BOTSWANA

MDG ACCELERATION COMPACT

IMPROVING MATERNAL HEALTH

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March 2013

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FOREWORD

This MDG Acceleration Compact[1] (also called MAF Action Plan)to accelerate the reduction of maternal mortality will enable Botswana to achieve our commitment by 2015. It is one of the follow-up actions to the Botswana Millennium Development Report of 2010. The Government of Botswana decided to accelerate its efforts with a focus on Millennium Development Goals (MDGs) that were either at risk of reversal, or were lagging behind, such as maternal mortality.

Maternal mortality leads to a loss in potential national productivity with spillover effects on newborn mortality rates and child development, and thus on the development of the nation. It must therefore be addressed from a development approach and not treated as merely a medical issue.

This MAF Action Plan complements work already ongoing in the area of maternal health. It is important that one reporting mechanism using the existing structure be utilized to ensure effective coordination and avoidance of duplication. Accordingly, the Government would take responsibility forthe oversight and accountability of the MAF Action

We have long known where the problems are; we now know the solutions and how best to sequence them. We have long known that maternal audits – on maternal deaths or near-deaths – provide lessons learned for our medical personnel and institutions to better manage and deliver care and support; we now know that we must hold our medical personnel and institutions accountable for putting these lessons into practice.We have long known that emergency obstetric care holds the promise to reduce maternal deaths; we now know that we must make it work better. We have long known that the Government is committed to maternal health; we now know that the increased engagement of Parliament and the leadership of the Ministry of Health and of the Ministry of Finance and Development Planning will keep maternal health on the agenda.

1. The MDG Acceleration Compact is a shared action plan involving stakeholders generated through the MDG Acceleration Framework (MAF) process. It is a compact because the actions in the plan are agreed upon and implementation is expected to be synergetic.

It is to our delight that the entire United Nations in Botswana has accepted to work with our Government synergistically, as one unit. It is when we approach the issue of maternal mortality together and jointly take actions that we can achieve our goal.

I wish to thank the following colleagues who put this document together: Haruna Baba Jebril, Veronica Leburu and Botumelo Thipe, MaboleMasweu, Jessica Setswalo and Tshiamo Keakabetse from the Ministry of Health; Tapologo Baakile from the Ministry of Finance and Development Planning; Rogers Dhliwayo from the United Nations Development Programme (UNDP); Colleta Kibassa from UNICEF; Lucy Maribe from WHO; Kabo Tautona and Moses Keetile from UNFPA; as well as the consultant Frederick Mugisha. The technical support, oversight and coordination from Ayodele Odusola (MDGs Adviser, UNDP Regional Bureau forAfrica) is also acknowledged. The editorial role of United Nations consultant Barbara Hall and logistic support from Jonas Mantey and Yechi Bekele are equally appreciated.

I pledge to continue this partnership with our development partners. Building on these lessons, the Government will develop similar compacts for the development goals that continue to be a challenge for us.

I thank you.

Signature

Hon. Dr. John Seaakgosing
Hon. Minister of Health
Government of Botswana

PREFACE

We at the United Nations do not take our partnership with the Government of Botswana for granted. We are committed to working together to accelerate the reduction of maternal mortality and towards achieving all other MDG goals that may be lagging behind or at risk of reversal. This is why we see it fit to work jointly and synergistically as a United Nations system rather than as individual agencies. This MDG Acceleration Compact is a clear demonstration of this commitment.

The United Nations developed the MDG Acceleration Framework (MAF) as a tool to contribute to this acceleration process. The solutions in this Compact are strong enough to make great progress in the right direction.

The timing of this Compact is appropriate – just as we are finalizing our mid-term review of the United Nations Development Assistance Framework (UNDAF) as well as of the Government of Botswana–UN Programme Operational Plan (UNPOP 2010–2014). This mid-term review will provide a sufficient basis to undertake the actions in this Compact.

Botswana will provide Post-2015 Development Agenda leadership in the area of health. It is important, therefore, that the United Nations and the Government of Botswana show that Botswana has provided leadership both in words and action.

I trust that this Compact, in addition to serving as a lesson to help us achieve our target, will also be considered a tool for achieving other MDGs that are either lagging behind or at a risk of reversal.

Anders Pedersen
United Nations Resident Coordinator

EXECUTIVE SUMMARY

This MDG Acceleration Compact[2] is a joint commitment by the Government of Botswana and the United Nations to reduce maternal mortality to a third of its current rate in just three years, towards the 2015 target. It provides specific high-impact actions in the near term that are politically feasible to implement, with technical and financial commitment for each action.

Statistics Botswana estimates that 189 women die due to pregnancy-related causes for every 100,000 live births. Compared to many African countries, Botswana is doing much better; however, compared to its peers in the upper middle-income economies, Botswana is among the worst – ranking 40 out of 44 countries. It is only better than Ecuador, Namibia, Gabon, South Africa and Angola.

The data for Botswana are few and clear, which makes the Compact easy to implement. It is estimated that 99 per cent of all births occur in health facilities, and the remaining 1 per cent of non-institutional births mainly occur in the Ghanzi District (Statistics Botswana 2011). All maternal deaths reported occurred in health facilities, 97.5 per cent of which were due to excessive bleeding, obstructed labour, uterine rupture and hypertensive disorders – all of these causes could have been effectively managed at these facilities.

Emergency obstetric care – i.e. treatment for pregnancy and delivery complications – is not provided at its full potential. Although it is the main intervention carried out in health facilities, almost all maternal deaths occur there due to these complications.

However, two other interventions must support emergency obstetric care: conducting maternal death audits and strengthening commitment and accountability. Like other audits, maternal death audits delineate underlying factors – health, social or management – that cause death. The audit enables individuals and institutions to enhance their professional practice in managing maternal conditions to avoid mortality. The lessons learned are integrated into the practice of emergency obstetric care. Greater commitment, better management and more accountability are required at the individual, health facility and district levels, as well as at the Ministry of Health, the Ministry of Finance and Development Planning. In addition, accountability is also required from the Parliament Committees responsible for health and coordination of the MDGs to improve the practice of emergency obstetric care.

Specific constraints and solutions for their removal to each of the interventions have been examined. Examples of high-impact and politically feasible solutions include: translating the maternal audit reports into advocacy and resource mobilization tools; taking into consideration the skills and experience of medical staff (doctors and nurse midwives) when transferring them; training health care managers in the art and practice of management and accountability; and supporting champions of maternal health in governance structures including Parliament and District Councils. These solutions provide a response to specific constraints, and are detailed in this Compact.

2. The MDG Acceleration Compact is a shared action plan involving stakeholders generated through the MDG Acceleration Framework (MAF) process. It is a compact because the actions in the plan are agreed upon and implementation is expected to be synergetic.

I. INTRODUCTION

THE COMPACT:

In 2008, Botswana published the National Roadmap for Accelerating the Reduction of Maternal and Newborn Mortality and Morbidity in Botswana (MOH Botswana 2008). In 2010, the Government of Botswana and the United Nations developed a joint programme operational plan. This Compact, which involves the Government of Botswana and its development partners, is therefore not a new framework; rather, it is a joint action among actors who bring together high-impact and politically feasible solutions to constraints that prevent interventions from achieving their full potential. It provides steps for maximizing synergies, some of which are concurrent.

The Compact is a consequence of making the MDG Acceleration Framework (MAF) operational. Under the leadership of the United Nations Development Programme (UNDP), the United Nations System, based on request from national institutions, developed the MAF to assist countries in making accelerated efforts towards the set targets. In 2010, a global review of this progress was undertaken on the eight development goals and associated targets that countries agreed to achieve by 2015. Botswana provided significant input in this review with the publication of the Botswana Millennium Development Goals Status Report of 2010. At the time, it was reported that Botswana made great strides in most of the MDG targets but that progress towards some targets was too slow, including target 5.A, to reduce by three quarters the maternal mortality ratio.

The MAF is applied to what a country considers to be the most off-track MDG targets that could be accelerated in a medium term. Countries chose the targets to focus on, and Botswana chose reducing the maternal mortality ratio. The purpose of the MAF is basically to identify and harvest 'low hanging fruit', i.e. easily attainable goals. It focuses on removing constraints to the implementation of current interventions. For example, although emergency obstetric care in Botswana is provided with adequate facilities, maternal deaths still occur. Whether this is due to lack of appropriate skills or essential inputs out of stock, the MAF helps to identify and prioritize such constraints and indicate solutions.

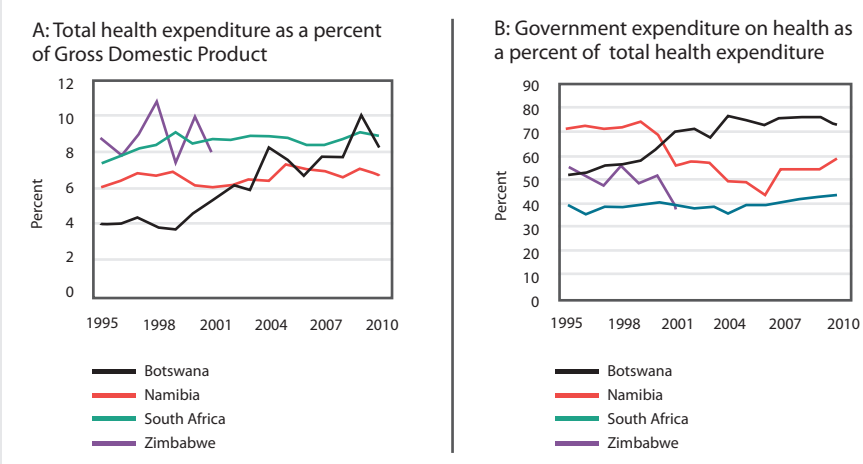
The MAF has four steps. In step 1, country-specific interventions are prioritized. In step 2, bottlenecks – or removable constraints – to the effective implementation at scale of the prioritized interventions are identified and prioritized. In step 3, feasible acceleration solutions to overcome the prioritized bottlenecks are selected. Finally, in step 4, an implementation and monitoring plan is developed.

BOTSWANA IN CONTEXT:

Botswana prides itself as being an upper middle-income country. However, as the recent global economic crisis has demonstrated, global effects can derail even a well-intentioned and resourced country like Botswana. In addition, at the stage of development that Botswana has attained, issues of maternal health require specific concerted efforts. In other African countries that are still classified as low income, extending a road into the hinterland or building a health facility with one nurse can significantly reduce the maternal mortality rate. In Botswana, the same effort cannot achieve a similar effect because the levels of maternal mortality are much lower than in these countries, but among the worst within the category of upper middle-income countries.

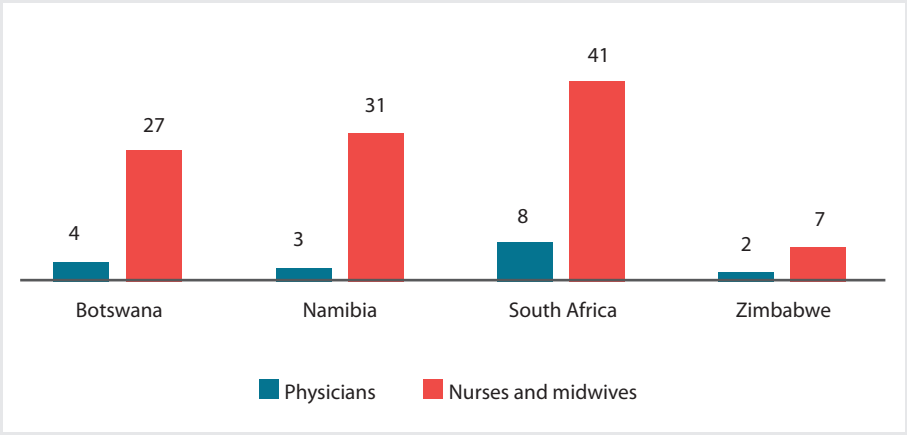
Compared to the neighbouring countries, Botswana allocates a large proportion of its budget to the health sector. **Figure 1** shows that, in 2009, whereas South Africa consistently spent the most as a percentage of gross domestic product (GDP), Botswana surpassed all its neighbours. Compared to its neighbours, the Botswana Government contributes a higher percentage to the total health expenditure (at over 70 per cent) than South Africa (less than 50 per cent). Because the Botswana Government contributes a larger share, efficiency within the public sector is of paramount importance. However, the situation is slightly different with health personnel. As shown in **Figure 1**, Namibia and South Africa have more nurses and midwives for every 10,000 people than Botswana.

FIGURE 1: HEALTH EXPENDITURE IN BOTSWANA COMPARED TO ITS NEIGHBOURING COUNTRIES



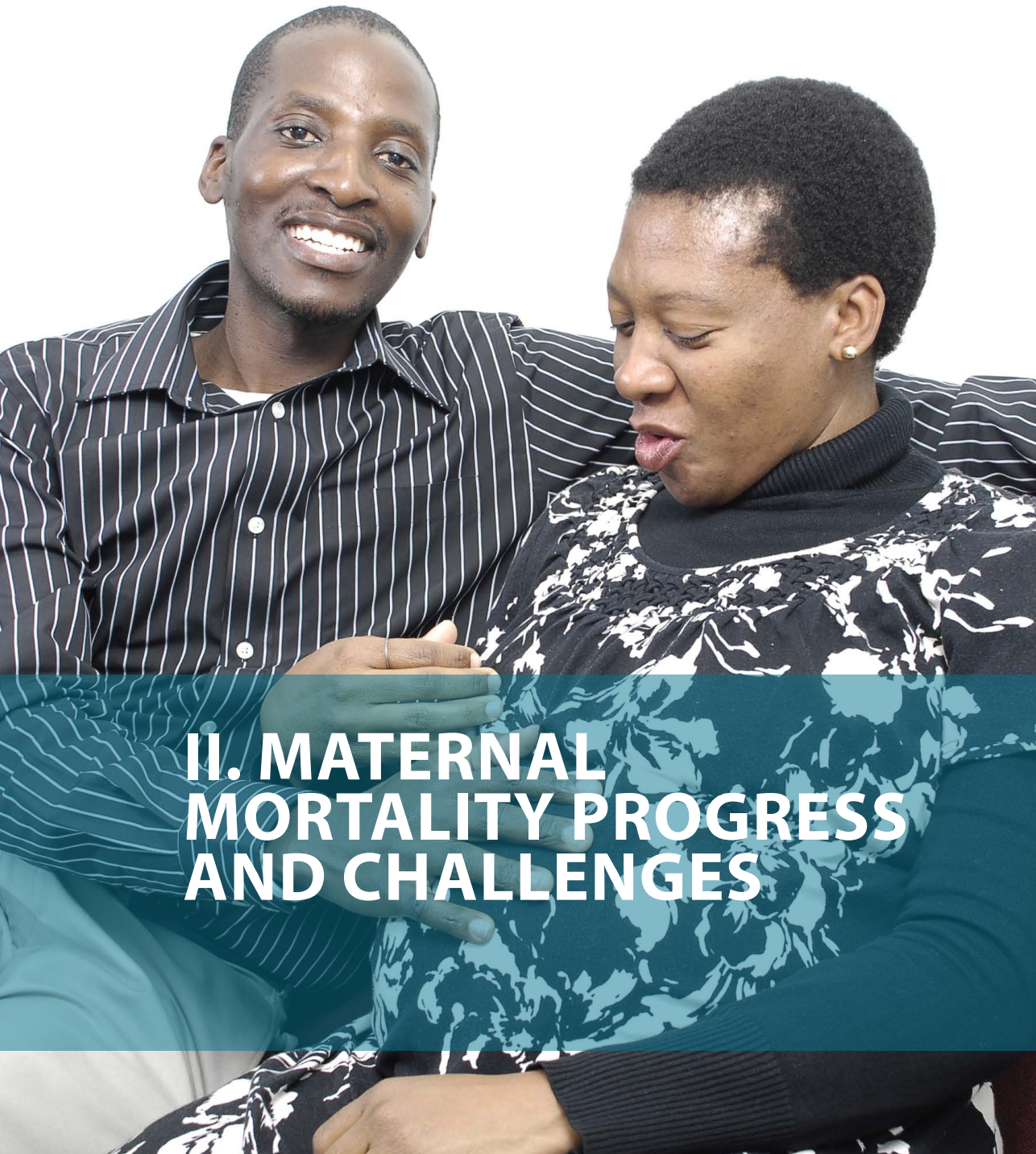
Source: http://apps.who.int/nha/database/DataExplorerRegime.aspx

FIGURE 2: DENSITY OF HEALTH PERSONNEL PER 10,000 POPULATION



Source: World Health Statistics 2009, World Health Organization

The rest of the report focuses on the application of the MAF and is organized as follows. Chapter 2 focuses on clarifying issues related to maternal mortality in Botswana and provides a basis for identifying and prioritizing interventions. Chapter 3 focuses on identifying and prioritizing interventions. Chapter 4 discusses constraints in the prioritized interventions to the achievement of their full potential in Botswana. Chapter 5 identifies and sequences solutions to constraints prioritized in Chapter 4. Finally, the acceleration plan is developed in Chapter 6.

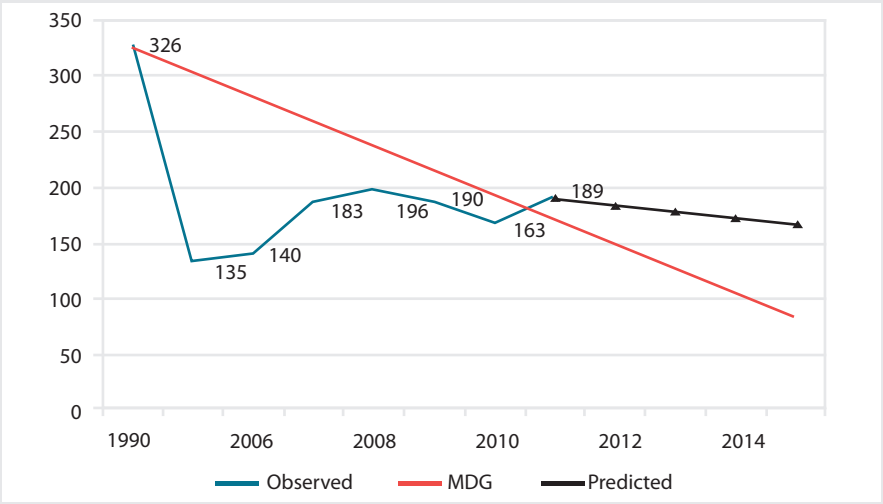


II. MATERNAL MORTALITY PROGRESS AND CHALLENGES

2.1 PROGRESS AND CONTEXT

Botswana's main maternal health challenge is to reduce maternal deaths that occur in hospitals and clinics. Other maternal health indicators, notably family planning and assisted delivery, have made significant progress and are on track to be achieved by 2015: for example, 94.6 percent of births in the country are attended to by skilled personnel (GOB 2010) and contraceptive prevalence is estimated at 52.8 percent.[3] However, progress in maternal mortality is off-track: for example, between 1990 and early 2000, maternal mortality dropped from a high of 326 deaths per 100,000 live births to 135 deaths per 100,000 live births in 2005, but has since increased to 163 deaths in 2010 and 189 deaths in 2012, as shown in **Figure 3**.

FIGURE 3: THE MATERNAL MORTALITY RATIO IN BOTSWANA – THE OBSERVED, MDG AND PREDICTED PATH



Source: Compilation based on GOB (2010) and Statistics Botswana (2011);
Note: "Observed" path depicts the estimated maternal mortality Ratio; the "MDG" path is what is expected to achieve the set reduction by 2015; and the "predicted" path is what is predicted based on the observed maternal mortality ratio.

As shown in **Figure 3**, there is a highly volatile trend in the maternal mortality ratio: some years there is an improvement, while in others, there is the reverse. Consequently, the target of 82 per 100,000 live births is unlikely to be achieved even if the rate of decline observed in 2008–2011 is maintained. This is precisely why acceleration efforts are required if the 2015 target of reducing the maternal mortality ratio to 82 per 100,000 live births is to be achieved. The economic success of Botswana is not consistent with the high maternal mortality rate as an upper middle-income economy (Chanda, undated) with respect to the 44 upper middle-income economies for which comparable maternal mortality estimates are available; Botswana is only better than Ecuador,

3. http://www.indexmundi.com/facts/botswana/contraceptive-prevalence

Namibia, Gabon, South Africa and Angola,[4] ranking 40 out of 44 countries. Botswana has made progress in almost all MDGs (see **Table 1** and **Annex 1**). It has already achieved or is likely to achieve targets for MDGs 1, 2, 3, 6, 7 and 8; however, it is unlikely to achieve under-five and infant mortality targets (MDG 4) and the maternal mortality target (MDG 5) (see **Table 1**).

TABLE 1: THE LIKELIHOOD THAT THE MDG TARGETS WILL BE MET

Goal	Global Target	Likelihood that target will be met
MDG 1 : ERADICATE EXTREME HUNGER POVERTY AND HUNGER	Halve, between 1990 and 2015, the proportion of people whose income is less than US$1.00 per day.	Achieved
	Halve, between 1990 and 2015, the proportion of people who suffer from hunger.	Likely
MDG 2 : ACHIEVE UNIVERSAL PRIMARY EDUCATION	Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling.	Likely
MDG 3 : PROMOTE GENDER EQUALITY AND EMPOWER WOMEN	Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015.	Achieved
MDG 4 : REDUCE THE UNDER-FIVE MORTALITY RATE	Reduce by two thirds, between 1990 and 2015, the under-five mortality rate.	Unlikely
MDG 5 : IMPROVE MATERNAL HEALTH	Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio (MMR).	Unlikely
	Achieve by 2015, universal access to reproductive health.	Likely
MDG 6 : COMBAT HIV/AIDS, MALARIA, AND OTHER DISEASES	Have halted by 2015 and begun to reverse the spread of HIV and AIDS.	Likely
	Achieve, by 2010, universal access to treatment for HIV and AIDS for all those who need it.	Likely
	Halt by 2015 and begin to reverse the incidence of malaria and other major diseases.	Likely (malaria); unlikely (TB)
MDG 7 : ENSURE ENVIRONMENTAL SUSTAINABILITY	Halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation.	Achieved
	Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss.	Likely
	Integrate the principles of sustainable development into country policies and programmes to reverse the loss of environmental resources.	Likely
MDG 8 : DEVELOP A GLOBAL PARTNERSHIP FOR DEVELOPMENT	Develop further an open, rule-based, predictable and non-discriminatory trading and financial system.	Likely
	In cooperation with the private sector, make available the benefits of new technologies.	Likely

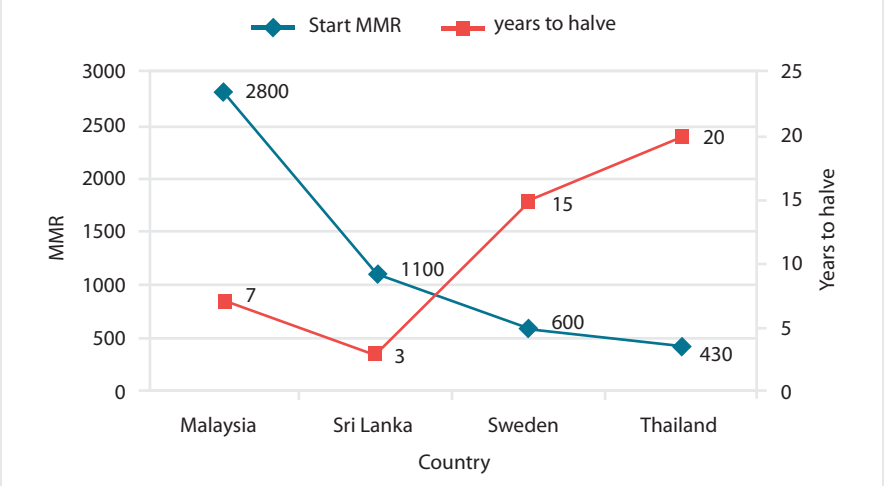
Source: Botswana 2010 MDG Status Report and Government of Botswana -United Nations Programme Operation Plan 2012- Mid -term Review.

4. Own computation: Maternal mortality ratio estimates based on WHO et al. (2010); "Trends in Maternal Mortality: 1990 to 2008 – Estimates Developed by WHO, UNICEF, UNFPA and The World Bank"; Ranking of economies based on World Bank data.

The progress on other MDGs has been a result of sustained investment in socio-economic development. The Government's Vision 2016 continues in the same tradition of sustained investment in socio-economic development. It is therefore important to note that further investment in infrastructure and poverty reduction strategies may not led to further declines in maternal mortality. Sustained, systematic and stepwise strategies to improve organizational and clinical management within the health sector and targeted efforts from other sectors of the economy will likely lead to further progress. Experience from other countries, notably Malaysia and Sri Lanka, suggest that this is indeed the case (Pathmanathan, Liljestrand et al. 2003). In the 1950s, these countries experienced a rapid and sustained decline in maternal mortality primarily due to investment in social and economic development in which health and social services were provided to the poor. In both countries, it took less than seven years to half the maternal mortality because the starting point was quite high. In Malaysia, the starting point was 2,800 maternal deaths per 100,000 live births, compared to 1,100 in Sri Lanka. As the starting point becomes lower, the time needed to half the maternal mortality ratio is also longer. For example, it took Sweden 15 years and Thailand 20 years to halve the maternal mortality ratio from 600 and 430 maternal deaths per 100,000, respectively (see **Figure 4**).

In Malaysia and Sri Lanka, further progress was due to systematic and stepwise strategies to improve organizational and clinical management. For example, it took Malaysia six years to halve the maternal mortality ratio starting from 125 maternal deaths per 100,000 live births, and Sri Lanka 12 years starting from 230 maternal deaths per 100,000 live births. Botswana has the challenge not only to reduce maternal mortality to one third of its current rate, but also to do so in approximately three years.

FIGURE 4: **TIME NEEDED TO HALVE THE MATERNAL MORTALITY RATIO IN SELECTED COUNTRIES**



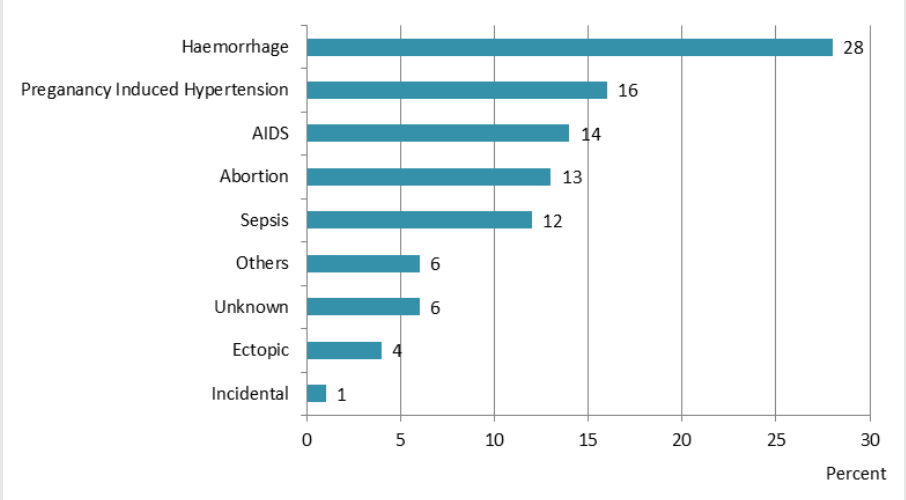
Source: Pathmanathan and Liljestrand, et al. (2003).

2.2 ISSUES AND CHALLENGES

There is sufficient evidence that almost all maternal deaths occur in health facilities (institutional deaths). It is estimated that 99 per cent of all births also occur in health facilities, and the remaining 1 per cent of non-institutional births mainly occur in the Ghanzi District (Statistics Botswana 2011). The cause of women's deaths in health facilities are obstetric hemorrhage, pregnancy-induced hypertensive disorder, complications of AIDS and sepsis (83%). Complications of AIDS are mainly due to diagnosis at an advanced stage and therefore the non-use of antiretrovirals (ARVs). **Figure 5** shows the causes of maternal deaths as reported in the 2008 National Maternal Mortality Audit Committee Report. The National Maternal Audit Committee highlights two points: much can be improved in facilities without additional costs such as referral decisions made at the right time to save lives; and sub-standard care such as lack of skills, missed diagnosis, mismanagement and poor monitoring can be reduced if protocols and guidelines are followed, most of which can be managed successfully at health facilities. Even though only 1 per cent of deliveries occur outside health facilities, there are no statistics on maternal deaths for this category. There is a need to obtain data on the 365 non-institutional births estimated in Ghanzi District (2010 estimate).

In general, mothers die in health facilities due to sub-standard care and poor decisions in the referral process – together these reasons account for seven out of ten maternal deaths (see **Table 2**). The substandard care and delay in referral decisions are due to, *inter alia*, lack of skills, missed diagnosis, mismanagement and poor monitoring (National Maternal Mortality Audit Committee) affecting the quality of care in the country.

FIGURE 5: **PERCENT DISTRIBUTION OF MATERNAL DEATHS – AUDIT REPORT**



Source: Ministry of Health, 2008; National Maternal Mortality Audit Committee Report, Botswana.

TABLE 2 : **NO. OF MATERNAL DEATHS AND CONTRIBUTING FACTORS**

Contributory factor	PPH	Pre -Eclampsia	Abortion	Sepsis	Total
a) Delay in seeking care	1	2	6	5	14
b) Delay in decision/referral	5	21	1	1	27
c) Sub-standard care (lack of skills, missed diagnosis, mismanagement, poor monitoring)	8	3		9	21
d) Lack of blood/ products	3				3
e) Lack of drugs and uristix		1			1
Total	**17**	**27**	**7**	**15**	**66**

Source: Ministry of Health, 2008; National Maternal Mortality Audit Committee Report, Botswana.

Policy issues, health infrastructure and culture are not impediments to preventing maternal mortality. For example, Botswana published the National Roadmap for Accelerating the Reduction of Maternal and Newborn Mortality and Morbidity in Botswana (MOH Botswana 2008). It also has a well-developed health infrastructure in terms of buildings and interconnectivity. Maternal health services are provided at clinics with maternity care (102 units), primary hospitals (18 units), district hospitals (13 units) and referral hospitals (two units). An additional set of health facilities without maternity services provide referrals, which include 157 clinics, 340 health posts and 810 mobile stops. In addition, about 95 per cent of the population live within an 8-km radius of a health facility. Public health services are provided free or at a minimal charge. Emergency referral systems are in place countrywide (including telephones, transport systems, and protocols for early recognition of dangers). In 2007, antenatal care (ANC) was near universal in Botswana, at 94 percent, while the rate for postnatal care attendance was 85.2 per cent. In 2008, 98.3 per cent of deliveries were handled by skilled birth attendants.

2.3 THE NEED FOR ACCELERATION

Without any acceleration efforts, maternal mortality will likely reduce but not at the rate required to meet the 2015 target; it may reduce in response to general development within the country. However, given that Botswana experienced a reversal in maternal mortality, there is need for concerted efforts to reduce maternal death so as to be on-track to achieve the target in 2015.

III. STRATEGIC INTERVENTIONS

3.1 INTRODUCTION

In this context, an intervention is defined as the delivery of goods, services or infrastructure to achieve significant reduction in maternal deaths in three years, that is, up to 2015. The MAF prioritizes interventions that have near-term impact, in this case, three years. In Botswana, the three interventions that will provide significant return are: improving provision of emergency obstetric care across all facilities; ensuring that maternal audits are conducted for each maternal death; and increase commitment to ensure accountability and mobilize additional resources. These interventions will improve organizational and clinical management related to pregnancy complications in health facilities (see **Annex 2**). A scorecard for the three interventions as well as other interventions is shown in **Table 3**. In terms of accelerated impact, green indicates the greatest near-term impact, while red indicates no impact. Amber green indicates high impact and amber red, limited impact. Similarly, in terms of feasibility, green indicates greatest feasibility and red, lesser feasibility. Amber green indicates some feasibility while amber red indicates limited feasibility.

TABLE 3: BOTTLENECK SCORECARD FOR ADDRESSING MATERNAL MORTALITY IN BOTSWANA

Strategies (interventions)	Accelerated impact	Feasibility	Rank	Chosen?	Potential action
An audit is conducted for each maternal death, actions done and accountability for the actions ensured			1	Yes	Proceed to step 2
Improve the quality of Emergency Obstetric Care across all facilities			2	Yes	Proceed to step 2
Increase commitment and accountability			3	Yes	Proceed to step 2
Strengthen utilization of policy standards and service guidelines			4	No	No further action
Strengthen the supply chain management and ensure adequate supplies and equipment			5	No	No further action
Strengthen an efficient system of communication referral system			6	No	No further action
Empower communities to ensure continuum of care between household and health facility			7	No	No further action
Strengthen services that address adolescent's sexual and reproductive health services			8	No	No further action

Green	Achieves acceleration of progress
Amber Green	Potentially achieves acceleration of progress
Amber Red	Probably does not help acceleration
Red	Does not help acceleration

The Scorecard is based on an assessment of the expected accelerated impact and the feasibility of implementation. Only the profiles of the three interventions are presented (see **Figures 6–8**). The green indicates the greatest impact or feasibility, and red, the contrary. Amber green indicates high impact or feasibility, while amber red indicates limited impact or feasibility. (The color legend is described in detail in **Annexes 3** and **4**.)

FIGURE 6: INTERVENTION PROFILE FOR MATERNAL MORTALITY IN BOTSWANA – THE MATERNAL AUDIT

Intervention 1: An audit – according to established procedure - will be conducted for each maternal death as a way to learn from mistakes and enhance professional practice in managing maternal conditions. Appropriate management action (e.g. training; support in equipment or medicine or backstopping; and discipline) to ensure everyone is personally and institutional accountable to action.

Accelerated impact	Overall	Feasibility	Overall
Incremental outputs and outcomes - High impact because no two maternal deaths separated by time (e.g. month) should be allowed to happen if they are of similar circumstances		**Governance** - Strong political will among government and partners, however accountability has to be strengthened at health facility level	
Beneficiaries (population impacted) - all maternal deaths are audited; estimated at 80 per year on average.		**Capacity** - Current coordination is not effective, but with technical, management, and financial support will ensure implementation across all levels	
Speed of impact and ability to accelerate - within 24 months, maternal deaths will have reduced to a quarter (from 82 to 20 deaths)		**Funding availability** - Development partners have expressed interest in targeted support, however government will have to mobilize additional resources	
Evidence of impact - intervention was successfully implemented in Malaysia		**Additional factors** - strengthening of emergency obstetric care and accountability for action will have to be strengthened.	

FIGURE 7: **INTERVENTION PROFILE FOR MATERNAL MORTALITY IN BOTSWANA – EMERGENCY OBSTETRIC CARE**

Intervention description: Improve the quality of emergency obstetric care across all facilities and establish a mechanism of learning from mistakes and enhance personal and institutional professional practice in managing maternal conditions. Ensure that at each stage in the process – monitoring and preventing complications; diagnosis (investigation and tests); intervening (medicine, surgery or referral); recovery and rehabilitation (including domicile services) – the value chain does not break.

Accelerated impact	Overall	Feasibility	Overall
Incremental outputs and outcomes - High impact due to the fact that almost all deaths happen in health facilities and amenable to emergency obstetric care		**Governance** - Strong political will among government and partners, however accountability has to be strengthened at health facility level	
Beneficiaries (population impacted) - About 99% of births happen in health facilities, and therefore accessible		**Capacity** - Current coordination is not effective, but with technical, management, and financial support will ensure implementation across all levels	
Speed of impact and ability to accelerate - within 12 months, 10 hospitals with the highest maternal deaths will be equipped to provide emergency obstetric care		**Funding availability** - Development partners have expressed interest in targeted support, however government will have to mobilize additional resources	
Evidence of impact - countries (e.g. Mali, Tanzania and Somalia) who identified the right constraints have reduced maternal mortality		**Additional factors** - strengthening of emergency obstetric care and accountability for action will have to be strengthened.	

FIGURE 8: **INTERVENTION PROFILE FOR MATERNAL MORTALITY IN BOTSWANA – INCREASED COMMITMENT AND ACCOUNTABILITY**

Intervention 3: increase commitment and accountability. Ensure health facility management, the Ministry of Health, Governance Councils (e.g. district and national parliament) access and use the maternal audits to show more commitment and accountability. Establish a budget line within the Ministry of Health to coordinate maternal health; and the coordination across actors..

Accelerated impact	Overall	Feasibility	Overall
Incremental outputs and outcomes - With increased commitment will amplify the effect of maternal audits and emergency obstetric care		**Governance** - Strong political will among government and partners, however accountability has to be strengthened at all levels	
Beneficiaries (population impacted) - About 99% of births that happen in health facilities and those that are at risk of maternal death		**Capacity** - Current coordination is not effective, but with technical, management, and financial support will ensure implementation across all levels	
Speed of impact and ability to accelerate - within six months, funds appropriately targeted; accountability framework instituted		**Funding availability** - Development partners have expressed interest in targeted support, however government will have to mobilize additional resources	
Evidence of impact - Intervention has been successfully implemented in Malaysia, Sri Lanka, Bolivia, Yunan in China, Egypt, and Jamaica (Pathmanathan and Liljestrand 2004)		**Additional factors** - strengthening of emergency obstetric care and accountability for action will have to be strengthened.	

The three interventions work in synergy; the first two have established national guidelines. The challenge, however, is that the entire chain of actions with respect to maternal audits and emergency obstetric care is not always complete. The primary activities in the value chain as shown in **Figure 9** are the most important ones towards making emergency obstetric care efficient in order to reduce maternal deaths.

This intervention, i.e. the implementation of emergency obstetric care, must be supported strongly by a maternal audit and increased commitment. The maternal audit will ensure that any gaps in the chain are closed by integrating lessons learned and actions that are part of the audit. For example, if the gaps are closed at all levels, no two maternal deaths separated by time (e.g. month) should occur for similar conditions. Increased commitment ensures better governance and accountability for action or inaction. In the process, the overall professional performance of individual health workers and overall clinical management is improved. These prioritized interventions are presented in **Table 4**, which also shows the MDG goal and the MDG indicator of interest for this acceleration effort.

FIGURE 9: **VALUE CHAIN FOR IMPLEMENTING OF EMERGENCY OBSTETRIC CARE AS PART OF THE MDG ACCELERATION FRAMEWORK (MAF)**

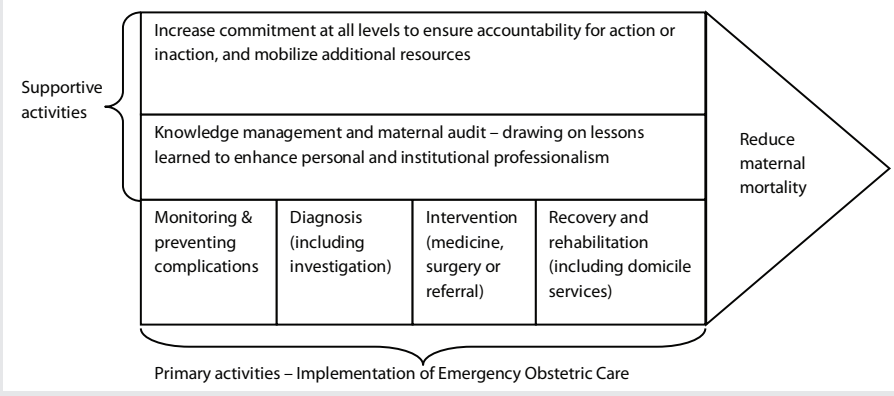


TABLE 4: PRIORITIZED ACCELERATION INTERVENTIONS TO REDUCE MATERNAL MORTALITY

Millennium Development Goal	MDG Indicator		Key Interventions
Goal 5: Improve Maternal Health (Target 5.A: Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio)	5.1 Maternal mortality ratio (per 100,000 births)	1	Conduct an audit for each maternal death, ensure recommended, actions are taken, and ensure accountability for action or inaction.
		2	Improve the quality of emergency obstetric care across all facilities at all stages of the chain – the monitoring and prevention of complications; diagnosis (investigation and tests); intervening (medicine, surgery or referral); and recovery and rehabilitation (including domicile services).
		3	Increase commitment to ensure accountability and mobilize additional resources.

IV. BOTTLENECK ANALYSIS

4.1 INTRODUCTION

In chapter 3, three priority interventions were identified based on their ability to accelerate progress on maternal mortality. In this chapter, reasons are given as to why the identified interventions are not accelerating progress at the intended pace, which will therefore help to identify and prioritize constraints. Constraints that are proximate and removable are termed 'bottlenecks'. Since acceleration has a three-year target, only direct cause constraints that can be removed in the near term are considered. Constraints that can be removed in the medium to long term, albeit important, are not addressed here. The removable constraints are broadly classified into those due to policy and planning, budget and financing, service delivery, or service utilization. These distinctions are important because the approaches and tools to address each differ remarkably.

For instance, bottlenecks in policy and planning relate to the adequacy of current strategies, sector policies and plans, regulations, standards and guidelines. Bottlenecks in budget and financing relate to the quantity and quality of funding, such as insufficient budget allocations or budget absorption problems, whereas constraints in service delivery relate to delivery of services in health facilities and communities, such as availability and motivation of health workers, or medicines out of stock. Finally, bottlenecks in service utilization relate to the use of services, such as the inability of mothers to come to health facilities. These are discussed in turn. A scorecard for all the bottlenecks is developed, and the prioritized bottlenecks are provided in **Table 5.**

4.2 BOTTLENECKS IN EMERGENCY OBSTETRIC CARE IN BOTSWANA

Chapter 3 provided an outline of the end-to-end pathway, highlighting the key steps in the provision of obstetric care in Botswana. This pathway is reproduced in **Figure 10** together with bottlenecks at each stage. It is noted that demand for obstetric care is not a constraint. Mothers come to health facilities because they trust the health care system to help them deliver their babies. There are also no constraints in the budget and financing – largely because the funds are provided for at the health facilities.

In the first stage – the monitoring and prevention of complications – on admission, the mother is monitored and stabilized to prevent any complications. No bottleneck was identified. The second stage is diagnosis. No significant constraint was identified.

The third stage is intervention with medication, surgery or referral. This is probably where the bottlenecks are greatest. The first bottleneck is related to policy and planning – i.e. the transfer policy of medical staff, especially medical doctors and midwives. Botswana has a shortage of doctors specializing in obstetrics and gynecology, and therefore heavily depends on medical doctors without specialization. For these doctors to be more effective, experience is paramount; however, this quality is rarely considered in the process of effecting transfers across institutions and departments within health facilities. This mainly affects medical doctors and midwives, but also other medical staff. In addition, the transfer handover does not provide a sufficient overlap period to transfer the necessary skills.

FIGURE 10: PATHWAY BOTTLENECKS IN EMERGENCY OBSTETRIC CARE IN BOTSWANA

Direction →	Monitoring & prevention →	Diagnosis →	Intervening →	Recovery and rehabilitation
Policy and planning				
Sector strategies, policies, and plans			Lack of taking into consideration of skills and experience when transferring medical staff	
Legal framework and laws				
Institutional capacities				Low domiciliary services coverage
Budget and financing				
Resource allocation				
Resource expenditure				
Resource mobilization				
Service delivery (supply)				
Human resources			Clinical and organizational management	
Infrastructure, equipment, and supplies			Stock out of medicines and blood products	
Sector governance				
Service utilization (demand)				
Self-efficacy				
Acceptability				
Accessibility and affordability				
Cross-cutting				
Engagement and advocacy				
Coordination and alignment				
Accountability and transparency				

The second bottleneck, as the National Maternal Mortality Audit Committee asserts, is clinical and organizational management. The key factors contributing to maternal deaths, according to the Committee Report, are delays in referral decisions and sub-standard care due to lack of skills, missed diagnosis, mismanagement and poor monitoring.

Finally, there is a constraint related to out-of-stock medicines and blood products. Botswana has made significant investment in health infrastructure, yet there are still medicines and blood products out of stock. The Committee Report attributes four of 66 maternal deaths to out-of-stock medicines and blood products. In addition, an assessment of Emergency Obstetric Care found that Makalamabedi and New Xade did not have the essential oxytocics to control bleeding, and Takatokwane had no intravenous fluids (Morewane, Boitumelo et al. 2010). Similar results were found in an assessment conducted in 2006 on emergency obstetric care in selected facilities in Botswana (MOH Botswana 2008).

The fourth stage is recovery and rehabilitation, which includes post-partum care and domiciliary services. The bottleneck is the low coverage of domiciliary services. Only 12 per cent of the expected domiciliary services were provided; here the key constraint is the lack of transport. Domiciliary nursing care is important due to its linkages to the community that provides care for the mother and the newborn.

4.3 BOTTLENECKS IN MATERNAL AUDITS IN BOTSWANA

Chapter 3 presented maternal audit as a supportive activity in the implementation of emergency obstetric care. The end-to-end pathway for maternal audit is shown in **Figure 11**.

The end-to-end pathway starts at the health facility and ends with the National Maternal Mortality Audit Committee. It starts with preparation of the maternal audit report, which is shared with the Sexual and Reproductive Health Division in the Department of Public Health, Ministry of Health (MoH). Management at the health facility is expected to take action based on the audit results. At the national level, the audit reports shared from the health facility are expected to be compiled into a database that captures both quantitative and qualitative data, analysed and compiled into comprehensive periodic technical and advocacy reports. The periodic technical reports are shared with health facilities and are expected to provide a basis for quality improvements at these facilities. The periodic advocacy reports are expected to feed into policy debate and create a basis for increased commitment and resource mobilization. Finally, to maintain a high commitment, the National Committee is expected to organize periodic and annual national symposia on maternal and newborn health.

Three bottlenecks were identified. The first is the frequency of audit reports. Botswana is currently compiling a report resulting from maternal audits for the period 2007-2011. This is a welcome development and should be performed annually, as recommended by the Safe Motherhood Initiative (MOH Botswana 2006).

FIGURE 11: PATHWAY BOTTLENECKS IN MATERNAL AUDITS

	Health Facility		National Committee	
Direction →	**Audit report prepared & shared →**	**Management action taken based on audit results →**	**Prepare periodic and annual reports →**	**Organize periodic and annual national symposia →**
Policy and planning				
Sector strategies, policies, and plans				
Legal framework & laws				
Institutional capacities			Frequency of maternal audit reports	
Budget and financing				
Resource allocation				No line in the national budget
Resource expenditure				
Resource mobilization				
Service delivery (supply)				
Human resources				
Infrastructure, equipment and supplies				
Sector governance		Accountability for management action		
Service utilization (demand)				
Self-efficacy				
Acceptability				
Accessibility and affordability				
Cross-cutting				
Engagement and advocacy				
Coordination and alignment				
Accountability and transparency				

The second bottleneck refers to the line for maternal health in the national budget to coordinate actions. On examination of the 2012-2013 budget estimates for Botswana, no allocation was earmarked for maternal health activities or for the National Maternal Mortality Audit Committee. Activities at the MoH are provided for under family planning and cancer screening, which amounts to approximately BWP850,000 (an equivalent of about US$120,000), an insufficient amount.

The third bottleneck is related to strengthening management accountability for action. The common practice is for the National Committee to recommend management action. Strengthening accountability in such a way that management reports to the committee on actions resulting from the audit reports will enhance the entire audit process.

4.4 BOTTLENECKS IN INCREASED COMMITMENT

Chapter 3 showed the Government's commitment to support the implementation of emergency obstetric care. Its end-to-end pathway and the bottlenecks are shown in **Figure 12**.

FIGURE 12: PATHWAY BOTTLENECKS IN INCREASED COMMITMENT WITHIN THE GOVERNMENT

	Health Facility		National Committee	
Direction →	Governance and political structures demand for actionable information →	Use actionable information to review progress and strategize →	Prepare periodic and annual reports →	Organize periodic and annual national symposia →
Policy and planning				
Sector strategies, policies, and plans				
Legal framework & laws	Ministry of Health (MOH) capacity to coordinate & undertake support supervision			
Institutional capacities			Frequency of maternal audit reports	Maternal and newborn
Budget and financing				
Resource allocation				
Resource expenditure				
Resource mobilization				
Service delivery (supply)				
Human resources				Coordination across sectors
Infrastructure, equipment, and supplies				
Sector governance				
Service utilization (demand)				
Self-efficacy				
Acceptability				
Accessibility and affordability				
Cross-cutting				
Engagement and advocacy				
Coordination and alignment				
Accountability and transparency				

The commitment of the Government to address maternal mortality cannot be questioned. However, unlike other government actions, there are no protocols to provide guidance. Three implementing steps have been specified in this intervention. The first step is for government and political structures at the district and central levels to demand actionable information. The second step is to use this information to review progress and develop strategies in order to sustain this progress in maternal mortality prevention. Finally, the third step is to demand action and seek technical and financial support.

Three bottlenecks have been identified. The first is the MOH's capacity to coordinate advocacy efforts and at the same time provide technical support to health facilities. The second is to identify and mobilize champions at the national and district levels to support advocacy efforts. In other countries, a Parliamentary Committee on Population and Development, which is non-statutory, serves as a "pool of champions". Champions keep the issues of maternal mortality on the agenda – ensuring accountability and educating the public. The third bottleneck is the coordination across sectors. In the current setup, MDG coordination is carried out by the Population and Development Coordination Unit within the Ministry of Finance and Development Planning. Strengthening coordination across sectors will provide a significant contribution to keep maternal and newborn health on the agenda.

4.5 BOTTLENECK SCORECARD

A bottleneck scorecard is shown in **Figure 13** from which the bottlenecks in **Table 5** are selected. The figure shows an assessment of the direct impact on maternal mortality of its removal, any spillover impacts on other MDGs, and an assessment of the overall impact and whether near-term solutions exist. Finally, the last column indicates whether or not the bottleneck is selected for which to identify solution sets. Each of the bottlenecks is described and an indication provided of its direct and indirect impact and the possibility of near-term solutions.

FIGURE 13: BOTTLENECK SCORECARD FOR ADDRESSING MATERNAL MORTALITY IN BOTSWANA

Priority Interventions Area(s)	Prioritized Bottlenecks [to be prioritized to about 2-3 for each of the intervention area]	Direct Impact	Spill over Impact	Overall impact	Near-term solution	Bottleneck selected
A. Conduct an audit for each maternal death, ensure recommended actions are done and accountability for the action or inaction is ensured	A.1 Frequency of maternal audit reports, encouraged to make them more frequent					Yes
	A.2 No line in the national budget for maternal and newborn health					Yes
	A.3 Accountability for management action					Yes
B. Improve the quality of Emergency Obstetric Care across all facilities at all stages of the chain - monitoring and preventing complications; diagnosis; intervening; recovery and rehabilitation	B.1 Sensitivity of medical staff transfers to experience.					Yes
	B.2 Low domiciliary services coverage					Yes
	B.3 Clinical and organizational management					Yes
	B.4 Stock out of medicines and blood products					Yes
C. Increase commitment and resources within and outside government	C.1 MOH capacity to coordinate & undertake support supervision					Yes
	C.2 Maternal and Newborn Champions					Yes
	C.4 Coordination across sectors					Yes

Green	Achieves acceleration of progress
Amber Green	Potentially achieves acceleration of progress
Amber Red	Probably does not help acceleration
Red	Does not help acceleration

TABLE 5: PRIORITIZED BOTTLENECKS TO PRIORITY INTERVENTIONS

PRIORITY MDG	MDG INDICATORS	PRIORITY INTERVENTIONS	PRIORITIZED BOTTLENECKS	BOTTLENECK CATEGORY
Goal 5: Improve maternal health (Target 5.A: Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio)	5.1 Maternal mortality ratio (per 100,000 births)	A. Conduct an audit for each maternal death, ensure recommended actions are taken and ensure accountability for action or inaction.	A.1 Low frequency of maternal audit reports	Policy and Planning
			A.2 No line in the national budget for maternal and newborn health	Budget and financing
			A.3 Lack of accountability for management action	Service delivery (supply)
		B. Improve the quality of emergency obstetric care across all facilities at all stages of the chain – monitoring and prevention; diagnosis; intervening; and recovery and rehabilitation.	B.1 Lack of taking into consideration of skills and experience when transferring medical staff	Policy and Planning
			B.2 Low domiciliary services coverage	Policy and Planning
			B.3 Poor clinical and organizational management	Service delivery (supply)
			B.4 Medicines and blood products out of stock	Service delivery (supply)
		C. Increase commitment and resources within and outside the Government.	C.1 Lack of MOH capacity to coordinate & undertake support supervision	Policy and Planning
			C.2 Lack of maternal and newborn champions	Policy and Planning
			C.4 Lack of coordination across sectors	Service delivery (supply)

V. IDENTIFYING SOLUTIONS

5.1 INTRODUCTION

Chapter 4 identified and prioritized bottlenecks that impede the implementation of interventions that are critical to maternal mortality; this chapter identifies and prioritizes the near-term solutions to these bottlenecks. In this context, a solution is defined as an 'accelerating', near-term action that resolves an intervention bottleneck to produce quick impact on the ground. Solutions attempt to ensure successful implementation of interventions and are presented in **Table 6**. Specific activities for the solutions are presented in the next chapter.

The solutions to bottlenecks were identified and prioritized based on their synergetic impact and feasibility; short notes are provided on each solution.

A.1 Develop a blinded system of quantitative and qualitative data capture and analysis. The only way to ensure that maternal audit reports are frequent and usable – especially for management purposes – is to make sure that the data are regularly captured and analysed. The Government, through the MoH, already captures data on maternal audits. However, due to issues of confidentiality, their usage is still confined to the National Maternal Audit Committee, which limits its usage in generating national commitment to address the challenges of maternal health. A blinded system will ensure confidentiality. Once it is systematized to regularly generate reports for use beyond the maternal audit committee, it will have the potential to ensure that action is taken to remove the bottlenecks.

A.2 Introduce a budget line for maternal and newborn health in the national budget. This will address the bottleneck of lacking a budget line. The alternative is to remain without a budget line, but the consequence is that the Government loses a critical indicator of its commitment to maternal and newborn health.

A.3 Train health managers in management and accountability. This will remove the bottleneck of the lack of accountability for management action. There are alternatives to training for management action such as sanctions (e.g. punishment, demotion or dismissal); however, the feasibility of implementation is doubtful because procedures already exist on paper and yet are not comprehensively enforced. Training in the use of maternal audits will enable managers to hold staff members accountable within the context of the profession. This becomes a better alternative since it is not contested.

B.1 Take into consideration the experience and skills of medical staff in their transfer. When the Government considers individual experience and interest prior to the transfer of staff, especially with maternal and newborn health, this will reduce the depletion of experience from the service; otherwise, when medical staff have gained experience and skills that are in short supply through on-the-job training in maternal health and are then transferred to other departments such as the Tuberculosis Department, these skills and experience are lost.

TABLE 6: ACCELERATION SOLUTIONS

PRIORITY MDG	MDG INDICATORS	PRIORITY INTERVENTIONS	PRIORITIZED BOTTLENECKS	ACCELERATION SOLUTIONS 2012-2015	POTENTIAL PARTNER(S)
Goal 5: Improve maternal health (Target 5.A: Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio)	5.1 Maternal mortality ratio (per 100,000 births)	Conduct an audit for each maternal death, ensure recommended actions are taken and ensure accountability for action or inaction.	A.1 Low frequency of maternal audit reports	a.1 Develop a blinded (that is, identities of patients remain concealed) system of quantitative and qualitative data capture and analysis.	UNFPA, WHO, MOH
			A.2 No line in the national budget for maternal and newborn health	a.2 Introduce a budget line for maternal and newborn health in the national budget.	WHO, MOH
			A.3 Low accountability for management action	a.3 Train health managers in management and accountability.	UNDP, WHO, MOH, MOF
		Improve the quality of emergency obstetric care across all facilities at all stages of the chain.	B.1 Lack of taking into consideration of skills and experience when transferring medical staff	b.1 Consider experience and training in the transfer of medical staff.	WHO, MOH
			B.2 Low domiciliary services coverage	b.2 Development of key information and guidance for domiciliary nurses to address issues for mother and new born at home to allow better functioning.	UNICEF, MOH
			B.3 Clinical and organizational management	b.3 Continue targeted training, inspection and support supervision.	WHO, MOH
			B.4 Medicines and blood products out of stock	b.4 Improve the supply of commodities based on indication of stockout.	WHO, CMS, NBTS
		Increase commitment and resources within and outside the Government.	C.1 Low MOH capacity to coordinate & undertake support supervision	c.1 Provide additional staff, strengthen technical capacity and provide additional funds.	UNFPA, MOH
			C.2 Lack of maternal and newborn champions	c.2 Identify, mobilize and equip champions with knowledge on critical issues and provide opportunities for their action.	UNFPA, MOH
			C.3 Low coordination across sectors	c.3 Provide backstopping to the Population and Development Coordination Division.	UNDP

Note: UNFPA – United Nations Population Fund, WHO – World Health Organization, MOH – Ministry of Health, EU – European Union, UNDP – United Nations Development Programme, MOF – Ministry of Finance and Development Planning, UNICEF – United Nations Children Fund, CMS – Central Medical Stores, NBTS – National Blood Transfusion Services

B.2 Provide domiciliary services with adequate means of transportation. When transportation is provided for these services, Botswana will instantly increase its service coverage because transport is the greatest challenge. Many health facilities have vehicles, yet domiciliary services are not prioritized. Botswana could also consider hiring the services of the private sector for transport. However, the issue is more a matter of scheduling the existing transport and ensuring that the vehicles are functional, which is feasible at minimal extra cost to the Government.

B.3 Continue targeted training, inspection and support supervision. There is always a tendency to consider training a waste of resources, but targeted training, especially on-the- job training combined with inspection and support supervision, provides one of the best options to improve clinical and organizational management because it is based on problem-solving rather than theoretical.

B.4 Improve the supply of commodities based on an indication of stockout. This will solve the constraint of medical and blood products out of stock at the time and place of use. As indicated above, Botswana has a sufficient infrastructure base for tracking and managing stock levels with respect to responding to the needs of specific health facilities. The alternative of mass procurement and distribution is unlikely to work because the stockout is not widespread. The problem is that when this occurs, mothers risk their lives.

C.1 Provide additional staff, strengthen technical capacity and additional funds. Providing additional staff, for example, through secondment via the development partners, strengthening technical capacity, for example, through study exchanges, and providing additional funds will remove the constraint of the lack of capacity to simultaneously coordinate and undertake support supervision in the MoH.

C.3 Identify, mobilize and equip champions with knowledge on critical issues and provide opportunities for their action. The idea of champions is already mainstreamed as an essential strategy to attract commitment among the various players in the Government and development partners. The additional effort to identify, mobilize and equip them is an easily attainable goal that will enable the issues of maternal mortality to be addressed.

C.4 Provide backstopping to the Population and Development Coordination Division. The provision of backstopping to the Population and Development Coordination Division in the Ministry of Finance and Development Planning will enable coordination across sectors. It is this coordination that will ensure that all relevant sectors make a true commitment to action.

VI. ACCELERATION PLAN: BUILDING A COMPACT

6.1 INTRODUCTION

Chapter 5 prioritized solutions to be implemented; this chapter addresses how the solutions will be delivered, by whom and when, institutional capabilities, entry points in the planning and budgeting cycle, as well as monitoring and evaluation of solution implementation. Once achieved, successful delivery of solutions represents the difference between reaching the target and remaining off-track. This chapter has two parts: the country action plan, and the implementation and monitoring plan.

6.2 COUNTRY ACTION PLAN

The Country Action Plan is presented in **Table 7**. It shows the amounts of funds for each activity, the responsible partners and the nature of the contribution. The responsibilities for the various agencies and institutions mirror the mandates and responsibilities in the United Nations Development Assistance Framework for 2010-2016. In most cases, it is not an add-on, but rather a harnessing of proposed actions by United Nations agencies.

The responsibilities of the non-United Nations agencies and also, in particular, the Government of Botswana mirror the various policies, plans and programmes in force. These include the health policy and the National Roadmap for Accelerating the Reduction of Maternal and Newborn Mortality and Morbidity in Botswana. The relative activities are also in line with current guidelines for addressing specific concerns.

TABLE 7: BOTSWANA MATERNAL MORTALITY REDUCTION ACCELERATION ACTION PLAN

BOTSWANA MATERNAL MORTALITY ACCELERATION ACTION PLAN					
PRIORITY MDG TARGET	**PRIORITIZED INTERVENTIONS**	**PRIORITIZED BOTTLENECKS**	**ACCELERATION SOLUTION (ACTIVITIES)**	**SOLUTION FINANCING (US$)**	**RESPONSIBLE PARTNER(S) (NATURE OF CONTRIBUTION)**
Goal 5: Improve maternal health (Target 5.A: Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio)	A. Conduct an audit for each maternal death, ensure recommended actions are taken and ensure accountability for action or inaction.	A.1 Low frequency of maternal audit reports	a.1.1 Develop a system of quantitative and qualitative data capture and analysis.	60,000	WHO, UNFPA (technical support)
			a.1.2 Produce periodic analysis and advocacy reports for champions	30,000	UNFPA (technical support)
		A.2 No line in the national budget for maternal and newborn health	a.2.1 Undertake advocacy to introduce a budget line in the national budget.	25,000	WHO (technical support)
			a.2.2 Strengthen capacity in budget responsiveness to maternal health.	70,000	WHO (technical support)
		A.3 Low accountability for management action	a.3.1 Develop management action study cases based on maternal audits.	80,000	EU, UNDP, WHO (technical support)
			a.3.2 Train health managers in management and accountability.	50,000	WHO (Technical support)
			a.3.3. Provide continuous mentorship and backstopping for the managers after training.	40,000	WHO (Technical Support)
	B. Improve the quality of emergency obstetric care across all facilities at all stages of the chain.	B.1 Lack of taking into consideration of skills and experience when transferring medical staff	b.1.1 Engage authorities to take into consideration the experience and training in the transfer of medical staff.	10,000	WHO (Technical support)
			b.1.2 Make it mandatory for the departing staff to orient the new staff.	20,000	WHO (Technical)
		B.2 Low domiciliary services coverage	b.2.1 Development of key information and guidance for domiciliary nurses to address issues for mother and new born at home to allow better functioning.	60,000	EU, UNICEF (Technical support)
		B.3 Poor clinical and organizational management	b.3.1 Continue targeted training, inspection and support supervision.	100,000	WHO (Technical support)
		B.4 Medicines and blood products out of stock	b.4.1 Engage the Central Medical Stores and the National Blood Transfusion Service to undertake targeted supplies.	30,000	WHO (Technical support)

BOTSWANA MATERNAL MORTALITY ACCELERATION ACTION PLAN					
PRIORITY MDG TARGET	**PRIORITIZED INTERVENTIONS**	**PRIORITIZED BOTTLENECKS**	**ACCELERATION SOLUTION (ACTIVITIES)**	**SOLUTION FINANCING (US$)**	**RESPONSIBLE PARTNER(S) (NATURE OF CONTRIBUTION)**
	C. Increase commitment and resources within and outside the Government	C.1 Low MOH capacity to coordinate & undertake support supervision	c.1.1 Engage development partners to second staff to the division.	90,000	UNFPA (Budget support)
			c.1.2 Provide targeted exposure and training to Sexual and Reproductive Health Division staff to strengthen their technical capacity.	25,000	UNFPA, WHO (Budget and technical support)
			c.1.3 Mobilize additional funds	15,000	UNFPA (Technical support)
		C.2 Lack of maternal and newborn champions	c.2.1 Identify and recruit champions at national and sub-national levels.	15,000	UNFPA (Technical support) World Bank (Technical Support)
			c.2.2 Mobilize and equip existing champions on Campaign on Accelerated Reduction of Maternal. Newborn and Child Mortality in Africa (CARMMA) and Malaria elimination with knowledge on critical issues	7,000	UNFPA, UNICEF (Technical support)
			c.2.3 Identify and provide opportunities for champions to undertake advocacy.	14,000	UNFPA (Technical support)
		C.3 Lack of coordination across sectors	c.3.1 Provide backstopping to the Population and Development Coordination Division.	60,000	UNDP (Technical support) World Bank (Technical Support)

6.3 IMPLEMENTATION AND MONITORING PLAN

TABLE 8: **PROVIDES THE IMPLEMENTATION AND MONITORING PLAN.**

BOTSWANA MATERNAL MORTALITY REDUCTION IMPLEMENTATION AND MONITORING PLAN				
ACCELERATION SOLUTION (ACTIVITIES)	2012	2013	2014	2015
A. Conduct an audit for each maternal death, ensure recommended actions are taken, and ensure accountability for action or inaction.				
a.1.1 Develop a system of quantitative and qualitative data capture and analysis.	X			
a.1.2 Produce periodic analysis and advocacy reports for champions.		X	X	X
a.2.1 Undertake advocacy to introduce a budget line in the national budget.		X		
a.2.2 Strengthen capacity in budget responsiveness to maternal health.		X	X	X
a.3.1 Develop management action study cases based on maternal audits.		X	X	
a.3.2 Train health managers in management and accountability.		X	X	X
a.3.3. Provide continuous mentorship and backstopping for managers after training.			X	X
B. Improve the quality of emergency obstetric care across all facilities at all stages of the chain – the monitoring and prevention of complications; diagnosis (investigation and tests); intervening (medicine, surgery or referral); and recovery and rehabilitation (including domicile services).				
b.1.1 Engage authorities to take into consideration the experience and training in the transfer of medical staff.		X		
b.1.2 Make it mandatory for the departing staff to orient the new staff.		X		
b.2.1 Provide domiciliary services with a standby means of transport to allow better functioning.			X	
b.3.1 Continue targeted training, inspection and support supervision.	X	X	X	X
b.4.1 Engage the Central Medical Stores to undertake targeted supplies.	X			
C. Increase commitment and resources within and outside the Government.				
c.1.1 Engage development partners to second staff to the division.		X		
c.1.2 Provide targeted exposure and training to Sexual and Reproductive Health Division staff to strengthen their technical capacity.		X		
c.1.3 Mobilize additional funds.		X	X	X
c.2.1 Identify and recruit champions at the national and sub-national levels.		X	X	X
c.2.2 Mobilize and equip champions with knowledge on critical issues.		X	X	X
c.2.3 Identify and provide opportunities for champions to undertake advocacy.		X	X	X
C.3.1 Provide backstopping to the Population and Development Coordination Division.		X	X	X

6.4 CONCLUSION

In conclusion, similar to other African countries, emergency obstetric care is the key intervention for Botswana. However, unlike many sub-Saharan African countries, almost all maternal deaths occur in health facilities primarily because that is where most births take place; therefore, the critical area for Botswana to focus on is what occurs in these facilities. However, for the intervention to be effective, two complementary interventions should be strengthened: maternal audits should inform management action so that accountability is ensured at all levels; and continuous advocacy must ensure that maternal health remains on the development agenda. More fundamentally, this action plan can only be realized if there is accountability by stakeholders in terms of fulfilling their financial commitments, consistent coordination and willingness to learn and adapt during the implementation process. It is also important for Government in particular the Ministry of Health, to own and lead most of the activities of the MAF action plan.

VII. ANNEXES

ANNEX 1: STATUS OF THE MILLENNIUM DEVELOPMENT GOALS AT A GLANCE

Goals	Target	Indicator	Data	Likelihood of meeting target
Goal 1: Eradicate Extreme Poverty and Hunger	Halve between 1990 and 2015 the proportion of people living on less than $1 per day	Proportion of population living on less than $1 per day (PPP)	2003: 23.5 2009: 6.5	Achieved
		Proportion of population below the national poverty line	1996: 47% 2003: 30.6 2009: 20.7	
	Achieve full and productive employment and decent work for all, including women and young people	Employment to population ratio	2000: 49.5 2008: 56.8	Unlikely
	Halve between 1990 and 2015 the proportion of people who suffer from hunger	Prevalence of underweight children under 5-years of age	2000: 9.9 2011: 4.6	Likely
Goal 2: Achieve Universal Primary Education	Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling	Net enrolment rate for primary school (6-12 years)	2011: 89.7	Likely
		Proportion of pupils starting grade 1 who reach the grade 5	2010: 88.6	
		Literacy rate of 15 -24 years of age, women and men	2003: 93.7	
Goal 3: Promote Gender Equality and Empower Women	Eliminate gender disparity in primary and secondary education preferably by 2005 and at all levels of education no later than 2015	Ratio of boys to girls in primary; secondary and tertiary education (girls per 100 boys)	2011: 96 (Pr),108 (Sec) 2007: 99 (Ter)	Achieved
		Share of women in wage employment in the non-agricultural sector	2011: 42.6	
		Proportion of seats held by women in the National Parliament	2011:7.9	
		Ratio of literate females to males aged 15 -24 years	2003: 1.2	
Goal 4: Reduce Child Mortality	Reduce by two-thirds between 1990 and 2015 the under-five mortality rate	Under-five mortality rate (per 1,000 live births)	1996: 45 2007: 76	Unlikely
		Infant mortality rate (per 1,000 births)	1996: 37 2007: 57	
		Proportion of 1 year-old children immunized against measles	1996:76 2010:95	
Goal 5: Improve Maternal Health	Reduce by three quarters the maternal mortality ratio	Proportion of births attended by skilled health personnel	2010: 99	Unlikely
		Maternal mortality ratio (100,000)	1991: 326 2011: 189	

Goals	Target	Indicator	Data	Likelihood of meeting target
Goal 6: Combat HIV and AIDS, Malaria and Other Diseases	. Have halted by 2015 and begun to reverse the spread of HIV and AIDS	HIV prevalence among population aged 15-24 years	2004: 13 2008: 8	
		Condom use at last high risk sex	2008: 81%	Likely
		Percentage of population aged 15-24 years with comprehensive knowledge of HIV/ AIDS	2008: 42%	
		Ratio of school attendance of orphans to school attendance of non-orphans aged 10-14 years	2008: Orphans 86% Non-orphans 89%	
	Achieve by 2010 universal access to treatment for HIV/AIDS of all those who need it	Proportion of population with advanced HIV infection with access to antiretroviral drugs	2010: > 95%	Achieved
	Halve halted by 2015 and begun to reverse the incidence of malaria and other major diseases	Incidence (per 1,000 population and death cases associated with malaria	2000: 45 2007: 13	
		Proportion of children under 5 sleeping under insecticide-treated nets	2007: 12% in endemic districts	Likely
		Proportion of children under 5 with fever who are treated with appropriate anti-malaria drugs	2007: 10%	
		Prevalence associated with tuberculosis (per 100,000)	1990: 330 (incidence) 2010: 710 (incidence)	Unlikely
		Proportion of tuberculosis cases detected and cured under directly observed treatment short course	2009: 60	
Goal 7: Ensure Environmental Sustainability	Halve the proportion of people without access to safe drinking water and basic sanitation	Proportion of population using an improved drinking water source (% of population)	1990: 93 2009: 96	Achieved
		Proportion of population using an improved to improved sanitation facility (% of population)	1990: 38 2008: 60 (74% surb, 19% rur)	
	Integrate the principles of sustainable development into country policies and programmes, and reverse the loss of environmental resources	Proportion of land covered by forest (% of total land area)	1990: 24 2009: 21	
		National protected area (% of total land area)	2010:30%	
		CO2 emissions (metric tonnes per capita)	1990: 1.6 2010:2.6	Likely
		GDP per unit of energy use (constant 2005 PPP $ per kg of oil equivalent)	2007:11.7	

Goals	Target	Indicator	Data	Likelihood of meeting target
Goal 8: Develop a Global Partnership for Development	Develop further an environment conducive to beneficial trade and foreign direct investment	Net Overseas Development Assistance received (% gross national income)	2007:1.0	Likely
		Debt service as a percentage of exports of goods and services	2007:1.0	
		Telephone lines (per 100 people)	2007:7.0	
	In cooperation with the private sector, make the benefits of new technologies available	Mobile cellular subscribers (per 100 people)	2007:77.0	Likely
		Internet use (per 100 people)	2007:5.0	
		Personal computers (per 100 people)	2007:4.8	

Adapted from the Government of Botswana – United Nations Programme Operation Plan (GoB – UN POP) Mid-Term Review 2010; Botswana MDG Status Report 2010; Statistics Botswana, 2012; Vision 2016 and Millennium Development Goals Indicators Report, 2012 Stat Brief No, 2012/3, May 2012; Statistics Botswana, 2012. Botswana Mortality Ratio (MMR) 2007-2011, Stats Brief No, 2012/19. November 2012; NACA/UNAIDS UNGASS Report 2010; and World Bank (various years) World Development Indicators database.

ANNEX 2: OBJECTIVES AND STRATEGIES PROVIDED IN THE NATIONAL ROADMAP FOR ACCELERATING THE REDUCTION OF MATERNAL AND NEWBORN MORTALITY AND MORBIDITY IN BOTSWANA

	Objectives	Strategies
1	Strengthen utilization of policy guidelines, protocols and service standards in maternal and newborn health care by all service providers by 31 March 2013.	Strengthening the use of policy standards and service guidelines.
2	Provide skilled attendance during pregnancy, childbirth and the post natal period at all levels of the health care system by 31 March 2013.	Improving the provision of Emergency Obstetric Care across all facilities.
3	Equip all health facilities with the required equipment and supplies in accordance with national health standards by 31 March 2013.	Strengthening the supply chain management and ensure adequate supplies and equipment.
4	Strengthen Information Education and Communication/Behaviour Change. Communication community-oriented strategies by 31 March 2013.	Empowering communities to ensure a continuum of care between household and health facility.
5	Strengthen monitoring and evaluation activities at district and national levels by 31 March 2013.	Ensuring that maternal audits inform actions at all health facilities and governance levels.
6		Advocating for increased commitment and resources including the fostering of partnerships for maternal and newborn health care.
7		Strengthening services that address adolescent's sexual and reproductive health services.
8		Strengthening an efficient communication referral system.

ANNEX 3: INTERVENTION EVALUATION TEMPLATE – ACCELERATED IMPACT

Criteria	Description	Green	Amber Green	Amber Red	Red
Incremental outputs and Outcomes	Additional impact from improved implementation on priority MDG targets	• Can close a large portion of the remaining MDG gap by 2015 (e.g. 25% – defined at the country level)	• Can potentially close a large portion of the remaining MDG gap – defined at the country level	• Limited potential for additional impact prevents meaningful acceleration	• No potential for additional impact
Beneficiaries (population impacted)	Target population includes vulnerable groups and the least well off	• Majority of impact focused on vulnerable groups and the least well-off	• Portion of impact benefits vulnerable groups and the least well-off	• Limited impact on vulnerable groups and the least well-off	• Little or no impact on vulnerable groups and the least well-off
Impact ratio	Benefit per unit of resource expended to implement the intervention	• Data supports high ratio of benefit per unit of expenditure	• Data support moderate ratio of benefit per unit of expenditure	• Limited data available to support ratio or low ratio of benefit per unit expenditure	• Limited data available to support ratio and low ratio of benefit per unit expenditure
Speed of impact	Length of time to realize the intervention's impact	• Full impact is realized within x months – time defined at the country level	• Partial impact is realized within x months or full impact within x years	• Impact will take x years to realize – time defined at country level	• Impact will not be realized before 2015
Evidence of impact	Intervention implementation history and impact in other contexts	• Intervention implemented successfully in many countries	• Intervention implemented successfully in a few countries	• Intervention has not previously been implemented or has been implemented with mixed success	• Intervention implemented with no success in other countries

ANNEX 4: INTERVENTION EVALUATION TEMPLATE – FEASIBILITY

Criteria	Description	Green	Amber Green	Amber Red	Red
Governance	Stakeholder coordination and political will for solution implementation	High potential for stakeholder coordination or political support	Potential stakeholder coordination **OR** political support in doubt	Potential stakeholder coordination **AND** political support in doubt	Potential stakeholder coordination **AND/OR** political support certainly not available
Capacity	Government and partners' capabilities to plan, implement and monitor the solution	The Government and partners have the capacity to plan, implement, and monitor the solution	Some capacity concerns over planning, implementation and monitoring, but delivery likely	Significant concerns over planning, implementation, and monitoring that may prevent delivery	The Government and partners probably do not have the capacity for successful delivery
Funding availability	Availability of funds to cover the solution's cost	Funding (either through the government or donors) readily available	Funding likely, but specific source yet to be determined	Ability to fund the solution uncertain, probably requires a new funding source	Funding not likely
Additional factors	Additional factors that may impede the solution	No factors identified	Minor concerns identified, but can be resolved	More substantive issues identified, but solutions likely	Substantial, unsolvable issues identified

ANNEX 5: CONSULTATIONS AND ADDITIONAL METHODS

The development of this concept was guided by the MDG Acceleration Framework tool kit. This can be accessed on:

http://www.undp.org/content/undp/en/home/mdgoverview/mdg_goals/acceleration_framework/

In addition, individuals in key positions within Botswana were interviewed, in the Government of Botswana and the United Nations. Below is the list of individuals and organizations consulted in the development of Compact.

Last name, other names	Institution	Title
Dhliwayo, Rogers	United Nations Development Programme	Economics Advisor
Thipe, Boitumelo	Ministry of Health	In Charge of Safe Motherhood Initiative
Leburu, Veronica	Ministry of Health	Head of Division, Sexual and Reproductive Health
Keetile, Moses Kagiso	United Nations Population Fund	Programme Specialist – Population and Development
Camara-Drammeh, Aisha	UNFPA	Representative
Nyarko, Eugene	World Health Organization	Representative
Kibassa, Colleta	UNICEF	Chief, Young Child Survival & Development
Rapitse, Goratileone	Princess Marina Hospital	Senior Registered Nurse
Petekekse, Kesegofetse	Mafilthakgosi Clinic	Senior Registered Nurse
Baakile, Tapologo	Ministry of Finance and Development Planning	Director, Population and Development
Haruna Baba Jebril	Ministry of Health	Acting Director, Public Health

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