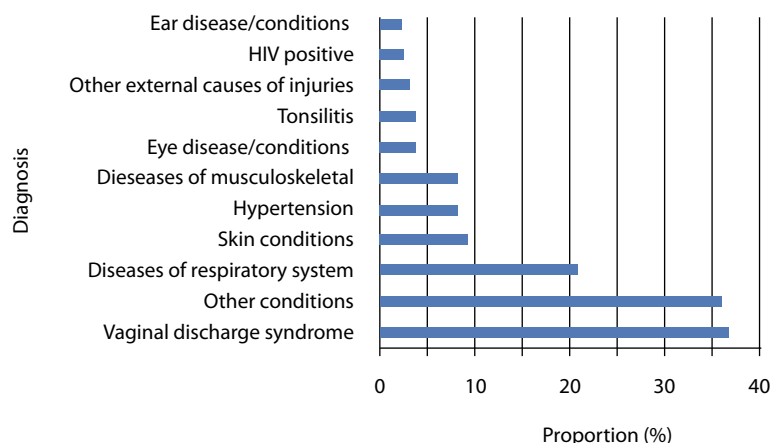
**Graph 6 - Botswana, Causes of outpatient morbidity, 1986**



Source: Health Statistics 1986, Health Statistics Unit, Ministry of Health (1993).

It was expected that without HIV/AIDs, cardiovascular diseases, metabolic diseases, malignancies, road traffic accidents and degenerative disorders would have overtaken infectious conditions as the main causes of morbidity before the end of the century. However, by 1998 diseases of poverty had re-emerged and co-existed with diseases of the developed world. Tuberculosis, malaria and diarrhoea have all re-emerged and by 2006 the epidemiological profile has changed, as shown below (Graph 7). Diseases of the respiratory system still represent an important proportion of causes of outpatient consultations along with other diagnoses such as hypertension, diseases of the musculoskeletal system, injuries and HIV.

**Graph 7 – Botswana, Causes of outpatient morbidity, 2006**



Source: Health Statistics Report 2006, CSO (2009).

The information system does not capture properly the role of HIV/AIDS in the observed pattern of outpatient consultations nor the true prevalence and increasing trend of non-communicable diseases (i.e. diabetes, stroke, cardiovascular diseases). A country wide survey (WHO 2009) carried out of persons aged above 50 revealed that 67% and 12.4% of respondents had hypertension and diabetes respectively.

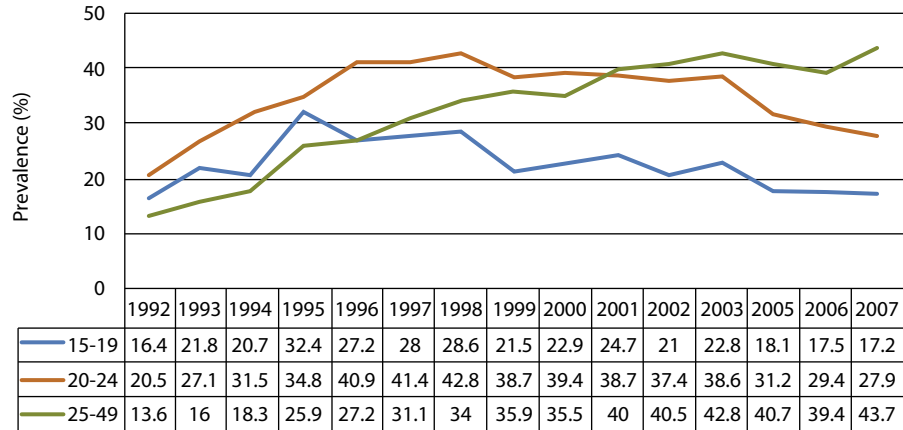
- *HIV/AIDS*

The first AIDS case was reported in Botswana in December 1985, and screening for HIV started in November 1986. Botswana now faces the second most severe HIV/AIDS epidemic in the world (after Swaziland) with stabilisation of the HIV prevalence rates at 17.6 % in 2008. A study by NACA (2008), projected that by 2009 there would be over 331,000 adults aged 15 years and above and 19,125 children between the ages 0-14 living with HIV in Botswana. The number of people on ARV therapy (ART) at the end of 2009 was 145,190, estimated to account for 89 per cent of those with advanced HIV infection in need of ART (NACA 2010). Heterosexual transmission is the main form of transmission. Contributing factors to the spread of the epidemic are the high incidence of multiple concurrent sexual partners, intergenerational sexual relationships, unprotected sex, poverty, vulnerability of women and high levels of population mobility (in and out of the country).

It seems that the extensive HIV and AIDS information, education and communication campaign promoted by the government has impacted on the behaviour of young people. HIV surveillance of pregnant women indicates that HIV prevalence peaked around the year 2000 and declined significantly by 2007 (MOH 2007). This decline was particularly important in the younger age group 15-24 years. Declining trends in HIV prevalence have been observed among young pregnant women, aged 15-19 years, with the prevalence rate for this group declining from 28.6% in 1998 to 17.2% in 2007. There has also been a recent fall in HIV prevalence among those aged 20-24, from 30.6 % in 2003 to 29.4% in 2006 (Graph 8). HIV prevalence among pregnant women aged 15-49 decreased

from 37.4% in 2003 to 32.4% in 2006. The decrease in HIV prevalence in younger women would suggest that incidence is also falling.

**Graph 8 – Botswana, Trends in age-specific HIV prevalence among pregnant women 1992-2007**



Source: 2007 Botswana ANC Second Generation HIV/AIDS Sentinel Surveillance Technical Report.

The HIV prevalence rate for the adult population of reproductive age (i.e. those between 15-49 years of age) was 29% in 2002, 31% in 2003 and 28% in 2005 (MOH 2007).

HIV prevalence remains high. In part, this is due to a positive impact that the availability of free Anti-Retroviral (ARV) therapy has had in prolonging the lives of people living with HIV.

- *Diarrhoea and respiratory diseases among children*

Diarrhoea and respiratory diseases are frequent amongst children in Botswana. Prevalence of diarrhoea amongst children under five stayed at approximately 10% between 1988 and 1996. By 2007 the prevalence was almost double the 1996 prevalence<sup>22</sup> (Table 6); the report that provided this data provided no explanation for the reported increase. The use of oral rehydration salts (ORS) is widely known among the population and ORS are available and widely distributed to mothers by health staff. In 2007, more than 80% of children who had diarrhoea were treated with ORS or appropriate household solution.

Pneumonia continues to be a frequent event amongst young children in Botswana with approximately 23% of children under five having suspected pneumonia in the last four weeks (BFHS IV 2007) (Table 6).

<sup>22</sup> BFHS II, BFHS III, BFHS IV, table 7.

**Table 6 – Botswana, Prevalence of diarrhoea and respiratory diseases among children**

Indicator	1988 BFHS II	1996 BFHS III	2007 BFHS IV
Proportion of under five children who had diarrhoea during the two weeks prior to the interview	9.9	9.8	17.9
Proportion of under five children with suspected pneumonia, i.e. who had illness with a cough accompanied by rapid or difficult breathing and whose symptoms were due to problem in the chest and a blocked nose in the last four weeks	28.7	17.1	23.7

Source: as reported in 2007 Botswana Family Health Survey IV Report, CSO (2009).

Diarrhoea is also a cause for mortality for children under-five. The number of children reported as dying from diarrhoea steadily increased over the period 1998-2003 (Table 7). No explanation was found for this increase.

**Table 7 – Botswana, Number of reported cases of diarrhoea and number of deaths due to diarrhoeas in under-five population, 1998-2003**

Diarrhoea in under-five years of age	1998	1999	2000	2001	2002	2003
Number of reported cases of diarrhoea under-fives	69,042	63,298	64,375	64,591	58,085	57,550
No. Of deaths due to diarrhoea in under-fives	24	51	74	79	93	146

Source: Notifiable diseases reports, CSO, Botswana.

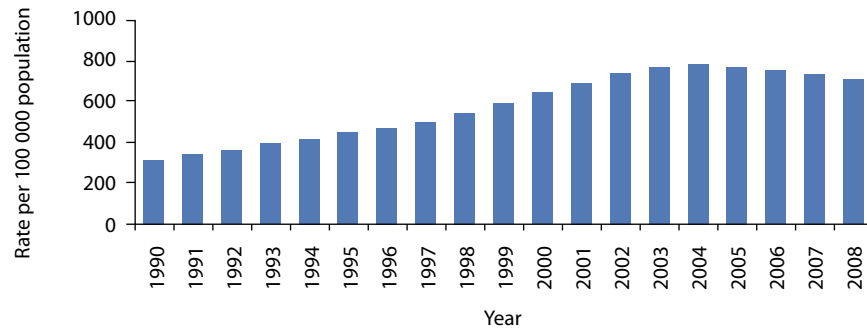
- *Tuberculosis (TB)*

In 1974, TB was considered “probably the worst Public Health problem in the country (MOH 1974)”. A total of 2,744 new cases were reported in that year for an incidence rate of 457/100,000 population. The first TB control programme for the country was designed in the same year and a vaccination campaign aimed at vaccination of the entire 0-14 year old population was launched. Today, TB once more represents an important public health problem. The number of TB cases per year has increased 211% since 1990. The incidence of tuberculosis per 100,000 people in Botswana was reported at 712 in 2008. An estimated 54% of new tuberculosis patients are HIV-positive and 38% of AIDS deaths are due to tuberculosis (WHO 2009). The resurgence of TB in the last two decades is mainly due to HIV/AIDS.

WHO (WHO 2009) reported that according to the Botswana National TB programme in 2005, there was a low cure rate of 38%, and a defaulter rate of 8.4%. Multi-drug resistance TB is emerging with surveys, carried out in 1996, 1999 and 2002, showing increasing multi-drug resistance prevalence rate of 0.2%, 0.6% and 0.8% respectively. Additionally, in 2008, Botswana's health authorities reported the first case of extensively drug resistance tuberculosis, a highly contagious strain first detected in the Southern Africa region.

Directly Observed treatment (DOT) coverage rate is estimated at 70% with a network of tuberculosis volunteers involved in provision of DOT at people's homes.

**Graph 9 – Botswana, Incidence of tuberculosis per 100,000 people, 1990-2008**



Source: <http://www.tradingeconomics.com/botswana/incidence-of-tuberculosis-per-100-000-people-wb-data.html>

- *Malaria*

Malaria is the main vector-borne disease in Botswana and is one of Botswana's 14 notifiable diseases. About 40-50% of the population is exposed to the risk of infection with malaria. The incidence of malaria is closely related to rainfall, which varies considerably from year to year, with major epidemics occurring in years of heavy rainfall. The northern zone has a high transmission rate and accounts for more than 80% of all malaria cases in the country.

Up until 1999 intermittent malaria epidemic years alternated with years of generally low transmission levels. From 2000, there has been a progressive downward trend in malaria cases in the country (WHO 2009).

**Table 8 – Botswana, Number of malaria confirmed cases and confirmed malaria deaths, confirmed malaria cases per 1,000 population, malaria death rate per 100,000 population, 1998-2006**

	1988	1999	2000	2001	2002	2003	2004	2005	2006
Total population	1,588,796	1,611,000	1,651,000	1,680,863	1,622,129	1,649,129	1,673,184	1,708,327	1,719,996
Malaria confirmed cases	5,027	12,443	7,758	4,720	1,284	1,886	3,453	530	2606
Confirmed malaria cases per 1,000 population	3.2	7.7	4.7	2.8	0.8	1.1	2.1	0.3	1.5
Malaria confirmed deaths	11	40	20	31	4	11	5	11	40
Malaria death rate per 100 000 population	0.7	2.5	1.2	1.8	0.2	0.7	0.3	0.6	2.3

Source: Data for malaria confirmed cases and confirmed deaths taken from CSO website, consulted on 18 February 200123.

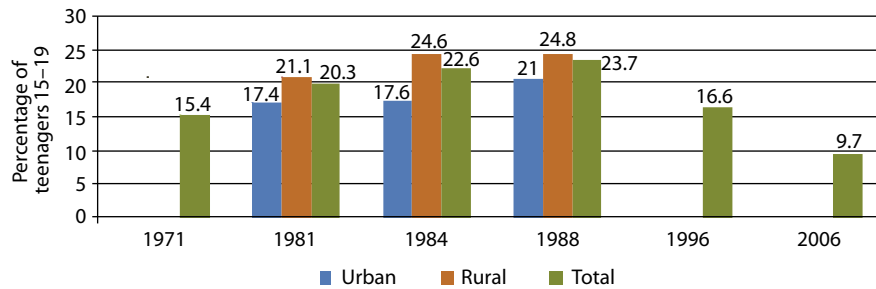
- *Percentage of teenagers 15-19 who are mothers*

Teenage pregnancy is associated with higher mortality both for the mother and the child. It also can have an effect on the educational opportunities for the pregnant girls. School dropout due to pregnancy among teenagers was 9% in 1996 (BDHS III) and 4% in 2007 (BFHS IV).

Botswana has a policy for girls to delay their first pregnancy until they are 21 years old. A number of strategies are implemented to address the sexual and reproductive health problems of the young population, such as provision of youth-friendly services, provision of educational material for adolescents. There are indications that these strategies are providing the desired results. However, an important proportion of those girls between 15-19 years of age still get pregnant. The proportion of teenagers who are mothers has been declining since late 80s, from 23.7% in 1988 to 9.7% in 2006 (BDHS 2006). A larger proportion of rural dwelling teenagers get pregnant compared to their urban sisters (BDHS 2006) as indicated in Graph 10.

23 [http://www.cso.gov.bw/index.php?option=com\\_content&task=view&id=16&Itemid=32](http://www.cso.gov.bw/index.php?option=com_content&task=view&id=16&Itemid=32). Incidence and death rates have been calculated by the evaluation team.

**Graph 10 – Botswana, percentage of teenagers aged 15-19 who are mothers, by place of residence, 1971-2006**



Source: Botswana Demographic Survey 2006, Central Statistics Office, Republic of Botswana, June 2008

In 2007, the majority of teenagers who ever had children had only one child (8.3 %) (BFHS IV 2007), but 3% of them had two children. A larger proportion of those who have children are between 18-19 years of age. The proportion of teenagers that have children varies according to the level of education; 45% of teenagers with no education have children compared with 29% with primary and 8.5% with secondary education. The majority of teenagers who had children were either married or living with their partners. More than 40% of teenagers who had children were working but not paid in cash (BFHS IV 2007).

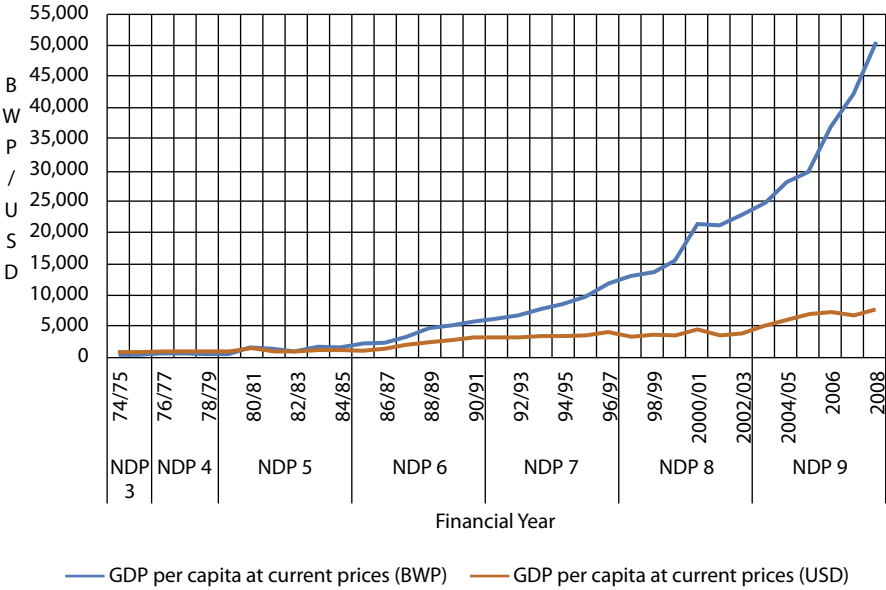
### 3.3 Health Systems Development in Botswana 1975-2010

#### 3.3.1 Health financing<sup>24</sup>

Since Independence in 1966, Botswana has moved from a least developed country to an upper middle-income status. The Botswana economy grew extremely fast: from 1966 to 2008, real GDP growth averaged 8.7% per year. GDP increased from USD 332 million in 1974 to USD 14 billion in 2008 or, in terms of GDP per capita, from USD 498 to USD 7,710 (current prices at exchange rate) (Graph 11).

<sup>24</sup> For information and a more detailed discussion of health financing in Botswana, see Annex 2.2.

**Graph 11- Botswana, GDP per Capita at Current Prices (BWP and USD)**

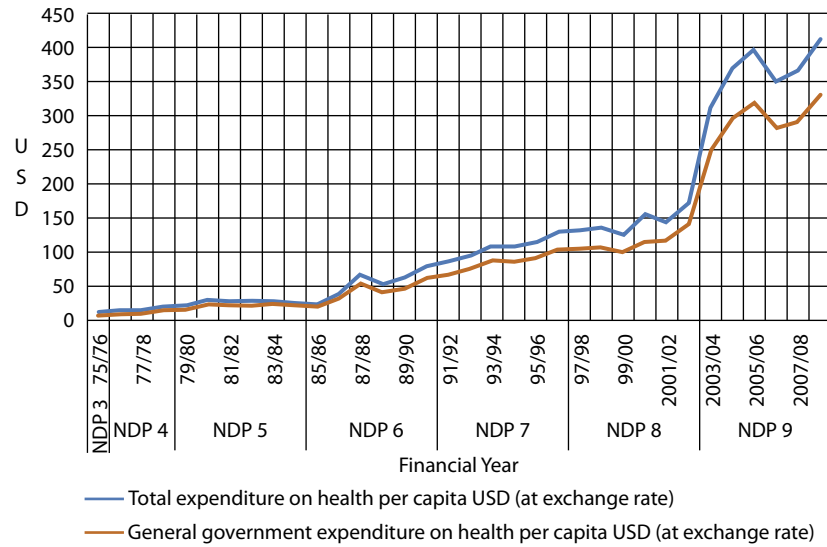


Government expenditure on health as a share of GDP grew from around 2% in 1974 to reach a peak of 4.5% in the period 2003-2005. Government expenditure on health as a share of total government budget oscillated between 6 and 8% until 2000, but then increased to reach 14.5 % in 2005/06.

Government expenditure on health per capita increased from USD 10 to USD 330 (current prices at exchange rate) between 1975 and 2009, with a sharp increase in 2001 (Graph 12). Those increases that started in 2001 reflect not only the important investments made in the health sector (and the subsequent recurrent costs), but also the increasing burden of HIV/AIDS. According to NDP 10, service delivery, facilities maintenance and the management of supplies, were compromised as resources were diverted to the immediate needs arising from the impact of HIV/AIDS (MFDP - NDP 10 2009).

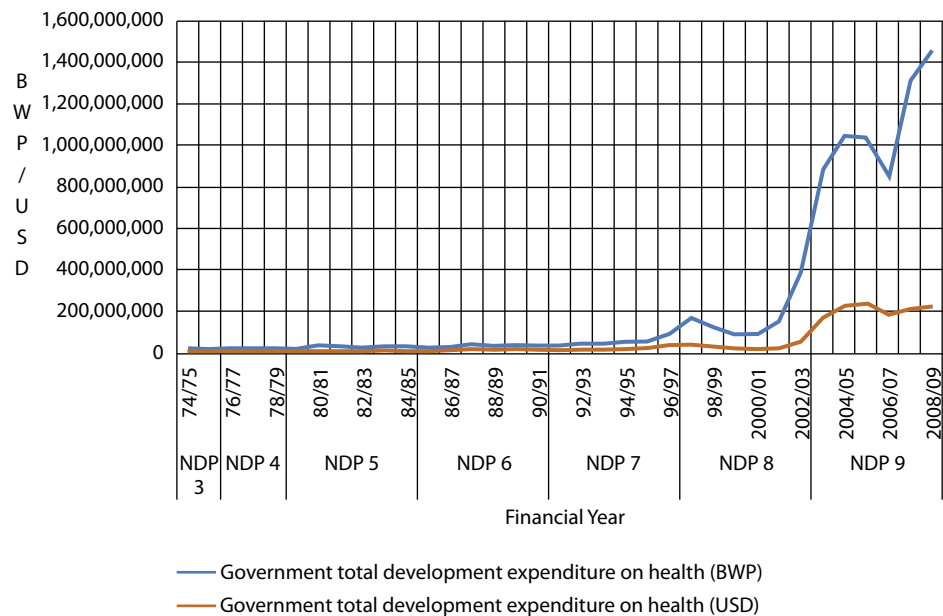


**Graph 12 – Botswana, Expenditure on Health per Capita (USD at exchange rate)**



From 1974 until 2009, government development expenditure on health (MOH, MOLG and NACA<sup>25</sup> development plans) increased from BWP 32.7 million (USD 39.3 million) to BWP 11.5 billion (USD 1.7 billion) or, in terms of expenditure per head, from BWP 1.8 to BWP 803.5 (respectively USD 2.1 and USD 122.5) (Graph 13).

**Graph 13 – Botswana, Government Development Expenditure on Health (BWP and USD)**



Note: MOLG: estimate for the two last years of NDP 5 to NDP 9 and actual expenditure for all other years; NACA: idem for NDP 8 and 9; MOH: actual expenditure.

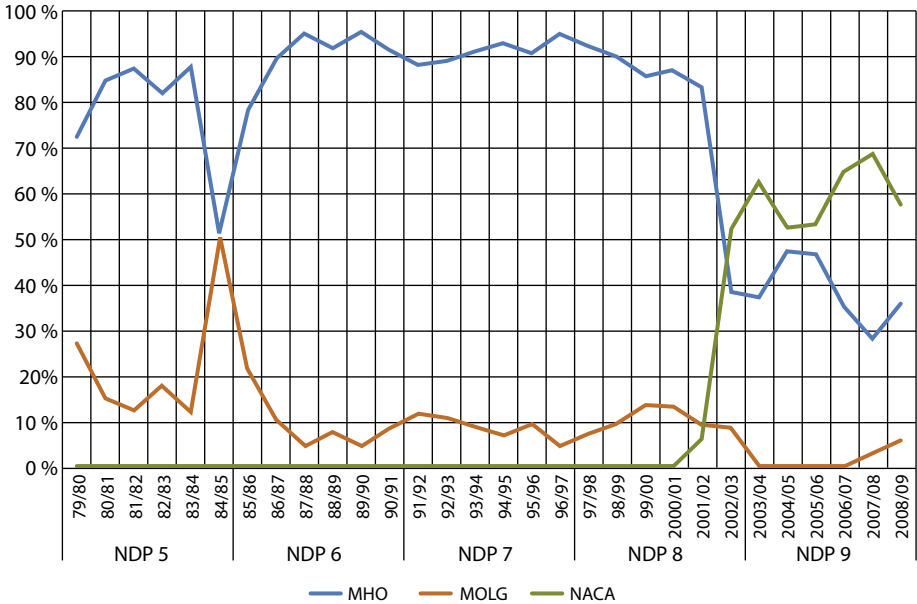
<sup>25</sup> Although most of NACA expenditures cannot be considered *stricto sensu* as development expenditure (ARTs should be considered as recurrent expenditure), they are accounted for in the development fund.

The divergence between the Pula value and the USD value of Government Development Expenditure on Health reflects the fall in the value of the Pula (against the dollar). The Pula fell from an exchange rate of around parity during the period up to 1984 to around BWP 1 = US\$0.14 in the first decade of 2000.

Figures for Government Health Development Expenditures include development expenditures by Norway, and other donors, which were included in the government accounts. See Graph 16 below for a presentation of Norwegian assistance to the Botswana health sector.

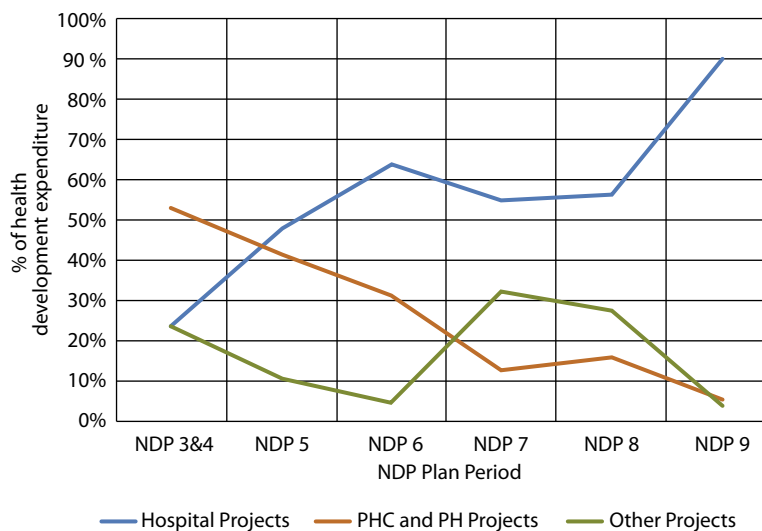
The phenomenal increase in health development expenditure starting from the end of NDP 8 reflects the cost of coping with the HIV/AIDS epidemic (mainly ARTs). During NDP 9, development expenditure on health increased from less than 5% of total government development expenditure to more than 20%. Between 1986 and 2000, the MOH was responsible for 90% of total development expenditure on health (MOLG: 10%), but since 2003 NACA has undertaken more than 50% of total development expenditure on health (Graph 14). Government development expenditure on health represented around 0.5% of GDP until the end of NDP 8, rising to more than 1.5% of GDP during NDP 9 (reflecting again the cost of coping with the HIV/AIDS epidemic with the introduction of ART in late 2001).

**Graph 14 – Botswana, Government Development Expenditure on health: MOH, MOLG and NACA on Total (%)**



The share of total health development expenditure going to the hospital sector (MOH) increased from 25% to 90% from the mid-1970s to 2005, with a corresponding decrease in the proportion being invested in primary care (Graph 15). This shift in emphasis was in the context of a significant increase in development expenditures on health (see Graph 13 above) but reflects a major hospital building programme prioritised in NDPs 8 and 9.

**Graph 15 – Botswana, MOH & MOLG: Development Expenditure on Health by Level of Care (%)**



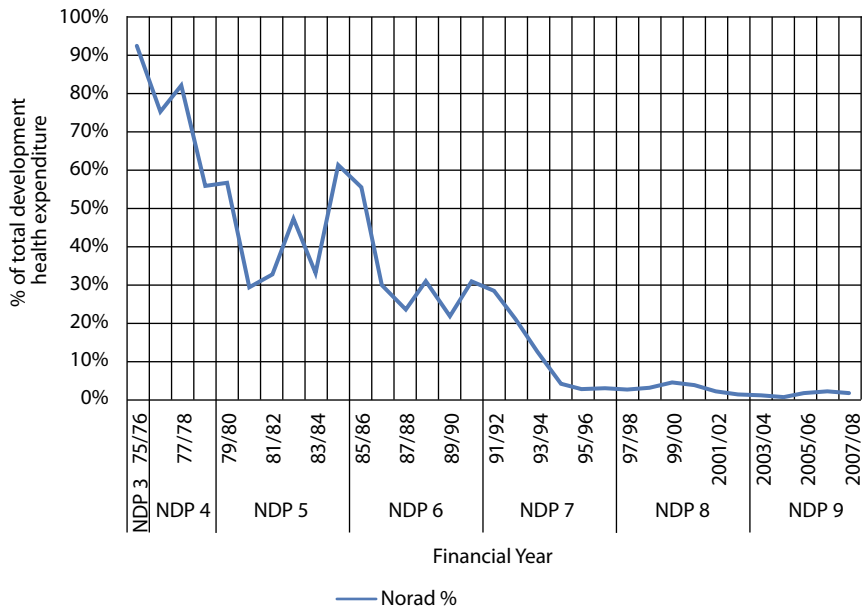
Note: Categories defined as:

- Hospitals all MOH projects related to hospitals
- PHC and PH
  - All MOLG related health projects
  - MOH: Projects related to Health Centres, Regional/District Health teams, and different programmes (Occupational Health, Dental Health Services, Health Education, MCH/FP, Nutrition, Rehabilitation, Mental Health, Prevention of Blindness, other Family Health Programmes, Rural Health Facilities, Preventive Programmes, Maternal and Family Health, PHC programmes)
- Others: Medical Research and Evaluation, NHI, CMS, Control of Communicable Diseases, Computerisation of MOH, IHS, MOH Fleet, Improvements to TSS.

Assumptions for NDP 3 & 4 (Years 1973 to 1978/1979): Hospitals=half of MOH development expenditure; PHC=total MOLG development expenditure; Others=half of MOH development expenditure.

Norway was the most important external partner and an important contributor to the development of the sector during the years 1972-1995. Norwegian aid represented more than 90% of total development expenditure on health in 1975 and was still above 30% in 1991 (Graph 16). The Domestic Development Fund became progressively the main source of finance for development expenditure: 10% in 1974, 40% in 1978, 60% in 85, and >90% for the years 1996-2009.

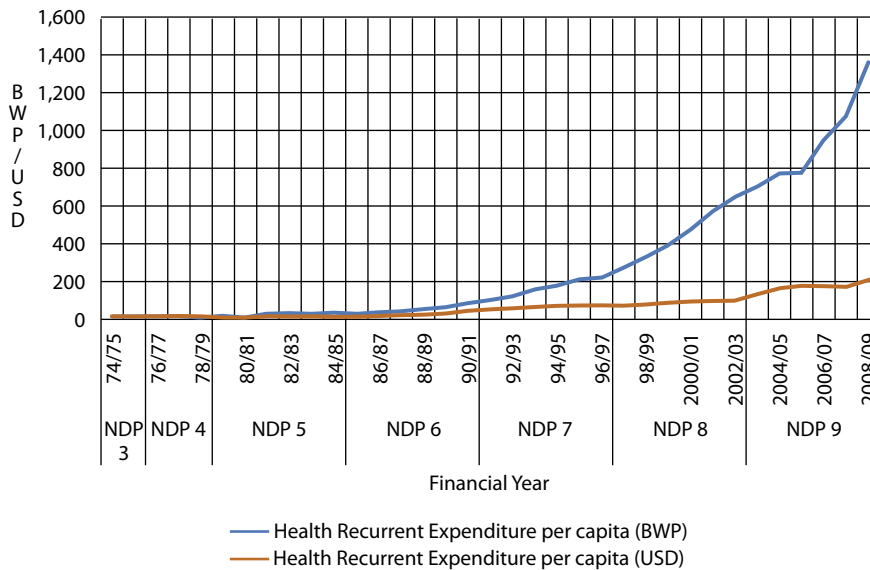
**Graph 16 – Norwegian health aid as % of Total Government Health Development Expenditure.**



Note: From 1973 till 1983, the cost of technical assistance provided by Norway was not included in the agreements.

**Recurrent Expenditure:** Between 1974 and 2009, Government recurrent health expenditure (MOH, MOLG and NACA<sup>26</sup>) increased from a total of BWP 2.1 million (USD 3.2 million) to BWP 2.46 billion (USD 357.8 million) or, in terms of expenditure per head, from BWP 3.4 per capita to BWP 1,361 per capita (respectively USD 5 and USD 207) (Graph 17).

**Graph 17 - Botswana, Recurrent Health Expenditure per Capita (BWP and USD)**

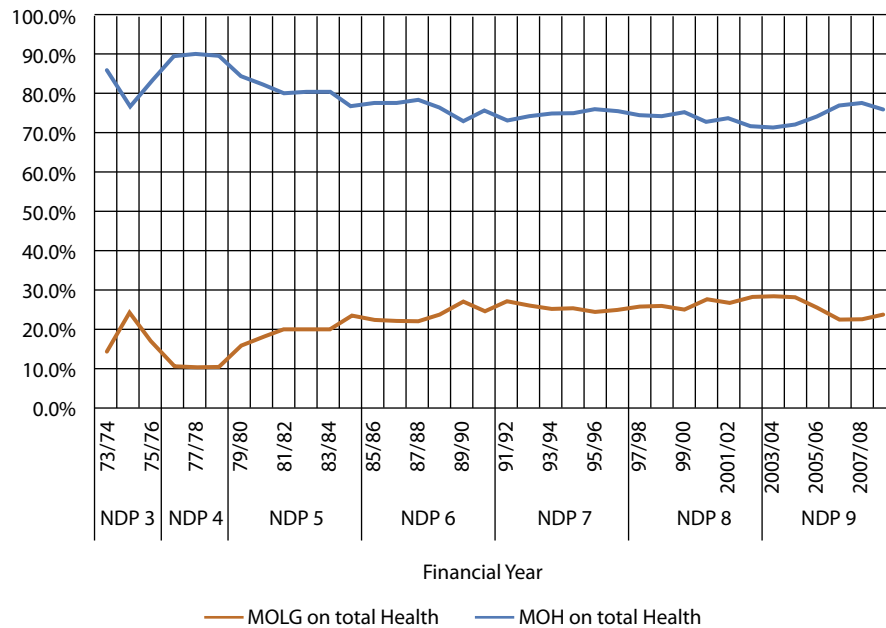


26 NACA from 2002.

Until 2001, recurrent health expenditures remained between 8% and 10% of total Government recurrent expenditure. Subsequently they have increased slightly, remaining above 10% since then.

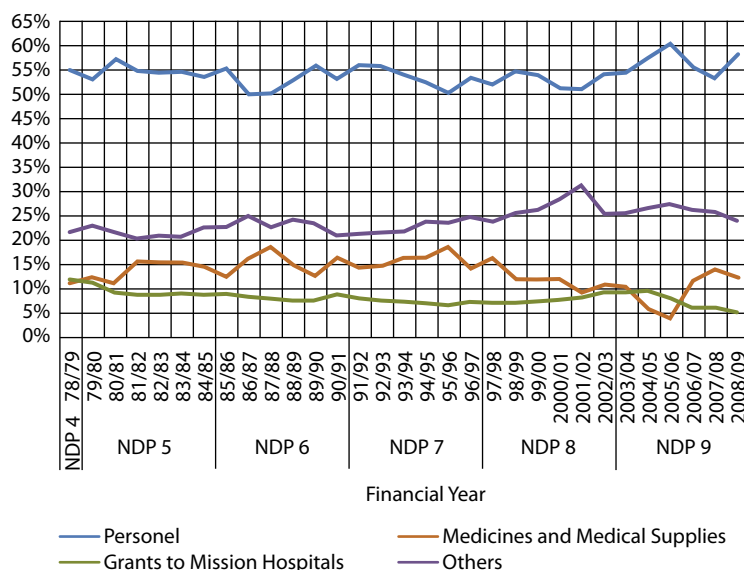
The share of recurrent health expenditure undertaken by MOLG steadily increased from 10% in 1978/9 to almost 30% in 2002, before decreasing to 22%. This probably reflects an increase in MOH share of expenditure as a result of the earlier investments in the hospital sector (Graph 18).

**Graph 18 - Botswana, Government Recurrent Health Expenditure: MOH & MOLG on Total (%)**



Salaries and allowances average around 55% of MOH recurrent expenditure. The proportion of expenditure on essential medicines and supplies decreased from 1995 to 2005 (from 20% to 5% of MOH recurrent expenditure) before increasing again to 15% during the second half of NDP 9 (Graph 19).

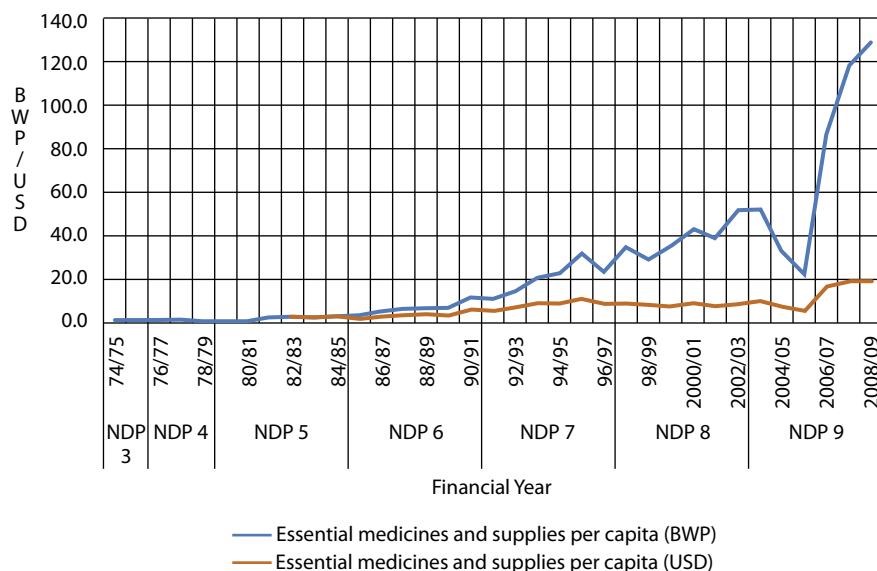
**Graph 19 - Botswana, MOH Recurrent Expenditure: Personnel, Medicines, Grants to Mission Hospitals and Others on Total (%)**



Grants from MOH to Mission Hospitals also decreased sharply, as a proportion of total expenditure, during NDP 9: from 10 to 5% (of MOH recurrent expenditure): this might have been the consequence of the transfer of one Mission Hospital to the MOH.

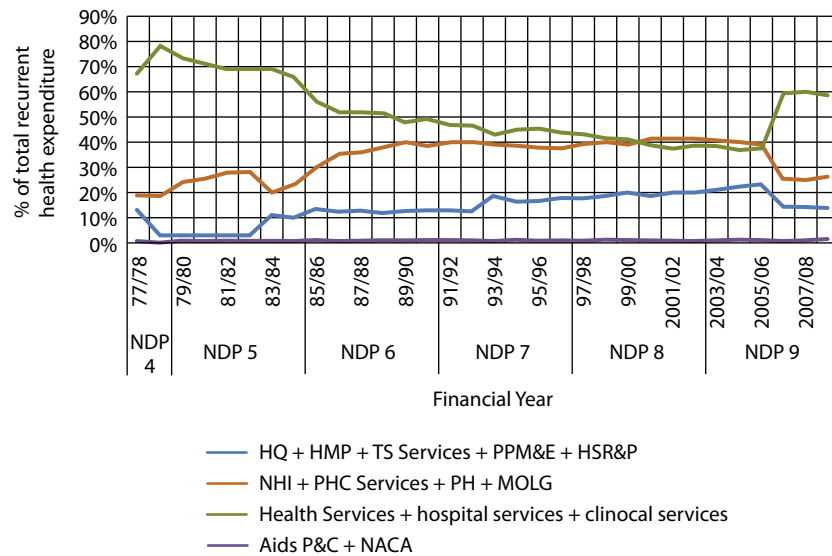
Actual expenditure on essential medicines in current BWP per capita (Graph 20) dramatically increased from 1991 to 2003 and more sharply from 2003 to 2009. However in USD terms, the expenditure remained constant at around USD 10 per head until 2003 but then doubled to USD 20 per capita by 2009.

**Graph 20- Botswana, MOH Expenditure on Medicines and Supplies per Capita (BWP & USD)**



An analysis of recurrent expenditure by level of care (Graph 21) shows that the share of MOH Headquarters on total recurrent expenditure steadily increased from 1982 to 2005 (from less than 5% to more than 20%) while hospital and primary care represent around 40% each. There is significant change in 2005 which saw a dramatic increase in MOH hospitals expenditure (up to 60%) and corresponding fall in MOH primary level expenditure (to below 40%). It would seem that these dramatic changes were due to a reorganisation of the MOH that took effect in 2005/2006, rather than some real change in spending patterns.

**Graph 21 – Botswana, Recurrent Health Expenditure by Level of Care (%)**



Note:

MOH departments:

- 74/75 till 82/83: Headquarters; National Health Institute, Health Services
- 83/84 till 05/06: Headquarters, Health Manpower, Hospital Services, PHC Services, TS Services
- Beyond 05/06: Headquarters, Policy Planning Monitoring and Evaluation, Health Sector Relations and Partnership, Clinical Services, Public Health, Aids Prevention and Care

Groups:

- Headquarters: Health headquarters (minus grants to mission hospitals and fees to specialists); Health Manpower; TS Services (minus medicines); Policy, planning, monitoring and evaluation; Health sector relations and partnership (minus grants to mission hospitals)
- PHC and PH: NHI; PHC services, Public Health (+ 20% of medicines under TSS); MOLG
- Clinical services: Health services; Hospital services (+ grants to missions hospitals + fees to specialists); Clinical Services (+ 80% of medicines under TSS)
- HIV/AIDS: Aids prevention and care; NACA

### 3.3.2 The health services delivery system in Botswana

Botswana has a six-tiered health care delivery system: mobile stops, health posts, clinics (with or without maternity), primary hospitals, district hospitals and referral hospitals (Table 9) distributed over 29 health districts. Before 2009<sup>27</sup> the provision of health care at the different levels of the health system in Botswana was the responsibility of both the MOH and the MOLG (MOH 1995). The MOH was responsible for running primary hospitals (formerly called health centres), district and referral hospitals. The MOLG, through the District Councils, managed the clinics, health posts and mobile stops.

**Table 9 – Botswana, Health Facilities, 2006**

Level	Number	General staffing characteristics
<b>Mobile Stops</b>	860	Outreach services provided by registered nurses/midwives and health education assistants. It is not a permanent building.
<b>Health Posts</b>	342	Staffed by registered nurses and midwives, family welfare educators/health education assistants, ambulance available for referrals. A doctor from the mother facility (clinic or primary hospital) will come regularly (i.e. once a week) to provide general consultations. Ambulance available for referrals.
<b>Clinics with/without maternity</b>	263	Staffed by registered nurses and midwives, sometimes doctors. Those with maternity provide normal birth delivery services. Ambulance or transport available for referrals
<b>Primary Hospitals</b>	17	Staffed by nurses, midwives, medical officers as well as laboratory, pharmacy, X-ray staff. Ambulance or other transport available for referrals.
<b>District Hospitals</b>	14	Staffed by nurses, midwives, medical officers as well as laboratory, pharmacy, X-ray staff. Sometimes medical specialist available or a specialist will come to provide specialised services on regular basis. Ambulance or transport available for referrals.
<b>Referral Hospitals</b>	3	Staffed by nurses, midwives, medical officers (general and specialists) as well as laboratory, pharmacy, X-ray staff. Specialised care available.

Source: Health Statistics Report 2006, CSO. Interviews with key informants and field visit to health facilities.

The Government of Botswana is the main provider of health services. Other providers include faith-based organisations (i.e. Mission Hospitals), NGOs, CSOs and private providers. Three mining hospitals and the three Church Hospitals serve as district hospitals and provide services to the public in their communities (WB 2010). Additionally, each of the Church hospitals has its own specialised services that are specific to that institution. They are also important in the training of health professionals.

<sup>27</sup> In 2009, the MOH took over responsibility for the management of the primary level facilities that had previously been responsibility of the MOLG. This reform is currently being implemented.



Following Independence, a priority of Government was to rapidly improve access to health facilities for the population. The following table summarises the development in health infrastructure in Botswana over the period 1974-2006.

**Table 10 – Botswana, Health Facilities, 1974-2006**

Type of health facility	1974	1980	1982	1988	1994	2000	2004	2006
<b>General and Referral Hospitals</b>	14	13	15	15	16	16	17	17
<b>Health Centres / Primary Hospitals</b>	7	7	7	10	13	17	17	17
<b>Total Clinics</b>	47	103	123	154	200	232	259	263
<b>Clinics with maternity</b>		32	37	60	71	86	102	103
<b>Clinics without maternity</b>		71	86	94	129	146	157	160
<b>Health Posts</b>	198	215	239	292	310	324	341	342
<b>Total Health Facilities</b>	<b>266</b>	<b>339</b>	<b>384</b>	<b>471</b>	<b>539</b>	<b>589</b>	<b>634</b>	<b>639</b>
<b>Mobile Stops</b>		341	389	623	701	712	528	860

Source: Medical Statistics, Health Statistics Reports, MOH, CSO.

Health services are now accessible in both urban and rural areas. Eighty four per cent of the population live within a 5 km radius of a health facility and a further 11% live between 5 and 8 km from a facility. This means that a total of 95% of the population live within an 8 km radius of a health facility (Table 11). There are urban and rural differences. For example, 100% of the inhabitants of North East, Southern and Kgalagadi South live within 5 km of a facility, while parts of Serowe, Bobirwa, Mahalapye and Gomare have all their inhabitants living within 8 km. By contrast Kweneng West and South East have only 5% and 14% of their populations respectively living within 5 km<sup>28</sup>.

**Table 11 – Botswana, Proportion of the population with access to primary health care services within 15, 8 and 5 km from a health facility, by urban and rural residence, as of April 2007**

	Proportion of population living between 8 and 15 km of a health facility	Proportion of population between 5 and 8 km radius from a health facility	Proportion of population within 5 km radius from a health facility
<b>Urban</b>	n.a.	4	96
<b>Rural</b>	11	17	72
<b>Total Population</b>	5	11	84

Source: STATS BRIEF, Central Statistics Office, Gaborone, Botswana, August 2007, consulted at CSO website: <http://www.cso.gov.bw> on February 18, 2011.

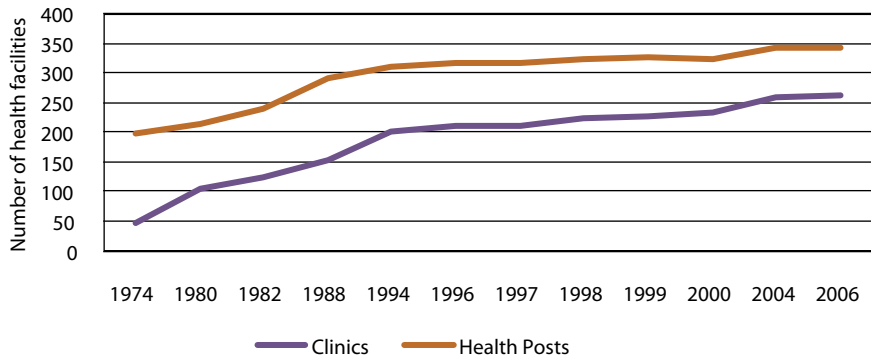
28 CSO, August 2007.

Health services are virtually free at public health facilities; people are required to pay a nominal charge of 5 Botswana Pula (USD0.80). Maternal and child health and family planning services are exempted from the fee.

Primary health care services are provided in Botswana through an extensive network of 103 clinics with beds, 160 clinics without beds, 342 health posts and 860 mobile stops. Due to the geographic characteristics of the country (large rural areas, low population density) these facilities play a key role in securing access to basic health services to the Botswana population.

Over the period 1974-1994, when there was active Norwegian support for health infrastructure development, the infrastructure for the provision of primary health care services in Botswana grew steadily. In this period, the number of health posts grew by 57%, from 198 to 310, and the number of clinics quadrupled from 47 to 200 (Graph 22).

**Graph 22 – Botswana, Number of Health Post and Health Clinics, 1974-2006**



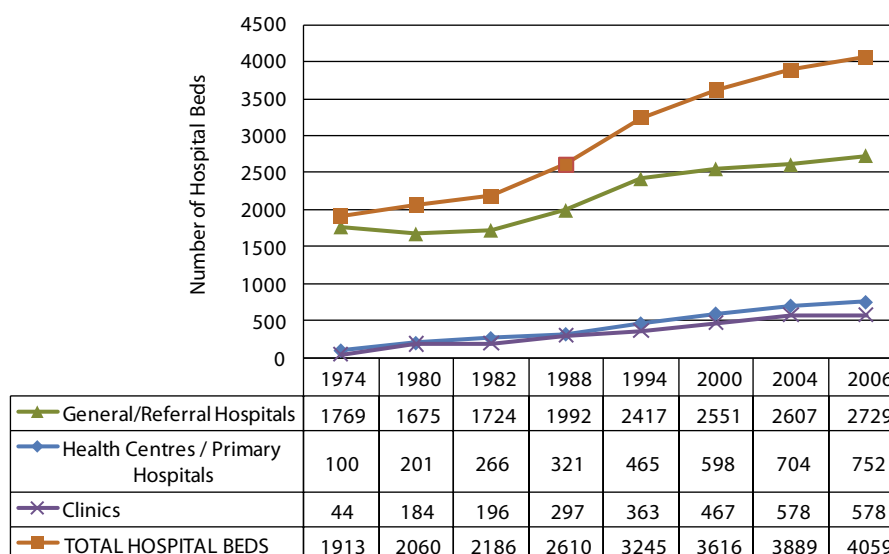
Source: Medical Statistics, Health Statistics Reports, MOH, CSO.

Hospital services are provided in Botswana through a network of primary, general and referral hospitals (Table 9 above). In the period 1974-1994 the number of referral and general hospitals increased by two and primary hospitals nearly doubled (from 7 to 13) (Table 10).

Over the period 1974-2006 the total number of beds available more than doubled (Graph 23). In 2006, hospital beds in referral/general hospitals make up 69 per cent of the total number of hospital beds, while primary hospital and clinic beds constituted 19% and 14% respectively, a very different composition from the one in 1974 where hospitals beds in general/referral hospitals represented 92% of the total number of beds in the country.

During the period of significant support by Norway for infrastructure development (1974-1994) there was a 70% increase in the total number of beds (from 1,913 beds to 3,245 by 1994). Within this total, the number of beds grew almost eight times for clinics, four and a half times in primary hospitals and by 70% in general/referral hospitals.

**Graph 23 – Botswana, Hospital beds, 1974-2006**



Source: Medical Statistics, Health Statistics Reports, MOH, CSO.

In 1974 the number of beds per 1,000 population was 3.2 and since then the number of beds per 1,000 population has fluctuated between 2.2 and 2.4/1,000 population (Table 12).

**Table 12 – Botswana, Hospital beds per 1,000 population, 1974-2006**

	1974	1980	1982	1988	1994	2000	2004	2006
<b>Beds per 1,000 population</b>	3.2	2.5	2.2	2.2	2.3	2.2	2.3	2.4

Source: Team elaboration from data from Medical Statistics, Health Statistics Reports, MOH, CSO.

A study made of the utilisation and efficiency of 33 hospitals in Botswana, revealed that:

- In around 69% of hospitals, the recorded Average Length of Stay falls outside the acceptable range of 5-7 days;
- In around 82% of hospitals, the bed occupancy rate falls below the optimal range of 75-85%.

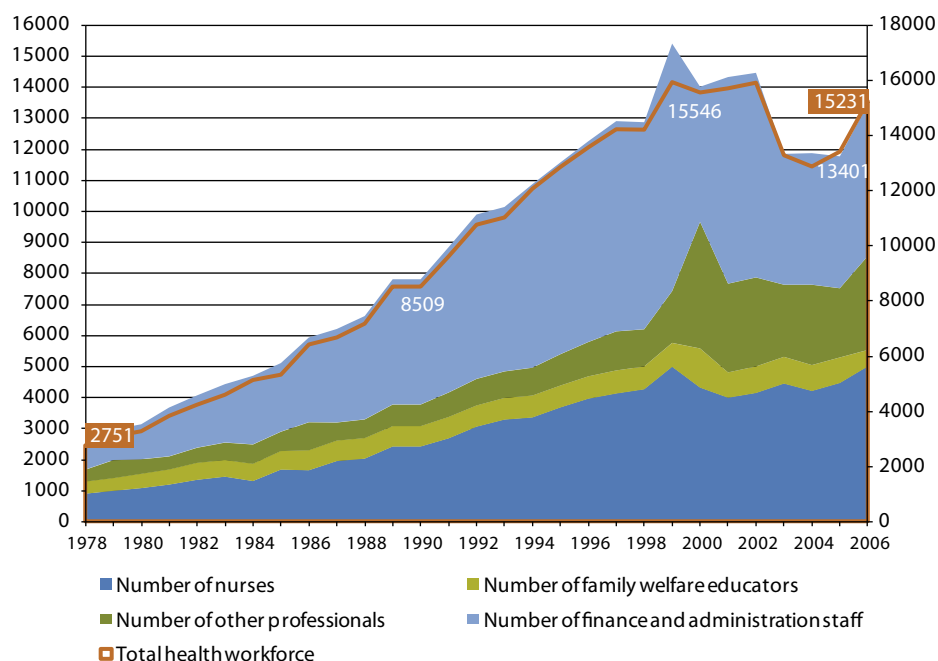
The study also pointed out differences in admission rates which could be reflecting inequities in access to beds, quality of hospital services and differences in utilisation patterns of services (MOH 2008). Utilisation and efficiency of hospital services can be affected by a number of factors such as shortage of staff, unavailability of equipment, inadequate management, ineffective referral system, care seeking behaviour and preferences of the population. It does appear that the existing hospital bed capacity in the country could be used more efficiently.

### 3.3.3 Human Resources for Health

Since Independence one of the major obstacles facing the Botswana health sector has been the shortage of health staff at all levels of the health care system. Human resource development was therefore a priority in successive NDPs, not only in terms of production of the required number of staff members, but also in terms of skills and qualifications. The tables and graphs in this section show the changes in numbers of human resources for health over the years, from 1978 till 2006<sup>29</sup>.

The Institute of Health Sciences, with campuses in different parts of Botswana, is the major training facility for nurses, midwives, pharmacy and laboratory technicians and dental therapists<sup>30</sup>. The University of Botswana has degree courses for nurses at Bachelor and Masters levels. A Medical School at the University took its first students in 2009. Prior to 2009, all doctors were trained in medical schools outside the country. All other cadres, including all specialists, training takes place outside of Botswana.

**Graph 24 – Botswana, Health workforce (total and for selected categories of cadres), 1978-2006**



Source: Central Statistics Office, Medical/Health Statistics Reports (annual reports 1978-2006).

The Botswana health workforce has increased more than fivefold since 1978, when the total health staff amounted to 2,751. Graph 24 shows the steady increase since the late 70s with a decline in the period 2002-2004, after which the health workforce grew rapidly again from 13,400 in 2005 to 15,231 in 2006. The fall in numbers employed shown from 2003 to 2005 is a result of a

<sup>29</sup> Most data referred to in this section are extracted from a single source, the Health Statistics published by the Central Statistics Office. After 2000, this data makes no clear delineation between the health workers in the *public* and *private* or *other* sectors.

<sup>30</sup> While no documentation was found in the NORAD files or reports, it is understood that Norwegian Technical Assistants contributed to the development of a Pharmacy Technicians course which was instrumental to increasing the cadre of Pharmacy Technicians in Botswana (Personal communication).

reduction in the numbers of finance and administrative staff recorded. It is assumed that this is as a result some reorganisation of the staff categories or statistical collection methods rather than an actual fall in health workers.

The numbers of major categories of cadres, such as doctors and nurses, also increased over time. Both categories have increased five-fold in the last 28 years (Table 13). In 2006 there were nearly 600 doctors and 5,000 nurses in the country (CSO 2006) compared to only 117 and 1,071 in 1978.

**Table 13 – Botswana, Number of selected health personnel, by category, 1980-2006**

	1980	1985	1990	1995	2000	2006	change <sup>°</sup>
<b>Doctors</b>	117	189	236	396	465	591	405%
<b>Nurses</b>	1,071	1,670	2,416	3,678	4,319	5,006	367%
<b>Family welfare educators</b>	474	609	666	713	1,269	533	12%
<b>Pharmacists</b>	10	9	13	23	27	60	500%
<b>Pharmacy technicians</b>	17	51	96	134	165	163	859%
<b>Dentists</b>	10	14	11	41	34	4	-60%
<b>Dental therapists</b>	8	4	4	41	56	20	150%
<b>Laboratory technicians</b>	15	27	47	102	181	142	847%
<b>Lecturers &amp; tutors (combined)</b>	0	0	156	191	303	297	90%
<b>TOTAL HEALTH STAFF**</b>	<b>3,263</b>	<b>5,314</b>	<b>8,509</b>	<b>12,844</b>	<b>15,546</b>	<b>15,231</b>	<b>367%</b>

Source: Central Statistics Office, Medical/Health Statistics Reports (annual reports 1980-2006).  
Notes: ° Percentage change between 1978 (start of the time series) and 2006.

The change in the numbers of nurses working in Botswana is significant, however due to changes in designation, it is difficult to analyse the changes in numbers amongst the different cadres of nurses.

The availability of doctors and nurses, as a ratio to population has improved. The number of doctors per 10,000 population grew from 1.2 in 1980 to 3.3 in 2006, an increase of more than 150%. For nurses the ratio grew from 11.4 to 28.8/10,000 over the same period (Table 14). In contrast the staff ratio for the cadre of Family Welfare Educators (subsequently Health Education Assistants) has hardly changed over this time of period.

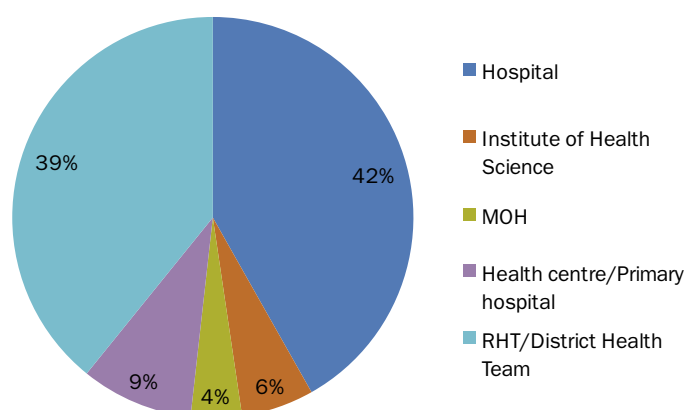
**Table 14 – Botswana, Staff ratios for selected health cadres (per 10,000 population), 1980-2006**

	1980*	1985	1990	1995	2000	2006
<b>Doctors</b>	1.2	1.7	1.9	2.7	3.02	3.3
<b>Nurses</b>	11.4	15.4	18.7	25.2	26.2	28.8
<b>Family Welfare Educators</b>	5.0	5.6	5.1	4.9	7.7	5.2

Source: Central Statistics Office, Medical/Health Statistics Reports (annual reports 1981-2006).  
 Note: \* In the CSO Medical/Health Statistics, the staff ratios are only available from 1981 onwards and therefore the 1980 staff ratios are own calculations (based on the health staff numbers from the Medical Statistics report 1980 and population data from the Census 1981).

In 2006 42% of the Botswana health workforce was employed in the two tertiary referral hospitals while the health districts employed 39%. By comparison, twenty years earlier 57% of staff were employed in hospitals and only 33% worked in the district health facilities. The number of staff working in Health Centres (now called Primary Hospitals) increased from 4 to 9% since 1979.

**Graph 25 – Botswana, Health workforce by location, 2006**

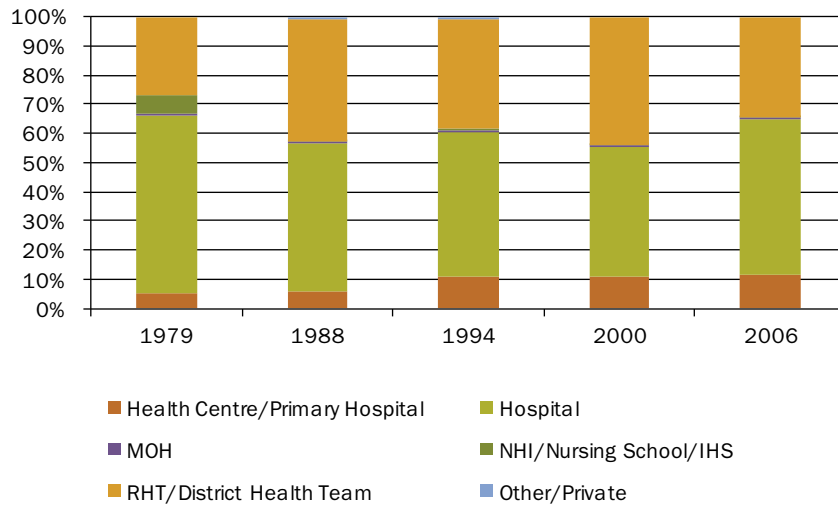


Source: Central Statistics Office, Health Statistics Report (annual report 2006).

The graph (Graph 26) below shows the location of nurses of by level of care<sup>31</sup> for five separate years, 1979 to 2006. In 2006, sixty five per cent of nurses were working in primary, district or tertiary hospitals. The proportion of nurses in primary hospital increased gradually and reached 10% by around 1994. It has remained at that level up to the present day.

31 To ensure comparability over time the location categories were reorganised to reflect changes in designation.

**Graph 26 – Botswana, Percentage of nurses by location, 1979-2006**



Source: Central Statistics Office, Health Statistics Report (annual report 2006).

Reflecting the location of the major health institutions, 43% of the doctors are employed in the Gaborone district, 17% in Francistown, and the remaining 40% in all other Batswana districts<sup>32</sup>.

Shortages of health staff still prevail in the Botswana health sector and there remains a dependence on foreign workers. This is significant for medical doctors with only just over 10% of medical doctors having Batswana nationality. The figures in Table 15 show that, despite increased numbers of Batswana doctors, the proportion has not changed since the 80s. Most of the non-Batswana medical doctors come from other African countries.

**Table 15 – Botswana, Doctors and nurses by nationality (numbers and %), 1988-2006**

	Doctors				Nurses			
	Batswana		Foreign		Batswana		Foreign	
	#	%	#	%	#	%	#	%
<b>1988</b>	28	14%	171	86%	2,237	96%	95	4%
<b>1999</b>	36	11%	290	89%	3,556	87%	534	13%
<b>2006</b>	60	10%	530	90%	4,706	96%	200	4%

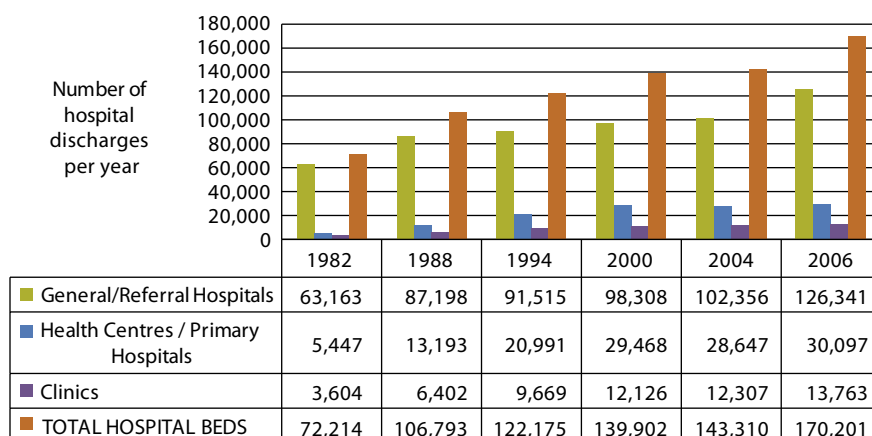
Source: Central Statistics Office, Medical/Health Statistics Reports (1988, 1999 & 2006).

32 See Annex 2 (in Volume II)

### 3.3.4 Health Sector Performance<sup>33</sup>

Alongside the expansion in access to health facilities, there has been an increase in the utilisation of hospital services as measured by the number of hospital discharges (Graph 27). This increased by 69% between 1982 and 1994, when the major expansion of primary level facilities was taking place with Norwegian support, and by 136% between 1982 and 2006. This increase can be seen in all type of facilities.

**Graph 27 – Botswana, Number of Hospital discharges, 1982-2006**



Source: Medical Statistics, Health Statistics Reports, MOH, CSO.

The number of hospital discharges per 1,000 population increased from 1982 to 1998 (from 74 to 92 /1,000). There was then a decline and the number remained at around the same level (86-84/1,000 population) until 2004 when the figure increased to 98/1,000 (Table 16).

**Table 16 – Botswana, Hospital discharges per 1,000 population**

	1982	1988	1994	2000	2004	2006
Hospital discharges / 1000 population	74	92	86	85	84	98

Source: team elaboration from data Medical Statistics, Health Statistics Reports, MOH, CSO.

The number of general outpatient attendances doubled between 1982 and 2006 (from 1.8 million to 3.6 million). The importance of clinics and health posts as providers of outpatient services grew, relative to hospitals, over this period. In 1982 clinics and health posts were providing 60% of the OPD attendances, but by 2006, they were together providing 85% of all OPD attendances. The remaining outpatient attendances were provided by the hospitals.

<sup>33</sup> The sources of information for this section have been Medical Statistics/Health Statistics Reports from the period 1974-2006. There is some inconsistency in the data, particularly for Child Welfare Clinics for the years 1991, 2001 and 2004 (the data deviates significantly from the observed pattern) for which we could not find explanations. The same is true for other data for 2004. However the overall conclusions are not affected.



The outpatient attendances per capita (not including injections/dressings) increased steadily, more than doubling between 1974 and 1988. Since 2000 the number of outpatient attendances per capita per year has been around 2 (Table 17). This gradual increase probably reflects a number of factors; increased access due to expansion of the health network in the earlier years, increased activity due to HIV/AIDS in the later years, being two contributing factors.

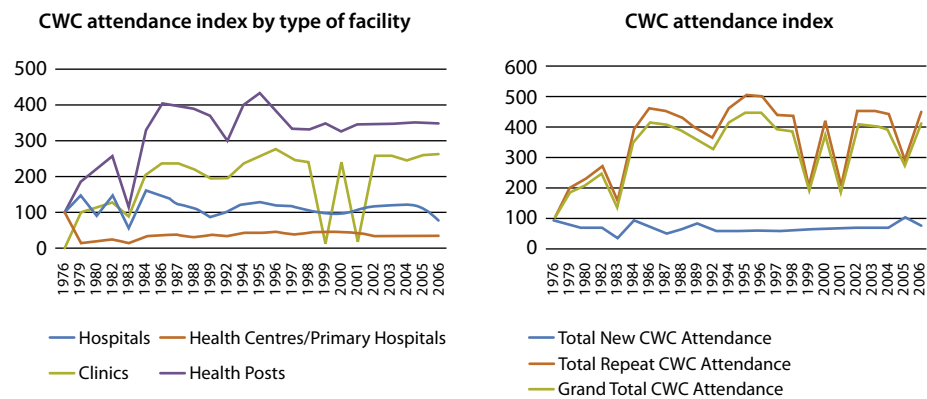
**Table 17 – Botswana, Outpatient attendances per capita 1974 -2006**

	1974	1978	1982	1988	1994	2000	2006
<b>General OPA / capita (does not include injections/dressings)</b>	0.87	1.51	1.84	2.14	1.77	2.24	2.09

Source: Team elaboration from data Medical Statistics, Health Statistics Reports, MOH, CSO.

The growth in the number of primary care facilities in the 1980s was accompanied by a major increase in utilisation of child welfare clinics at these facilities. Attendance at Hospitals has remained fairly constant (Graph 28). The total number of child welfare attendances provided by the various facilities has grown almost 400% from 427 thousands to 1.7 million. This growth has mainly taken place at clinics and health posts.

**Graph 28 – Botswana, Child Welfare Clinic attendance index by type of facility and CWC attendance index**



Source: Team elaboration, data from Medical Statistics, Health Statistics Reports, MOH, CSO.  
Note: The dramatic changes demonstrated in CWC attendances in 1983, 1999, 2001 and 2004 are likely to be as a result of reporting problems.

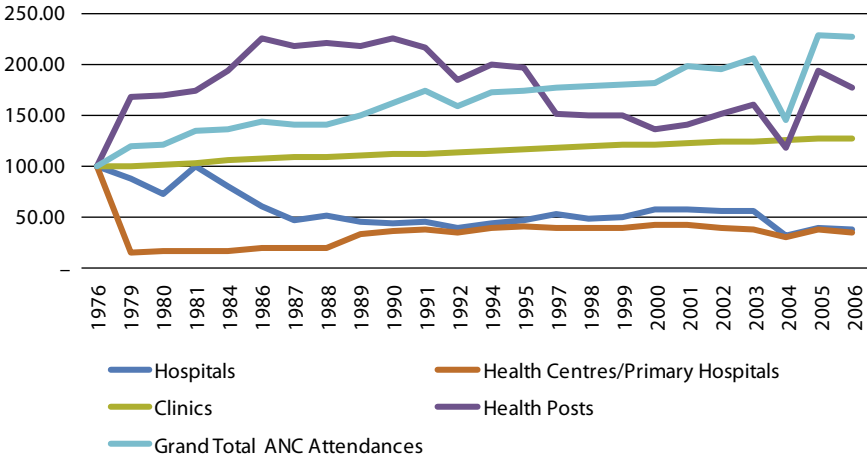
Vaccination services, provided on routine basis in all fixed and mobile health facilities in the country, are very successful. Immunisation coverage rates of 90% or higher for all vaccines amongst children under one year of age were achieved by 1988 (BFHS 1988) and subsequently maintained (BFHS IV 2007) This successful programme can, in part, be attributed to the good access to health facilities throughout the country.

Antenatal care services are provided by nurses or nurse/midwives to pregnant women through the primary health care network and outpatient departments in hospitals.

The analysis of the antenatal care attendance index by type of facility for the period 1976-2006 (Graph 29) shows that ANC attendance has grown by 125% since 1976. The primary health care facilities are the largest providers of these services. The provision of antenatal care services by health posts showed a rapid increase between 1979 and 1986 and then a decline in the period 1991-2003 but remains, in 2006, at a level 75% higher than in 1976. The provision of antenatal services by clinics shows a steady but slow grow of 27% from 1976. The number of antenatal care services provided by the hospitals was, in 2006, less than half what it was in 1976. In 2006, 86% of the ANC attendances were provided by health posts and clinics.

By 1998, 92% of pregnant women in Botswana received at least one antenatal care attendance during their pregnancy. This coverage has been maintained (BFHS 2007) and there has been a steady increase in the proportion of births attended by skill personnel, from 66% in 1984 to 94% in 2007 (BFHS 2009).

**Graph 29 – Botswana, Antenatal care attendances index by type of facility**

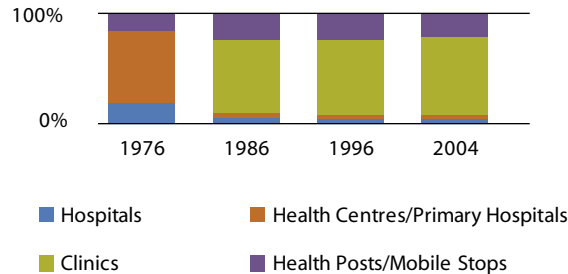


Source: Team elaboration, data from Medical Statistics, Health Statistics Reports, MOH, CSO.

Fertility has declined in Botswana (Table 1) with many factors contributing to this. The Botswana national family planning programme ensures that women are offered family planning services when they come to visit health facilities for all maternal and child health services. With the HIV epidemic in the 1990s, HIV/AIDS services were integrated with MCH and Family Planning (WB 2010). There was a massive increase in the uptake of family planning services in the period 1976-2004, from 40 thousand family planning attendances provided in 1976 to approximately 1.1 million in 2004. Most of these services were provided by clinics and health posts. In 1976, primary hospitals were the main providers of family planning services (70% of all family planning attendances in that year), but by 1986, a new pattern could be observed with clinics and health posts providing

90% of all family planning (Graph 30). This proportion has been maintained to the present.

**Graph 30 – Botswana, Percentage family planning attendances by type of facility**



Source: Medical Statistics, Health Statistics Reports, MOH, CSO.

### 3.3.5 HIV/AIDS

HIV/AIDS is amongst the main development and health challenges facing the country. Botswana was experiencing remarkable improvements in health indicators until the advent of the epidemic in the 90s. Among others, HIV/AIDS has reversed the progress made previously in reducing infant and child mortality and in increasing life expectancy at birth (section 1.1.1). Tuberculosis has re-emerged (section 1.1.3). The pandemic represents an increased burden on society, families and the economy as it affects the productive segments of the population. The Government efforts to fight the pandemic have also diverted resources that could have otherwise been used for other development endeavours (see section 3.2.2). A study by NACA (2008), projected that by 2009 there would be about 331,342 adults aged 15 years and above and 19,125 children between the ages 0-14 living with HIV in Botswana. Prevalence rates seem to have stabilised at 17.6 % in 2008 (NDP 10). The prevalence of HIV among pregnant women and the general population has been discussed (sections 3.2.2). The main policy developments related to HIV are discussed in Annex 4.

- *Preventive services*

The first case of HIV infection was diagnosed in 1985. HIV screening started in November 1986. To increase HIV testing, routine HIV testing in health facilities was introduced in 2004. HIV testing is also done through the Tebelopele Voluntary Counselling and Testing (VCT) Centres. The number of people tested in these centres rose from 73,551 in 2004 to 642,824 in 2008, while those tested in health facilities rose from 60,846 in 2004 to 626, 441 in 2008. The Know your Status Campaign spearheaded by the VCT strategy offered by NGOs has contributed significantly to increasing the proportion of population that has ever tested from 25.4% in 2004 to 56.4% in 2008 (NDP 10).

The Botswana Prevention of Mother to Child Transmission (PMTCT) programme was introduced in 1999. By 2007, 89% of HIV positive pregnant women took prophylaxis to reduce transmission to the unborn child compared to 37% in

2003, resulting in an estimated reduction in the mother to child transmission rate to 4% in 2008 (NDP 10).

There has also been an important decrease in HIV prevalence in donated blood and blood products from 9% in 2001 to 2.1% in 2007. Since the syndromic management of Sexually Transmitted Infections (STI) was introduced, a significant reduction in STI prevalence has been observed. The prevalence of Syphilis fell from 4% in 2002 to 2.5% 2007 and the number of genital ulcer disease cases fell by 50% from 16,766 in 2004 to 8,541 in 2007 (NDP 10).

Other prevention efforts include information and education campaigns, increase in condom supply and distribution. New prevention strategies will be promoted during NDP 10, including safe male circumcision.

All these are important achievements. However, many misconceptions about HIV transmission still persist among the population (including the young population). Additionally, social stigma hinders all aspects of Botswana's HIV prevention programmes. Testing, disclosure, care and support for people living with HIV are advocated but impeded by fear of disclosure (NACA 2008).<sup>34</sup>

- *Treatment, care and support*

In late 2001, Botswana was the first country in Africa to introduce anti-retroviral therapy (ART) programme. A programme, named MASA (a Setswana word for "new dawn") was launched in 2004 to roll out the provision of ART on a wide scale. The programme is now available in 30 hospitals and 130 satellites clinics in the country. The number of people on ART at the end of 2009 was 145,190. This is estimated to account for 89% of those with advanced HIV infection in need of ART, a substantial increase from the 63% reported at the end of 2004 (NACA 2010).

Tuberculosis is the most common opportunistic infection and a major cause of mortality among HIV infected persons in Botswana. Studies carried out show that 75% of TB patients are infected with HIV and about 40% of AIDS patients die of TB (NDP 10).

The Community Home Based Care Programme (CHBC) was introduced in 1995 and more than 300 CBO/NGOs have been registered to contribute to its implementation. The number of patients on CBHC has declined substantially from about 12,000 in 2002 to 3,600 in 2009 (NDP 10) as a result of the success of the ART programme.

The National Orphan Care Programme, led by the Ministry of Local Government provides care and support to orphans. Among others it includes the provision of free food baskets, free schooling, support with educational necessities and psychosocial counselling (NACA 2010).

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34 National Operational Plan for Scaling Up HIV Prevention in Botswana, 2008 – 2010, NACA,ACHAP February 2008.

- *Impact of HIV/AIDS on the health system*

The impact of the HIV/AIDS pandemic on the health system has not been formally studied. Other than the increase in direct costs (See section 3.2.1 Health Financing) the major impact is felt at the service delivery level. NDP 10 reports that, in 1998, on average 55% of admitted patients had HIV related conditions but up to 80% in some medical wards and about 33 % of patients in paediatric wards. Occupancy rates of general wards were 97% and greater than 100% for female and medical wards. The average length of stay was 9 days for AIDS patients and 5 for all patients. Hospitals expenses on drugs and other items had increased by about 40% (NDP 9).

#### **Findings from the field visit to health facilities in Tutume**

Staff from Tutume Primary Hospital reported that approximately 70% of the patients admitted in the general ward had some HIV related condition.

When asking staff at Moseitse Health Post how much of their time is used on HIV related services they responded that it was difficult to estimate, but they enquire about HIV status of every patient that comes to the facility, offer counselling and testing and, if accepted, take blood samples, give follow-up to women on PMTCT and make home visits to patients.

In Nata and Maitengwe clinics, initiation, control and follow-up of ART takes place once a week. On this day, the sole clinic doctor is full time dedicated to HIV patients at Infectious Disease Control Centre (IDCC). Nurses take over the outpatient general consultations at the clinic. If there is a need for the doctor he runs back and forth from the IDCC to the clinic's outpatient department. Additionally a nurse is dedicated full time to the IDCC centre on that day with other nursing staff being responsible for her regular duties.

#### **3.3.6 Regional Comparisons**

Regionally comparable data (Table 18) on health status indicators, health sector performance indicators and health financing show that Botswana's expenditure on health is high compared to the other countries shown. Botswana compares well with the other countries of similar economic status, and much better than the other less advantaged nations.

**Table 18 – Regional comparisons – Selected indicators, 2000-2009**

Category	Botswana	Lesotho	Malawi	Namibia	South Africa	Zambia
Total population (2008)	1,921,000	2,049,000	14,846,000	2,130,000	49,688,000	12,620,000
<b>Health status</b>						
Life expectancy at births (2008)	61	47	53	63	53	48
Infant mortality rate per 1000 live births (2008)	26	63	65	31	48	92
Under-five mortality rate per 1000 (2008)	31	79	100	42	67	148
Maternal Mortality ratio per 100,000 live births (2005)*	380 (120-10009)	960 (570-1400)	1,100 (720-1500)	210 (110-300)	400 (270-530)	830 (520-1200)
<b>Health sector performance</b>						
Births attended by skilled health personell (%) (2000–2008)	94	55	54	81	91	47
Hospital beds/10,000 population (2000–2009)	18	13	11	27	28	19
ART coverage (%) among people with advance HIV	79 (69-91)	26 (21-33)	35 (29-42)	88 (73->95)	28 (22-36)	46 (40-56)
<b>Health expenditure</b>						
Per capita total expenditure on health at average exchange rate (US\$) (2007)	372	51	17	319	497	57

Source: World Health Statistics 2010, WHO (accessed online 13 April 2011).

Note: \* Interagency estimates by WHO, UNICEF, UNFPA, World Bank.

Regionally comparisons of health staff ratios indicate that, compared with neighbouring countries such as Malawi and Zambia, Botswana performs rather well in terms of doctors, nurses and pharmaceutical personnel, but not so well for dentists (all subcategories together) or laboratory personnel is very low. When compared just to a similar middle-income country, South Africa and Namibia), the staff ratios in South Africa are better than in Botswana but Botswana has better ratios than Namibia for doctors and Laboratory workers (Table 19).

**Table 19 – Regional comparison of staff numbers and ratios, 2000-2009**

Category	Botswana	Malawi	Namibia	South Africa	Zambia
<b>Health staff numbers</b>					
Physicians	715	257	598	34,829	649
Dentists	38	211	113	5,995	56
Nursing & midwifery	4,753	3,896	6,145	184,459	8,369
Pharmaceutical personnel	333	293	288	12,521	108
Laboratory	136	46	481	2,002	1,415
<b>Health staff ratios (per 10,000 population)</b>					
Physicians	3.7	0.2	3.0	7.7	1.2
Dentists	0.2	0.1	0.6	1.3	0.4
Nursing & midwifery	26.0	2.6	31.0	41.0	7.2
Pharmaceutical personnel	1.7	0.2	1.4	2.8	0.1
Laboratory	0.15	0.03	2.4	0.4	0.1

Source: World Health Statistics 2010 (accessed online 8 April 2011).

Note: \* Population data are from 2008; health workforce numbers and ratios date from different years: 2000-2009.

### 3.4 Norwegian Inputs to Botswana Health system 1975-2010

Norway has been a partner to Botswana's health sector development since 1972 with the first formal agreement being signed in 1975. Two distinct phases of this partnership can be seen, the first from 1975 to 1996 covered 9 separate projects and agreements and, taken as a whole, can be characterised as a health sector support programme. Of these Phase I projects, two were implemented differently. The 1988 Family Health Project was implemented through a co-financing agreement with the World Bank and the Remote Areas Development Programme was a comprehensive rural development programme. However, both these had health objectives compatible with the overall Norwegian health sector support programme.

In 1996, as a result of two factors, a policy change within Norwegian aid to a new Institutional Cooperation approach to development assistance and Botswana's graduation to Middle Income Country status, collaboration between the two countries was changed to one of Institutional Collaboration.

Table 20 lists the various Norwegian programmes and projects in these two phases.

**Table 20 – Norwegian Health Projects in Botswana, 1975-2012**

<b>Project</b>	<b>Date of Agreement</b>	<b>Amount NOK</b>
<b>Phase 1:</b>	<b>1972-96</b>	
BOT 003 Development of Basic Health Services	1975-80	44.0 million
BOT 008 Development of the Dental Health Services	1980-88	3.1 million
BOT 009 Improvement at Health Centres and Hospitals; Development of the Rural Health Services	1978-87	39.0 million
BOT 041 Evaluation of the Health Status in Botswana	1983-85	2.5 million
BOT 014 Assistance within the field of health services	1984-88	43.0 million
BOT 015 Development and Further Improvement of Health Services	1985-96	189.9 million
Norway's Contribution to the Remote Area Development Programme	1988-93	5.5 million
Norway's Contribution to the WB Family Health Project	1984-92	47.5 million
Technical Assistance (not included in agreements)	1972-84	30.0 million
<b>Total Phase 1</b>		<b>404.6 million</b>
<b>Phase 2:</b>	<b>1996-2012</b>	
BOT 015 (contd.) Development and Further Improvement of Health Services	1996-2005	60.0 million
BOT 2202 Assistance to the Education of Botswana Students in Norway	1996-2012	30.0 million
BOT 2201 Human Resources to the MOH	2005-2008	45.0 million
<b>Total Phase 2</b>		<b>135.0 million</b>
<b>TOTAL 1975 - 2012</b>		<b>539.6 million</b>

Source: See Annex 1 (in Volume II) for details.

The Norwegian assistance to Botswana has been assessed, according to DAC criteria and the following box provides an overview of this assessment, using the post hoc logical framework developed during the inception phase of the evaluation. Annex 4.1 provides more detail of the evaluation findings.



<b>Leadership &amp; Governance</b>	
Strengthened government leadership and governance for the health sector.	
Indicator	Evaluation conclusion
1.1 Norwegian support in line with National Development Plans	Almost all Norwegian support can find its origin in one or more of the National Development Plans.
1.2 Government institutions and systems utilised for planning and implementation of the Norwegian assistance (planning, financing, financial reporting and auditing)	Infrastructure development plans supported by Norway based on NDP priorities. Most Norwegian TA employed on existing MOH Public Service positions. Botswana systems used for financial management and auditing of Norwegian funds transferred to Botswana. It is to be noted that these features were in conformity with the Paris Accord of 2005 and the Accra agenda for Action (2008), but were implemented well in advance of those agreements.
1.3 Strengthened health policy and legislation in several areas (pharmaceuticals, dental health, mentally and physically disabled)	National policies and legislation developed to govern the pharmaceutical sector. National Oral Health Plan 1983-2000 developed. Several Health Manpower Plans developed. Support to decision on starting a medical school at UoB National policy for care of people with disability - 1996
<b>Health Services Delivery</b>	
Increased access to PHC services, particularly in rural areas.	
<ul style="list-style-type: none"> <li>• Rural health posts /health stations</li> <li>• Health Centres</li> <li>• Hospitals</li> <li>• Office Accommodation</li> <li>• Staff Housing</li> <li>• Dental Clinics</li> <li>• Training Institutions</li> <li>• Central and Regional Medical Stores</li> <li>• Central &amp; regional maintenance workshops</li> <li>• Radios for Rural Clinics</li> <li>• Vehicles for Clinics, RHTs, Dental Mental &amp; Maintenance Services</li> </ul>	
Indicator	Evaluation conclusion
% of citizens living within 15km, 8km and 5 km of a health facility.	No baseline established but early NDPs stated geographic access to health facilities as a significant problem. From a very low base at the time of Independence, the Government policy to improve access to health facilities for the population has been successfully implemented with 84 per cent of the population now living within 5 km radius from the nearest health facility, 11 per cent of the population living within 8 km radius, which results in 95 per cent of the population living within the 8 km radius of the nearest health facility.

No. of Hospital Beds/population	Decrease in the number of hospital beds per 1000 population by 2006: 1974      3.2      beds per 1000 population 1994      2.3      beds per 1000 population 2006      2.4      beds per 1000 population															
General outpatient attendances per capita	Increase in the number of general outpatient: 1974      0.87      general outpatient attendances per capita 1994      1.77      general outpatient attendances per capita 2006      2.09      general outpatient attendances per capita															
Inpatient discharges per 1,000 population	Increase in the number of inpatient: 1982      74      in patient discharges / 1000 population 1994      86      in patient discharges / 1000 population 2006      98      inpatient discharges / 1000 population															
Norwegian supported constructions in current use and in good condition	No national survey of infrastructure constructed with support of Norway exists. Field visit of a sample of facilities during evaluation showed that most were still in use as health facilities today. Some had been further developed and a small number were in use for some related public service activity.															
<b>Human Resources for Health</b>																
Increased availability of key human resources for health																
Indicator	Evaluation conclusion															
Doctor/population	1980: 1.2/10,000 population 2006: 3.3/10,000 population															
Nurse/population	1980: 11.4/10,000 population 2006: 28.8/10,000 population															
Others (dental therapist/maintenance technician/lab/pharmaceutical technician)	<table border="1"> <thead> <tr> <th></th> <th>1978</th> <th>2006</th> </tr> </thead> <tbody> <tr> <td>Dent.</td> <td>7</td> <td>20</td> </tr> <tr> <td>therapists</td> <td>16</td> <td>142</td> </tr> <tr> <td>Lab. technicians</td> <td>17</td> <td>163</td> </tr> <tr> <td>Pharm. technicians</td> <td></td> <td></td> </tr> </tbody> </table>		1978	2006	Dent.	7	20	therapists	16	142	Lab. technicians	17	163	Pharm. technicians		
	1978	2006														
Dent.	7	20														
therapists	16	142														
Lab. technicians	17	163														
Pharm. technicians																
% of Botswana medical officers vs. Foreign medical officers	1988: 86% Foreign 2006: 90% Foreign															
TA contributed positively to capacity building and institutional strengthening	Yes															
Training assistance contributed positively to capacity building and institutional strengthening	A number of individuals and groups were successfully trained by the Institutional Collaboration programme of Norway. No evidence to indicate whether or not this has been translated into successful institutional strengthening.															

<b>Health Financing</b>	
Health Financing Options considered	
Indicator	Evaluation conclusion
National Health Accounts developed.	National Health Accounts for 2000, 2001, 2002 completed in 2008. Further NHA exercise currently underway.
<b>Health Information</b>	
Reliable health statistics available <ul style="list-style-type: none"> <li>• HIS designed and functioning.</li> <li>• National Health Status Evaluation undertaken.</li> </ul>	
Indicator	Evaluation conclusion
5.1 Improved quality and reliability of the HIS	ICD10 introduced in 2004. New reporting forms developed.
5.2 Health information use for decision making.	A set of health sector indicators developed covering health problems and health services indicators and in use.
<b>Health Technologies</b>	
Stronger healthcare technology systems in relation to drugs and pharmaceutical supplies and medical equipment management. <ul style="list-style-type: none"> <li>• CMS strengthened</li> <li>• Biomedical Engineering maintenance system established</li> </ul>	
Indicator	Evaluation conclusion
6.1 Improved procurement and distribution system for drugs and medical supplies	No performance indicators for medical supply system routinely collected. Reports of shortages of drugs in facilities within last year.
6.2 Reliable system for Quality control of drugs operating regularly	Quality Control Laboratory operational.
6.3 Budget is allocated for maintenance of equipment and infrastructure	No separate budget for maintenance was identified at either facility or central level.
6.4 Infrastructure maintenance systems are operating in health facilities	No performance indicators for infrastructure maintenance systems. Field visits would suggest problems in infrastructure maintenance for MOH facilities. District Council maintenance appeared effective for PHC facilities.
6.5 Equipment maintenance system operating	No performance indicators for equipment maintenance systems. Field visits would suggest problems in equipment maintenance for MOH facilities.

<b>Community Ownership and Participation</b>	
Increased community participation in health services management in Remote Areas.	
Indicator	Evaluation conclusion
7.1 Strengthened participation of communities in improving their health.	No evidence of strengthened participation. Evaluation field visit found mixed results, some health facilities with functioning Village Health Committees, others without. Generally there are systems for participation but they lack clear guidelines to define roles and responsibilities.
7.2 Functioning village health committees in remote areas	No evidence of functioning village health committees in remote areas identified. Lack of support from other stakeholders to mobilise and support community participation.
<b>Partnerships for Health Development</b>	
Increased partnership between Norwegian and Botswana institutions.	
Indicator	Evaluation conclusion
Continuing Institutional links between institutions in Botswana and institutions in Norway.	No evidence found of on-going links between institutions in Norway and Botswana
<b>Research for Health</b>	
Increased capacity to undertake health and health systems research. Cooperation agreement between MOH and University of Oslo.	
Indicator	Evaluation conclusion
9.1 Research outputs	Numerous research outputs, as publications by MOH and in international peer review journals reported.
9.2 Evidence of utilisation of relevant research results for decision making	No evidence found

Source: See Annex 4 for details.

### **3.4.1 Phase 1: 1975-1996 Summary Evaluation**

- *Relevance*

Ever since Independence Botswana has relied on a series of National Development Plans (NDP) to provide the road maps for development in the country. These NDPs are developed through a planning process that starts at community and district level (See Annex 4 for a description of the NDP Planning process) and, through democratic processes, culminates in them being approved by Botswana's Parliament. Successive NDPs have prioritised the capital development programmes for all sectors and highlighted the technical areas to be addressed during the following plan period.

All Norwegian contributions to the Botswana health sector during Phase 1 were in conformity with the priorities expressed in successive NDPs either, for capital

developments, included in the NDP capital development plan, or for systems, included in the narrative of health sector issues to be addressed.

Table 21 presents the pattern of spending of Norwegian development assistance to the health sector during phase 1.

**Table 21 – Norwegian Health Sector Programmes Expenditure Phase 1, by area of expenditure**

		NOK million	%	% (TA included)
A	Basic Health Services	44.0	17%	11%
B	Health Centres	46.0	17%	12%
C	Family Health Project (WB)	47.5	18%	12%
D	RADP	5.5	2%	1%
E	District Health Teams	10.0	4%	3%
F	Dental services	14.0	5%	4%
G	Hospitals	57.0	21%	14%
H	Pharmaceutical Sector	25.0	9%	6%
I	Study Health Status	2.5	1%	1%
J	Others	15.0	6%	4%
	<b>Total</b>	<b>266.5</b>	<b>100%</b>	
K	TA	130.0		33%
	<b>Total including TA</b>	<b>396.5</b>		<b>100%</b>

Source: See Annex 4 for details.

The stated health priority of the GOB throughout all NDPs has been the development of primary health care. Excluding TA, which cannot be easily allocated to area of expenditure, it can be seen that at least 58% of total Norwegian expenditure during Phase 1 was allocated to the development of basic primary services and the district level systems needed for their support (categories A- E above). While a further 14% were spent on hospitals, around half of these funds were spent on Primary Hospitals which can be considered as providing a largely primary level of care.

Norwegian assistance to Botswana during the period 1975 to 1996 was highly relevant.

- *Effectiveness*

The programmatic nature of Norwegian assistance to Botswana, with evolving targets of activities and outputs as the programme evolved each year makes it

hard to be specific over how effective the assistance was. However it can be stated that Norwegian assistance was highly instrumental in supporting<sup>35</sup>:

- The development of a network of health posts and health clinics that enabled the GOB target of 85% of the population having access to health care to be achieved by 1989.
- The establishment of district health systems through the provision of office accommodation, housing, communication networks and District Medical Officers, that enabled the health infrastructure to operate as a functioning referral network.
- The implementation of a programme of decentralisation of responsibility for the management of primary health services to district and town councils, through the Ministry of Local Government.
- The establishment of an effective pharmaceutical procurement system, through infrastructure and systems development and TA. The Norwegian support provided enabled the development of an infrastructure for drugs and pharmaceuticals distribution, systems for pharmaceuticals management and, for a number of years, TA to help manage the systems to lay a strong foundation for the operation of an effective drug supply system for over 20 years.
- The creation of an Oral Health Service focused on primary and secondary prevention of dental disease through the country. This was done by comprehensive programme that assisted in the design of the service and enabled the training of a cadre of dental therapists through the establishment of a training programme for them.
- The development of a Bio-Medical Engineering Unit that implemented a comprehensive equipment management programme.

- *Efficiency*

The length of time that has passed since the Norwegian programme was implemented makes it hard to come to concrete judgements about the efficiency of the Norwegian inputs between 1975 and 1996; however there are a number of factors that would have contributed to this.

- In 1975 Botswana is reported to have had a strong administrative system at central level with strong management systems and minimal political interference. Corruption was minimal. Botswana continues to score highly on the Corruption Perceptions Index, in 2010 it was ranked 33<sup>rd</sup>, the highest placed country in Africa<sup>36</sup>.
- Botswana used internationally accepted procurement procedures for the procurement of goods and services. These procedures were accepted as robust by Norway and used by the Government of Botswana for procuring infrastructure and other capital assets using Norwegian funds. Such procedures are recognised to provide the best value for money available.
- Norwegian funds were not tied to the procurement of Norwegian goods or to the use of Norwegian companies.

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35 See Annex 1 in Volume II for more details.

36 [http://www.transparency.org/policy\\_research/surveys\\_indices/cpi/2010/results](http://www.transparency.org/policy_research/surveys_indices/cpi/2010/results).

- Procurement procedures were implemented by the existing GOB bureaucracy; no parallel project implementation structures were established to manage Norwegian funds.
- Inputs were based on Botswana's own priorities as presented in successive NDPs. These priorities were appraised by NORAD but there were no separate Norwegian planning exercises.

Technical assistance constituted a third (by value) of Norway's support to Botswana. It was Botswana Government Policy (Rakner, 1996) that all expatriate staff, working for the government, occupied Civil Service posts and, due to the acute shortage of trained Botswana staff, formal counterparts were the exception rather than the rule. This may be seen as a wasted opportunity for the direct transfer of skills, but the situation at the time would seem to have warranted this. A similar situation continues where Botswana seems to be content to contract skilled personnel from abroad to work, for example, as doctors when there are inadequate numbers of Botswana to carry out the functions.

- *Sustainability*

While it is over fifteen years since Phase 1 finished and Norway's very active involvement in the development of the Botswana health sector tailed off, it is clear that Botswana has an enviable health care system with high levels of access, even for the sparsely populated rural areas. It has functioning systems to manage this network of health facilities and also a well-functioning pharmaceutical procurement and distribution system that have both been strong enough to cope with the very considerable increased demands placed on it by HIV/AIDS. Norway had a significant role in the early development of these systems. Compared to many African countries, Botswana is fortunate to have developed an economy that has been able to continue to support these systems and it has done so to a great extent.

The Botswana Oral Health Programme, designed and developed with the comprehensive support of Norway has continued to expand and now provides services nationwide.

The one significant exception to the successful Phase 1 inputs and activities seems to be the support to medical equipment management. Norway contributed significantly to the development of such a system and while no comprehensive reports of the current status of medical equipment management were seen, the anecdotal evidence collected by the team from facility visits, would suggest that the system developed with the help of Norway is no longer functioning as well as it did.

### **3.4.2 Phase 2: 1996-2012 Summary Evaluation**

The three discrete projects (the continuation of BOT008, BOT2201 and BOT 2202) that constituted Phase 2 were all planned and implemented as Institutional Cooperation projects that took a very different approach from the activities in Phase 1. As indicated previously, this was as a result of two factors; a policy change within Norwegian aid to start implementing aid projects through a new Institutional Cooperation approach to development assistance and also Botswana's graduation to Middle Income Country status.

While the constituent components of the first Institutional Cooperation Agreement BOT008<sup>37</sup> each had relatively well defined aims, objectives and activities that can to some extent be evaluated, it is clear that there was a higher purpose, set in Norwegian Policy Objectives (See Box below).

#### **The Change to an Institutional Collaboration approach by Norway**

A review of Norway's new approach to development cooperation (Centre for Partnership in Development 1998) highlighted two Norwegian policy statements that influenced the development of the new policy and, in turn, the design of Phase 2 of Norwegian support to Botswana:

*«Measures to strengthen important social institutions and organisations will be key areas of long-term cooperation. Institutional and human resource development will therefore be given greater emphasis as priority areas. In this connection, the Government considers it important to provide the best possible conditions for participation by a broad range of Norwegian expertise and institutions. Cooperation will not be limited to strengthening public institutions, but will also include institutions in business and civil society.»*  
(White Paper No. 19 to Stortinget 1995-96, p.42-43)

*Norad must actively encourage participation on the part of Norwegian organisational and institutional life in development work. By means of active participation on the part of Norwegian organisations and institutions, Norad will be able to draw upon competence, capacities and resources which we would otherwise not have access to. Through increased external participation, Norwegian society and public opinion in general will be enabled to identify themselves more strongly with, and show greater appreciation of Norwegian development cooperation and the challenges and problems which this entails.*  
(Norad, Strategies for Development Cooperation 1990.)

The Review encapsulated the on-going debate about the introduction of this new approach and indicated that the studies that had contributed to the Review had found a considerable lack of clarity and confusion of concepts involved in its implementation.

It would seem to this evaluation team that the Phase 2 activities supported by Norway suffered from 'the lack of clarity and confusion and concepts' identified by the 1998 review, cited above.

The following evaluation of the Phase 2 activities largely addresses the individual components of the Norwegian Support rather than the unstated overarching goals implied by the support.

- *Relevance*

The end of Phase 1 came shortly after the major expansion of Botswana's health network had been completed and the focus of NDPs in the health sector moved more towards issues of quality of care and improving the efficiency and effectiveness for the health service. These later concerns have been heightened

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<sup>37</sup> BOT008 had eight separate components, one of which was separated out to become BOT2201.



in the most recent NDPs as a result of the recognition of a tightening of resource availability and the escalating cost of a successful ART programme.

During Phase 2, Botswana continued to be reliant on expatriate doctors; only around 10% of doctors were Batswana. There was a desire, supported previously by Norway when it sought to localise the Norwegian TA with Batswana doctors, to reduce the dependence on foreign medical doctors which justified the support of Norway in providing undergraduate medical training.

HIV/AIDS reached crisis proportions in the 1990s and by the middle of the decade a multi-sectoral effort was mobilised, through a series of medium term plans, to coordinate efforts to fight this disease. The health sector had considerable responsibilities in the area of prevention, diagnosis and counselling, treatment of opportunistic infections and organising home based care.

All these issues were the focus of Phase 2 programme activities and thus it can be said that all the Norwegian inputs were relevant.

The Mid-Term Review (Moeti 1998) considered that all the project areas included in the agreements were relevant to the objective of improving quality of health care services.

- *Effectiveness*

For the Institutional Cooperation Agreement (BOT015 continued from 1996), the overarching focus was on developing a new modality for the inter-country collaboration. Within this overall framework, nine separate agreements between different institutions in Botswana and Norway were made. The relative weight, based on overall expenditure, is shown in Table 22.

**Table 22 – Norwegian expenditure on BOT015 Phase 2 activities, by separate project agreement area**

Components of BOT 015	Actual Expenditure to 2003 (NOK)	%
Medical Education	5,173,497	12%
Health Information System	2,755,000	7%
Quality Management	8,633,720	21%
Aids Prevention	1,273,664	3%
Community based AIDS Education	1,339,334	3%
Decentralisation Research	6,251,787	15%
Implementation of PHC	3,784,516	9%
Health System Research	2,181,761	5%
Coordination	3,700,412	9%
Direct costs by Norwegian Assistance	6,629,000	16%
<b>Total</b>	<b>41,722,691</b>	<b>100%</b>

Source: see Annex 4 in Volume II

The various project agreements, Mid-Term Review and annual reports suggest that the objectives and anticipated outputs of each agreement changed over time making an assessment of each sub-programmes success difficult. The Mid-Term Review (Moeti 1998) considered that, with a few exceptions, the component agreements were being executed effectively. The various annual reports (Otsweleng 2003, 2004, 2005) record a variety of achievements from each of the contracts. No final evaluation of the programme was carried out.

The programme to support training of Batswana medical doctors in Norway (started under BOT008, continued under BOT2201 and to be completed in 2012) saw the initial target of 50 doctors to be trained reduced to 35. Of the 35 students accepted for medical training in Norway, to date it is understood that 7 have left the programme, 13 have successfully graduated and 15 are still studying, scheduled to graduate in 2011 or 2012. At the time of writing this report, of the 13 successful graduates, three are known to have returned to work in the MOH in Botswana. The whereabouts of the remaining 10 is unknown (see Annex 4 for details).

Prior to embarking on medical training in Norway, the students sign an agreement with the Government of Botswana in which they undertake to return to Botswana upon successful completion of their studies. This agreement has so far not proved an effective mechanism to induce the graduates to return to work in Botswana.

If the objectives were to increase the number of Batswana doctors working in the public sector in Botswana, it has, so far, not been effective in achieving that aim. However, if the remaining 15 students successfully graduate and return to work in Botswana the success of the programme will improve.

The Mid-Term Review for the Human Resources Assistance Programme (Maphorisa 2007) concluded that the programme had made positive contributions to the delivery of Botswana's health services although the programme had diverged to some extent from its original intention of strengthening the ART roll out to address Botswana's need for other areas of medical expertise. The final project report (Otsweleng 2010) concluded that the support had made significant contributions to the Botswana Health System and some of its impact will be felt for many years to come. No indicators were developed to measure any outcomes of the programme.

- *Efficiency*

While there were some significant achievements from the several collaboration agreements during Phase 2, all the components had significant changes to their objectives and anticipated outcomes as implementation took place. The optimistic objectives and outcomes established at the beginning were rarely met for a variety of reasons. If this had been a conventional project, as in some aspects it was, one might put this downgrading of expectations during implementation to poor project design and optimistic timeframes that had not taken into account the institutional capacity limitations within the partner

institutions in both Norway and Botswana. However, as the programme seemed to be trying to develop a new form of collaboration (rather than just a conventional project) there seemed to be some confusion as to what it was trying to achieve. Addressing issues of institutional weaknesses in Botswana and depending on those weak institutions to drive the process seemed rather optimistic.

The Norwegian policy change to the Institutional Collaboration mode of development assistance was linked to the requirement that linkages should be with Norwegian Institutions. This may be seen as a return to tied aid which may have limited the efficiency of this programme. This is most obviously demonstrated with the medical doctor training programme which, with the need for language training prior to entering the medical school, had higher costs than attendance at English speaking medical schools would have had. This additional year for language training, on top of the already lengthy medical training programme, inhibited students from applying (Otsweleng 2004, 2010).

- *Sustainability*

The Mid-Term Reviews and Annual Reports reported a number of outputs from BOTO15 and 2201 that will have improved the performance of the MOH. Various policies and systems were developed that will have a lasting effect (see Annex 4 in Volume II for a discussion of these). In addition numerous innovations were introduced, particularly in the area of quality improvement, but a lack of appreciation of some of the constraints facing the MOH has meant that they have not been sustained. Apart from the continued link over medical doctor training, no longer term institutional links between Norwegian and Botswana organisations have been formed.

## 4. Conclusions and Recommendations<sup>38</sup>

### 4.1 Conclusions

It is the view of the Evaluation Team that the Norwegian support to Botswana from 1973 until 2011 can best be described as having taken place in two distinct phases. The support provided in Phase 1 (1972-1996) was in the form of Programme Assistance to the health sector as a whole. It constituted around 80% of the monetary value of all the Norwegian inputs over the three and half decades. The support provided in Phase 2 (1996-2011) was only 20% of the total financial input and was in a variety of forms – a discrete project to support the undergraduate training of Botswana medical doctors in Norway, the provision of temporary TA to assist Botswana to roll out a programme for ART and an attempt to foster a different sort of relationship between the two nations in the form of collaboration between similar organisations. The evaluation has come to separate conclusions for each of the separate phases.

#### 4.1.1 Relevance

Since Independence, Botswana has developed a succession of National Development Plans that have defined its development priorities. All NDPs have defined Botswana's priority for health care as being focussed on the development of a system based on the principals of Primary Health Care. A network of PHC facilities to enable access to services for a widely scattered and severely underserved population was the health priority for the early NDPs. All inputs provided by Norway during Phase 1 (1972-1996) were in accordance to the needs defined by successive National Development Plans.

It is calculated that at least 58% of total Norwegian expenditure was directed towards primary care and primary care support services (Table 21) during Phase 1 and a further 14% was directed toward the development of an effective pharmaceutical supply system, both of which contributed significantly towards achieving national targets of access to primary care services.

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<sup>38</sup> The questions posed by the Evaluation TOR were:

- To what extent has the assistance been responsive to the needs and expectations of the target users groups for assistance/ Botswana's needs? To what extent has Norwegian assistance contributed positively to the changes in the Botswana health system and health status in Botswana?
- To what extent has the assistance impacted on improvements in the health of the target user groups for assistance?
- To what extent has the Norwegian assistance impacted on the Capacity of the Botswana health care system to fulfil its core functions to improve and safeguard the health of its population?
- What has been the impact of the HIV and AIDS epidemic on the time path of the results of Norwegian assistance?
- To what extent have the improvements made at the user and the systemic levels prior to the onset of the HIV and AIDS epidemic contributed to the capacity of the Botswana Health Systems to handle the epidemic?
- How important the long-term character of the Norwegian engagement (the time period of engagement) has been in bringing about the changes in the health status of beneficiaries?
- What are the stakeholder perceptions of the achievements of Norwegian assistance?
- What are the stakeholder perceptions of the limitations of Norwegian assistance?
- To what extent was the Norwegian assistance used in a cost effective manner?

While still highlighting the importance of PHC, but having attained the NDP targets for access to health care, the emphasis for later NDPs, from NDP6 onwards, shifted towards the need for improvements in hospital care. This is reflected in the proportion of the Government Health Development Budget allocated to hospital and primary care over the period (Graph 13 and Graph 14). Norway contributed to this changed GOB priority and 21% of Norwegian funds were spent on hospital level support activities during the latter part of Phase 1.

Phase 2 activities were much more addressed to 'software' aspects of the system. The NDP's with their preoccupation with capital development activities, are less concrete for such soft inputs. The narrative of the NDPs did however highlight the issues that concerned the Government at the time of writing and all the components of the Phase 2 support from Norway can be seen as expressed as concerns in various NDPs.

A recurring feature of all of the successive National Development Plans has been the constraint placed by either a lack of human resources for health, in the earlier plans, or quality, in the latter plans, of health services. Apart from the specific cadre of Dental Therapists that was addressed in the 1980s, Norwegian Assistance was not involved in assisting Botswana to provide basic training for any cadres of health workers until the support for doctor training started in the mid-1990s and limited support for training Midwives, Laboratory and Pharmacy Technicians in around 2006. It may have been relevant for Norwegian Assistance to consider being involved in doctor, nurse and other major health workforce cadres earlier in the programme.

*Norway's assistance has addressed the expressed needs of Botswana in the assistance it has provided. Norway could not support all Botswana's health needs, but it may have been appropriate to consider support to HRH training early in the programme.*

The preparation of successive NDPs have been major exercises of bottom-up planning with a process starting with community discussions through Village Development Committees (Annex 4). The democratic processes at community, district and national level culminates in NDPs that are approved, and their performance monitored, by the National Parliament. No research was identified to assess how fully this planning process involved poor, rural and other marginalised populations, and it is these groups that in other countries tend to be less involved in such community processes.

*Effective democratic processes are in place in Botswana to enable Norway's target groups for assistance to have a voice in the planning of health services.*

#### **4.1.2 Effectiveness**

Health sector performance indicators in Botswana show significant performance improvements from 1970. By 1988, immunisation coverage rates for children under one year of age were above 90% for BCG, DPT, Polio and measles;

antenatal care coverage was 92% and 78% of births were attended by skilled health personnel (See 3.2.1 BFHS II 1988).

These sector performance improvements were accompanied, until around 1991, by a change in the disease profile for the country. The incidences of diseases of poverty, including those that can be prevented by vaccination, were reduced significantly and there was an increase in the importance of the life style diseases. These health gains were in turn reflected in improvements in life expectancy and falls in infant and child mortality rates until around 1991. Life expectancy at birth rose 10 years in the period 1971-1991 (Census 1971, 1991). In this same period infant mortality rate declined from 152 to 63 per 1000 live births and child mortality rate declined from 97 to 48 per 1000.

It is clear that health status in Botswana improved significantly in the period from independence until around 1991. This was also the period in which Norwegian support was highly significant, but the country was also making great strides in other spheres. The economy grew very significantly over this period with per capita income rising from USD 498 in 1974 to USD 5,000 in 1991, Literacy rates grew from around 40% to nearly 70% over the same period and, by 1997, 77% of the population had access to safe water supplies (Section 3.2.2 and 3.3.1).

Thus, many factors were contributing to the health gains up until 1991, but we can be certain that Norway's support to the development of a functioning primary care network at district level, through the provision of infrastructure and assistance to the development of effective district management systems contributed to people's access to health care. This is demonstrated by increased OPD attendance, increased rates of immunisation, ANC and supervised deliveries. The development of an effective pharmaceutical supply system to ensure the primary network functioned properly was also very important.

Despite the numerous advances that can be ascribed to the development of the PHC network, a number of weaknesses are apparent. The problems of high levels of malnutrition and poor sanitation remain significant problems in Botswana, problems that might, in part be addressed by the traditional PHC approach. Other factors, notably poverty and Botswana's extreme climate, play a part in these but addressing them will be necessary if Botswana is to regain its former momentum for health improvements.

*Norway's assistance has contributed positively to the development of the Botswana Health System. This was achieved principally through comprehensive support (infrastructure and systems) to the development of a functioning primary care health system enabling wide access for the people of Botswana. This was supported by the development of central systems, notably the pharmaceutical supply system, which enabled the effective functioning of the primary care network.*

*Health systems improvements, heavily supported by Norway (during key years in the development of Botswana's primary health care system, Norway was providing up to 90% of all health sector development expenditures), along with other factors contributed towards an improvement in health status for the people of Botswana.*

As indicated above, Health Status in Botswana improved from Independence until around 1991. The first case of HIV/AIDS was reported in 1985 and from 1991 the epidemic started to have a measurable effect on health status with mortality rates rising and life expectancy falling, by 2006, back to the levels experienced in 1971 (See Section 3.2.1.). There is no reason to suppose that if HIV/AIDS had not affected Botswana, health and health status would not have continued to improve. Several factors may have slowed down positive changes in health access:

- Prior to the advent of HIV/AIDS, the period during which Norwegian assistance was greatest, the country had gone some way to defeat the diseases of poverty. Disease patterns would suggest that the country was starting to undergo the epidemiological transition and was consequently starting to face the challenge of addressing the more difficult problems associated with diseases of life style. Prevention of such conditions is important, although difficult, and the challenge for treating such conditions is both more complicated and more expensive. It is likely that the upward trajectory of health status indicators, which was seen between 1971 and 1991, would have slowed as the health system was faced with these more complex problems.
- The country continues to face an unequal distribution of national income, recording a Gini coefficient suggesting a very unequal society (see Section 3.2.2). It is likely that this relatively high proportion of people living in poverty will continue to suffer much higher rates of morbidity and mortality until this inequality is successfully addressed. This is reflected in the poor coverage to improved sanitation and continuing high levels of malnutrition, factors that would have slowed future health improvements if not addressed.

*The HIV/AIDS epidemic has had a significant effect on the health status of the population of Botswana. The trends for significantly improved health, recorded up until 1991, have been reversed with many health indicators around the same levels as were recorded in 1971.*

When HIV/AIDS became a significant problem in Botswana, the country had achieved a very high level of access to health services through the expansion of a network of health posts, clinics and centres that enabled over 85% of the population to have reasonable access to health services. This network was utilised to provide the infrastructure necessary to be able to deliver preventive messages and treatment for opportunistic infections that were the only initial responses available to the health sector. Similarly a network of home based care volunteers was built around this existing infrastructure to provide care for people in their homes. However, given the evidence of high incidence of AIDS during the 1990s, this primary health care network, in common with the experience in many

African countries, was not particularly effective in changing people's attitudes and behaviour.

Botswana took advantage of the development of ART quite early and was successful in rolling out this programme widely and quickly, thanks in part to the same network of primary facilities and also the support of Norwegian public health doctors who provided on the ground support for the establishment of the ART programme at district level and beyond. This enabled AIDS victims to access ART close to their homes.

Despite the success of the ART programme, HIV and HIV related conditions continue to cause a high proportion of hospital admissions. A study, carried out in 1998, of 20 hospitals indicates that on average, 55 % of admitted patients had HIV related conditions with up to 80% in some medical wards and about 33% of paediatrics wards had HIV relevant conditions. The average length of stay was 9 days for AIDS patients and 5 for all patients. Hospital expenditure on drugs and other items have increased by about 40%.

Actual expenditure on essential medicines in current BWP per capita dramatically increased from 1991 to 2003 and more sharply from 2003 to 2009. However in USD terms, the expenditure remained constant at around USD 10 per head until 2003, but then doubled to USD 20 per capita by 2009 (Graph 20).

The AIDS epidemic has increased the pharmaceutical requirements for Botswana significantly with the need to procure drugs for the treatment of opportunistic infections as well as ARVs. It is estimated that the value of goods procured by the CMS has increased by approximately 50% and the total volume by 10-15 %. This dramatic increase in activity has been managed effectively by the CMS. Norwegian assistance was responsible for many aspects of the development of the CMS and thus can claim some credit for its ability to manage the considerable increase in pharmaceutical supply activity necessitated by the epidemic.

*The primary health care infrastructure, the district health systems, the presence of an effective pharmaceutical supply network all developed with Norwegian assistance along with the support of a significant cadre of doctors, enabled Botswana to respond more effectively to the HIV/AIDS epidemic, particularly with the introduction of programmes for ART and PMTCT.*

There is no evidence to suggest what the intention of Norway was in 1975, however from the beginning they took a programme, rather than a project, approach to their support to the Botswana Health Sector. In view of the lack of health infrastructure and systems as well as the scarcity of health human resources in Botswana in 1975, it seems likely that it was recognised that helping to develop the Botswana Health Sector was going to take a considerable length of time. The Programme approach taken enabled comprehensive support to be provided with its emphasis changing over time as new bottlenecks emerged. Initial support focussed on expanding the primary care network, but



this later evolved into support for the development of district health systems and then central systems in support of the district systems. Finally, in Phase 1, support was provided to the hospital sector. This approach had a significant beneficial effect on the development of the health services in Botswana and this, as we have argued elsewhere, will have contributed to improved health services delivery in Botswana and ultimately had some impact on health status.

It is widely recognised that the development and entrenchment of health systems takes time, particularly in country such as Botswana where there was such limited capacity at Independence. The long term involvement of Norwegian assistance enabled the new systems to become embedded into the rapidly developing health sector.

*It is the view of the Evaluation Team that the Programme Approach used as the mechanism for Norwegian Assistance for supporting the Botswana Health sector as a whole and the sustained period of the Norwegian engagement contributed significantly to the success of the first phase of their support (1975-1996). This will have contributed significantly to improved health services delivery in Botswana and ultimately had some impact on health status.*

The views of stakeholders in the Norwegian Programme of assistance to the health sector in Botswana were unanimous in their view that the support programme to develop the primary care network through infrastructure development and district health systems development was highly beneficial to the development of a well organised network of health services enabling access to health care virtually throughout Botswana. Stakeholders consider that it would not have happened without Norway's help or if another approach had been taken for providing that assistance. Similar views were expressed with regard to the assistance to the development of the pharmaceutical supply system and the Oral Health Service.

The lengthy period of association also enabled a sense of familiarity and trust to be engendered between the Norwegian TA and their Batswana co-workers within the MOH and the MOLG. In such an atmosphere it seems likely that Batswana officials were more open to ideas and initiatives put forward by the TA and Norwegian officials and consultants.

*Stakeholders were unanimous in the view that the Norwegian assistance to establish a functioning primary health care system was the most significant and beneficial contribution to the development of Botswana's health service. Similarly, the Norwegian support to develop an effective pharmaceutical supply network and their foresight in helping Botswana to develop an effective Oral Health Service were also seen as very significant contributions.*

While most Batswana stakeholders would like to maintain the longstanding relationship with Norway, there was recognition that circumstances necessitated

a change in the relationship. While a number of positive outcomes resulted from the Institutional Collaboration programme it was not an overall success in terms of sustained institutional relationships between organisations in the two countries. Despite this, it was felt that this more mature form of relationship may provide a model for future collaboration between the two countries. More consideration will need to be given as to how such collaboration can be sustained.

*There were few criticisms of Norway's support voiced. There was some disappointment expressed at what appeared to be the ending of what had been a close relationship, but an understanding as to why this should be so. Botswana Stakeholders would like to further explore the possibility of institutional links between the two countries.*

A long standing constraint to health services development, identified in every NDP as well as many Norwegian Assistance reports and evaluations, has been the issue of human resources for health. While Norwegian Assistance has been involved significantly in the training of dental therapists and, to a lesser extent and most recently, Midwives, Laboratory and Pharmacy Technicians it has had no significant involvement in the basic training of the most important cadre for the running of Botswana's health services, the nurses. In addition it was not until 1997 that Norwegian Assistance first actively assisted in the training of doctors. It is recognised that in the early years of the collaboration there would have been a very limited supply of school graduates available, and intense competition from all sectors to employ these graduates. Also it is possible that other donors were providing support for basic nursing training, but, with hindsight, it seems surprising that Norway did not get involved in nursing training in some way.

Despite its familiarity with the Botswana Health System and the country's well reported weaknesses in HRH capacity, the design of the Institutional Collaboration phase of support did not seem to take this into account. One of the stated objectives of this new (at the time) Norwegian policy was that the collaboration should be led by the Botswana partners. The limited HRH capacity in Botswana partner institutions made this difficult resulting in the individual programme components being driven largely by the Norwegian partners instead.

*Two possible criticisms of the Norwegian programme were the lack of early Norwegian involvement in the formal education of two key cadres of health workers, doctors and nurses; and the complexity of the design of the Institutional Development phase of the support.*

#### **4.1.3 Efficiency**

There are a number of factors that contributed to the cost-effectiveness of Norway's assistance to Botswana in the first phase (1975-1996).

- Botswana used internationally accepted procurement procedures for the procurement of goods and services. These procedures were used by the Government of Botswana for procuring infrastructure and other capital assets using Norwegian funds. Norwegian funds were not tied to the procurement of

Norwegian goods or to the use of Norwegian companies. Such procedures are recognised to provide the best value for money available.

- Procurement procedures were implemented by the existing GOB bureaucracy; no parallel project implementation structures were established to manage Norwegian funds.
- Inputs were based on Botswana's own priorities as presented in successive NDPs. These priorities were appraised by Norwegian Assistance but there were no separate Norwegian planning exercises.

The Evaluation Team considers that efficiency is a difficult criterion to assess the overall performance of the support provided for Phase 2, between 1996 and 2010. The 'lack of clarity and confusion of concepts' identified in the 1998 Review of the Institutional Cooperation approach adopted by Norway (Centre for Partnership in Development 1998) seems to apply to this phase of the support to Botswana.

*Phase 1 was probably implemented in a cost-effective manner. The lack of clarity in aims, objectives and anticipated outcomes make it hard to judge the cost-effectiveness of Phase 2 implementation.*

#### **4.1.4 Sustainability**

Botswana has an enviable health care system with high levels of access, even for the sparsely populated rural areas. While continuing to have its problems, it has functioning systems to manage this network of health facilities and also a well-functioning pharmaceutical procurement and distribution system that have both been strong enough to cope with the very considerable increased demands placed on it by HIV/AIDS. Norway had a significant role in the early development of these systems. Compared to many African countries, Botswana has been fortunate to have developed both an economy that has been able, and government policies that have been willing, to continue to support these systems.

The one significant exception to the successful Phase 1 inputs and activities seems to be the support to medical equipment management. Norway contributed significantly to the development of such a system and while no comprehensive report of the current status of medical equipment management was seen, the anecdotal evidence collected by the team from facility visits, would suggest that the system developed with the help of Norway is no longer functioning very well.

Norway's Phase 2 activities were overly optimistic in what they said they would achieve and implementation was accompanied by a gradual reduction in planned outputs and objectives. While some useful research was carried out, some practical policies developed and a number of useful and interesting concepts introduced to Botswana, institutional factors within the MOH meant that some of the more potentially valuable contributions made during this phase have not been sustained.

#### 4.1.5 Summary

Norwegian assistance during the period 1972-1996 took place in circumstances that are unlikely to ever be repeated in any other country in the future. However a number of features of the assistance, unusual at that time, contributed to its success.

The Norwegian assistance during Phase 1 was implemented as a Programme of Assistance rather than as a Project:

- It followed the planning priorities established through a transparent and participatory planning process.
- It was sector wide in that it addressed, to varying extents, the overcoming of key constraints to improve the effectiveness of the health system as a whole.
- It was flexible in that as one bottleneck was loosened, it moved on to address the next.
- It was implemented using the Government of Botswana's own procedures and systems with no separate project management structures.

It is to be noted that these features are in conformity with the Paris Accord of 2005, but were implemented well in advance of that agreement.

## 4.2 Recommendations

- *For future Norwegian Assistance*

The Programmatic approach taken by Norway and the success of Botswana's health services during the period up to around 1990 in improving access to health and contributing to significant health gains over the period serves to reinforce the correctness of the approach recommended in the Paris Accord of 2005 and the subsequent Accra Agenda for Action (2008). Norway is a signatory to these agreements and the findings of this evaluation are that Norwegian development cooperation should conform to the agreements in future development cooperation activities.

While the starting point, shortly after Independence, in Botswana was very low, the extended period of collaboration between Botswana and Norway in the health sector has enabled Botswana to develop and entrench robust systems of health administration. These showed their capacity in helping Botswana respond to the AIDS epidemic in an effective way, developing and widely introducing a major ART programme that would have been much harder without effective infrastructure and systems in place. It is the view of the evaluation team that developing and entrenching effective health systems takes time, longer than the normal project horizon of 3 – 5 years, and so where Norway hopes to assist other countries to develop health systems it should expect to be involved for a lengthy period.

- *Explore innovative ways for collaborating with middle-income countries, such as Botswana*

With regard to Botswana specifically, it is clear that the country's health system will face considerable problems over the coming years. Increasing demand for services, particularly the continued growth of the ART programme in the context of an economy that is unlikely to continue to be growing so fast, will place more strains on the health sector. The country will need to adapt to make services more efficient and effective; a painful process of health sector reform seems likely to be necessary. In the absence of major bilateral development partners, the country may have difficulties accessing support for such internal reforms that have more in common with the health reforms being undertaken in the developed economies than in other African States. Given the long history of association between Norway and Botswana it could be beneficial to Botswana if the legacy of trust and understanding between health professionals in the two countries could be built on to perhaps help Botswana undertake such reforms. Given the economic strength of Botswana, this could no longer be done through the traditional donor – recipient relationship and the challenge is to find a way in which the Institutional Collaboration model, tested during Phase 2, could be made to work using different funding and implementation modalities. This deserves further exploration.

If some effective mechanism for collaboration can be developed, other technical areas for future collaboration might be in further work on quality improvement, collaboration over the analysis of epidemiological data, aspects of nutrition as well as efficiency and effectiveness.

While a relatively small component in the overall context of Norway's assistance to Botswana, the training of medical doctors has, to date, been singularly ineffective in increasing the number of Botswana doctors working in the Botswana public health sector. It may be beneficial to undertake some research to try to locate the ten 'missing' graduates to see where they are and why they have not yet returned to Botswana. The lessons from this may be able to inform actions to improve the likelihood of the remaining students returning to Botswana when they graduate.

- *Future evaluation exercises*

This evaluation has faced difficulties when assessing some of the evaluation criteria due to a lack of, or changing, formally stated objectives, anticipated outputs and indicators of achievement for the Norwegian assistance. In the context of a programmatic approach this is not so surprising. In a programme approach, one would expect the Health Sector indicators to be used as the measure for judging the success of the support provided. To some extent it was possible to reconstruct such an approach for the Phase 1, although the successive NDPs set relatively few formal targets for health sector achievements. This problem also affected Phase 2, however this was not a programme approach but nor was it a conventional project approach; it was an attempt by Norway to introduce a new Institutional Collaboration approach which seems to have other, perhaps higher objectives, than are usually found in a

project. The lack of formally stated objectives, anticipated outputs and indicators of achievement made formal evaluation using DAC criteria, of Phase 2 of the programme as a whole difficult. If formal evaluations are required, Norwegian development assistance should be clearer about what the objectives, anticipated outputs and indicators of achievement are anticipated to be.

This evaluation was supposed, to an extent, to build on previous reviews and evaluations as a form of summary evaluation. These predecessor evaluations were of a variable value, partly due to the lack of clear objectives etc. for the programmes or projects they were evaluating but also because none consistently used DAC principals for evaluation to enable a clear conclusion to be drawn about the various inputs. The TOR for future evaluations should clearly state the requirement that it be conducted using the DAC principals.

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**Norad**

Norwegian Agency for  
Development Cooperation

Postal address

PO. Box 8034 Dep. NO-0030 OSLO

Visiting address

Ruseløkkveien 26, Oslo, Norway

Tel: +47 22 24 20 30

Fax: +47 22 24 20 31

No. of Copies: 250

[postmottak@norad.no](mailto:postmottak@norad.no)

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