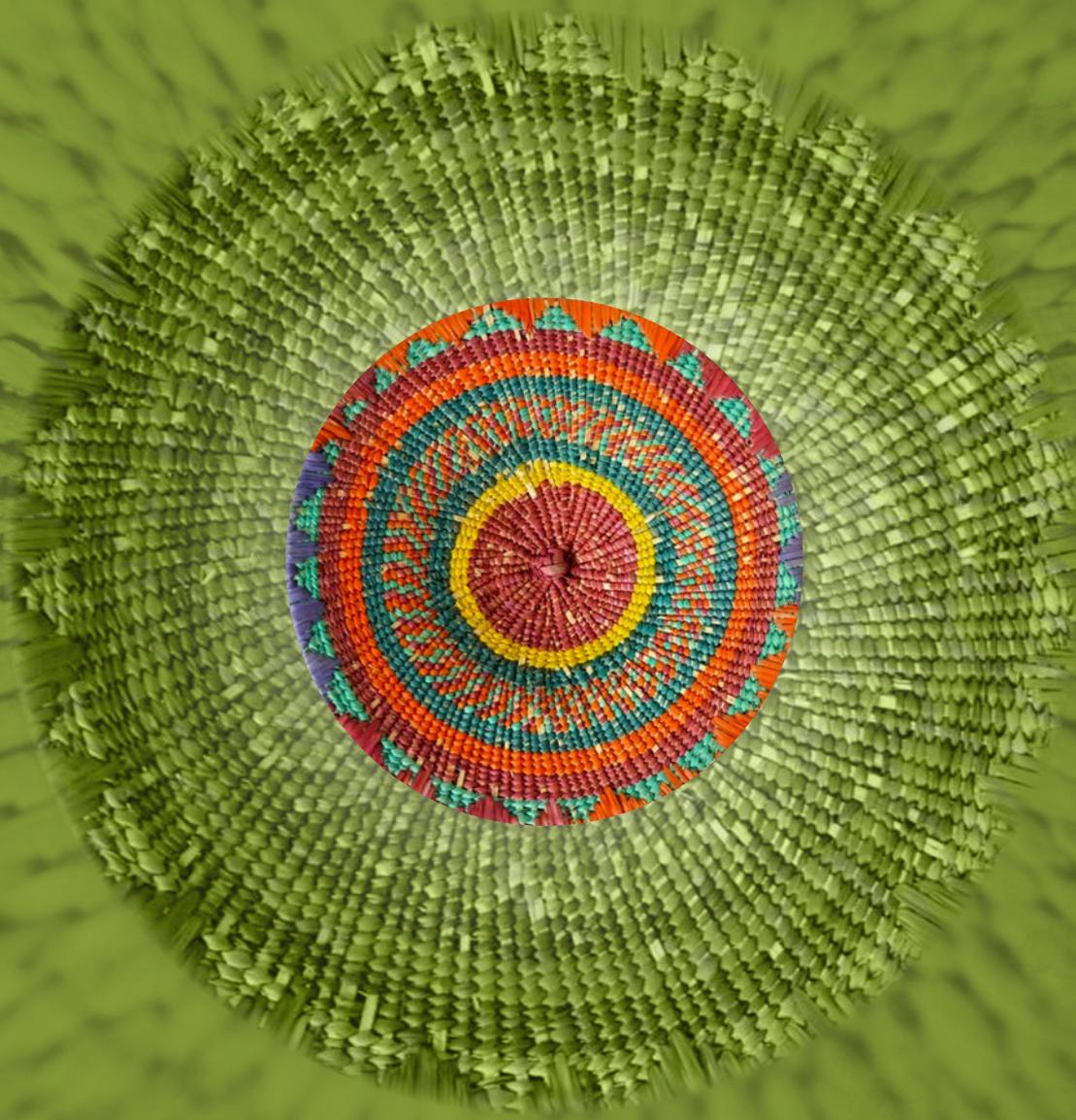




**Investment Cases Towards Ending Unmet
Need for Family Planning, Preventable
Maternal Deaths, and Gender-based Violence**

SOUTH SUDAN

September 2021



Investment Cases Towards Ending Unmet
Need for Family Planning, Preventable
Maternal Deaths, and Gender-Based Violence

SOUTH SUDAN

September 2021

ACKNOWLEDGEMENTS

The Government of South Sudan extends its appreciation to the National Reference Group (NRG) for its commitment to the conduct of the four investment cases aimed at accelerating the achievement of three transformative results: (i) ending unmet need for family planning; (ii) ending preventable maternal deaths; and (iii) ending gender-based violence (GBV) and harmful practices (including female genital mutilation and child marriage). The NRG was comprised of representatives from the Ministry of Finance and Planning (MoFP), Ministry of Health (MoH), National Bureau of Statistics (NBS), other ministries and government institutions involved in scaling up sexual reproductive health and rights; members of Parliament; and the United Nations Population Fund (UNFPA), among other partners. Technical support was provided by the UNFPA Eastern and Southern Africa Regional Office (ESARO). Gratitude is also extended to the team of consultants composed of international consultant Dr. Jacob Novignon of the African Health Economics and Policy Association (AfHEA), and national consultants, Dr. Augustino Ting Mayai and Mr. Ariic David Aguto Reng. The report also benefited from peer review by members of the AfHEA team.



TABLE OF CONTENTS

ACKNOWLEDGEMENTS	ii
LIST OF TABLES	iv
LIST OF FIGURES	vi
LIST OF ACRONYMS	vii
EXECUTIVE SUMMARY	viii
Ending preventable maternal deaths	x
Ending unmet need for family planning	x
Ending Child Marriage	x
Ending gender-based violence and all harmful practices	xi
1. INTRODUCTION TO THE INVESTMENT CASES	1
1.1 Country context	1
1.2 Achieving transformative results in South Sudan: Situation analysis	2
1.3 Making a case for investing in transformative results in South Sudan	7
2. ENDING PREVENTABLE MATERNAL DEATHS	8
2.1 Introduction	8
2.2 Methodology	8
2.3 Projection of priority interventions	8
2.4 Costing interventions	11
2.5 Impact and cost of scaling up interventions to end preventable maternal deaths	11
3. ENDING UNMET NEED FOR FAMILY PLANNING	14
3.1 Introduction	14
3.2 Methodology	14
3.3 Costing interventions	14
3.4 Projection of modern contraception prevalence	14
3.5 Impacts and costs of ending unmet need for family planning	15



4. ENDING GENDER-BASED VIOLENCE AND HARMFUL PRACTICES, INCLUDING CHILD MARRIAGE	18
4.1 Introduction	18
4.2 Ending gender-based violence	18
4.3 Ending child marriage	20
4.4 Gender-based violence prevention and response intervention costs	22
5. SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS	24
5.1 Summary of findings	24
5.2 Conclusion and recommendations	25
REFERENCES	26
APPENDIX A	28
APPENDIX B: METHODOLOGY	53

LIST OF TABLES

In the Main Text

Summary of interventions: 2020-2030	xi
Table 1: Total official development assistance (ODA) to the health sector	2
Table 2: South Sudan: Key health indicators for maternal health	4
Table 3: South Sudan: Key health indicators for family planning	5
Table 4: Baseline and endpoint projection of maternal health intervention coverage targets by scenario, 2020-2030	10
Table 5: Costs of scaling up of maternal health intervention coverage by projection scenario	13
Table 6: Achievable coverage scenario for prevention of maternal deaths: financing required, available financing, and financing gap, 2020-2030	13
Table 7: Summary of impact of increasing modern contraceptive prevalence rate (mCPR), 2020-2030	16



Table 8: Summary of incremental costs for family planning, by component, by scenario, 2020-2030	16
Table 9: Funding gaps in eliminating unmet need for family planning under different scenarios, 2020-2030	17
Table 10: Cumulative costs for all interventions to prevent child marriages, 2020-2030	19
Table 11: GBV indicators, 2020-2030	20
Table 12: Total cost of reducing child marriage prevalence to 5% by 2030, by type of intervention, 2020-2030	21
Table 13: Unit cost of child marriage prevention, per intervention	21
Table 14: GBV prevention and response intervention unit cost	23
Table 15: Investment needed for GBV prevention and response	23

In the Appendix A

Table A1: Status quo/baseline coverage scenario for maternal health, 2020-2030	28
Table A2: Modest coverage projection scenario for maternal health (30% coverage target), 2020-2030	30
Table A3: Achievable coverage projection scenario for maternal health (50% coverage target), 2020-2030	32
Table A4: The path to reducing and ending preventable maternal deaths in South Sudan	33
Table A5: Ambitious/universal coverage projection scenario for maternal health (100% coverage target), 2020-2030	34
Table A6: Costs of maternal health interventions: Status quo scenario, 2020-2030	35
Table A7: Costs of scaling up coverage of maternal health interventions: Modest coverage scale-up scenario (30%), 2020-2030	36
Table A8: Costs of scaling up coverage of maternal health interventions: Achievable coverage scale-up scenario (50%), 2020-2030	37
Table A9: Costs of scaling up coverage of maternal health interventions: Ambitious/universal scale-up scenario (100%), 2020-2030	38
Table A10: Costs of intervention for 30% modern contraceptive prevalence rate	39
Table A11: Costs of intervention for 40% modern contraceptive prevalence rate	41
Table A12: Costs of intervention for 50% modern contraceptive prevalence rate	43



Table A13: Costs of intervention for status quo (5%) modern contraceptive prevalence rate	45
Table A14: Summary of incremental costs for scaling up modern contraceptive prevalence rate (scenarios: 30%, 40%, 50%)	47
Table A15: Annual costs of child marriage intervention	48
Table A16: Annual GBV intervention costs	49
Table A17: Modern contraceptive prevalence rate scenarios	49
Table A18: Maternal lives saved by scaling up of coverage of maternal health interventions, 2020-2030	50
Table A19: Projection of method mix for modern contraception (%), 2020-2030	51
Table A20: 17 GBV Intervention coverage rates (%), 2020-2030	51

In the Appendix B

Table B1: Programme costs	56
Table B2: Costs of logistics, wastage, and other health system costs	57

LIST OF FIGURES

In the Main Text

Figure 1: Health sector allocation as a share of the total budget (per cent)	3
Figure 2: Trends in the number of maternal deaths by coverage scenario, 2020-2030	12
Figure 3: Trends in maternal mortality ratio (deaths per 100,000 live births), by coverage scenario, 2020-2030	12
Figure 4: Summary of incremental costs for family planning by cost component, by scenario, 2020-2030	17
Figure 5: Trends in reported GBV cases in South Sudan, 2015-2020	21



LIST OF ACRONYMS

CEDAW	Convention on the Elimination of All Forms of Discrimination Against Women	MOH	Ministry of Health
CMOI	Child Marriage Optimal Interventions	NRG	National Reference Group
CPR	Contraceptive Prevalence Rate	NRHSP	National Health Strategic Plan
CVA	Cash and Voucher Assistance	ODA	Official Development Assistance
DRM	Domestic Resource Mobilization	RH	Reproductive Health
EmONC	Emergency Obstetric and Neonatal Care	SDGs	Sustainable Development Goals
FP	Family Planning	SNAP	Strategic National Action Plan
GBV	Gender-Based Violence	SSHHS	South Sudan Household Health Survey
GBV-IMS	Gender-Based Violence – Information Management System	TWG	Technical Working Group
GDP	Gross Domestic Product	UHC	Universal Health Coverage
HIV	Human Immunodeficiency Virus	UN	United Nations
IPV	Intimate Partner Violence	UNCRC	United Nations Convention on the Rights of the Child
LiST	Lives Saved Tool	UNDP	United Nations Development Programme
mCPR	Modern Contraceptive Prevalence Rate	UNFPA	United Nations Population Fund
		WGSF	Women and Girls Friendly Space
		WHO	World Health Organization



EXECUTIVE SUMMARY



The Republic of South Sudan has a projected population of about 13.2 million (as at 2020). About 81 per cent of the population live in rural areas and 73.7 per cent are below 30 years of age, implying a very youthful population. The total fertility rate is 4.5 children per woman, with adolescent birth rate of 158 per 1,000 girls aged 15-19 years. Teenage pregnancy is estimated at 30 per cent among girls 15-19 years old. The maternal mortality ratio in the country is estimated at 789 deaths per 100,000 live births (UN estimates, 2017). Contraceptive prevalence rate for all methods is 6 per cent with modern methods at 5 per cent as at 2020.¹ Unmet need for family planning is estimated at 29.7 per cent for 2020 (FP 2020). Gender inequality and gender-based violence (GBV) are widespread and perpetuated by several factors including cultural norms. With its social indicators and current pace of progress, South Sudan is not on track to meet the Sustainable Development Goals (SDGs) by 2030. Urgent attention is required by the Government and its partners to reverse the above trends and improve health outcomes of the population.



The humanitarian crisis in South Sudan remains complex and protracted with both acute and chronic needs experienced at varying levels across the country. Decades of war, intercommunal clashes, frequent disease outbreaks, flooding and drought, and a weakening economy continue to ravage the country and have

undermined national capacity for provision of services and resilience of national systems to serve the South Sudanese population. By the end of March 2020, nearly 4 million people remained displaced by the humanitarian crisis - about 2 million internally displaced and more than 2 million as refugees. South Sudan

¹ United Nations, [State of World Population, 2021](#).



continues to underinvest in several sectors including health, education, agriculture, youth employment, tourism and mining, that would have the largest knock-on effect on sustainable development and building resilience for future generations, with expenditures skewed towards defence and security. It is estimated that about 80 per cent of South Sudanese live below the poverty line. Consequently, poverty levels are expected to remain extremely high on the back of severe food insecurity and limited access to basic social services across the country.

South Sudan is one of the most oil-dependent countries in the world, with oil accounting for more than 40 per cent of its gross domestic product (GDP). Outside the oil sector, livelihoods are concentrated in low productive, unpaid agriculture and pastoralist work. Given that consumption and non-oil exports are declining, oil production remains the main source of growth in South Sudan. With the declining economy, there has been an overreliance by the Government on donor funding to finance critical social services and humanitarian response with limited government funding for developmental programmes.

In response to these challenges, UNFPA, in collaboration with the Government and other partners, support country specific programme interventions to help improve the situation in the country and contribute to the achievement of three transformative results: (i) ending unmet need for family planning; (ii) ending preventable maternal deaths; and (iii) ending gender-based violence and harmful practices including female genital mutilation and child marriage.

The country-level investment cases provide the Government of South Sudan with quantitative basis to assess the scale and scope of investments needed to prioritize proven, high-impact and cost-effective interventions required to accelerate progress towards achievement of the transformative results it has committed to with UNFPA and partners. The investment cases are also expected to inform partnership efforts and mobilization of additional domestic and external financing required to achieve the transformative results.





The following is a summary of resulting from various scenarios of effective coverage of priority interventions described under each sub-section. The baseline and end points are 2020 and 2030 with the first year of impact being 2021.

Ending preventable maternal deaths

- An achievable 50 per cent scale-up of coverage of 27 high impact maternal health interventions, including contraceptive use, could save over 5,500 maternal lives over the next 10 years at a total cost of \$408 million, requiring an additional \$318 million over the projected available funding. This could avert over 33 per cent of maternal deaths compared to the status quo and reduce the maternal mortality ratio by over 30 per cent from 789 per 100,000 live births in 2020 to 530 per 100,000 live births by 2030.
- An ambitious (universal) scale-up of the 27 high impact interventions to 100 per cent coverage could save over 8,800 maternal lives and would require a total incremental funding of \$530 million over the next 10 years. This could avert over half of maternal deaths compared to the status quo and likewise reduce the maternal mortality ratio by 51 per cent from 789 per 100,000 live births in 2020 to 386 per 100,000 live births by 2030.
- From 2020 to 2030, a projected \$90 million from the Government, donors, and others is estimated as available/committed financing at the country level towards reducing preventable maternal deaths in the next decade.
- In summary, the additional funding needed to reduce preventable maternal deaths would be about \$318 million at the achievable coverage projection scenario and \$530 million at the ambitious scenario.

Ending unmet need for family planning

- Over the period 2020-2030, an increase in the modern contraceptive prevalence rate from 30 per cent to 50 per cent, with a view to ending unmet need for family planning, will lead to an increase in the number of unintended pregnancies averted from 292,075 under the status quo scenario to between 1,084,243 and 1,717,979 across the three alternative scenarios (modest (30 per cent), achievable (40 per cent) and ambitious (50 per cent)).
- Likewise, the number of unsafe abortions averted will increase from 98,137 under the status quo scenario to between 364,305 and 577,241 across the three alternative scenarios by 2030.
- The number of maternal deaths averted is also expected to increase from 3,202 under the status quo scenario to between 11,960 and 19,014 by 2030 under the three other scenarios.
- The scale-up in modern contraceptive prevalence will require an additional cost of between \$21 million and \$35.9 million between 2020 and 2030 across the three scenarios.
- Given estimated available government resources, the financing gap to achieve a higher coverage of family planning services will range from \$20.19 million to \$34.96 million across the scenarios.

Ending Child Marriage

- Over 2 million children are likely to be married in the next 10 years if there is no intervention undertaken. However, with targeted interventions, 62 per cent of projected child marriages (about 1.4 million) would be averted.
- The total cost of reducing child marriage to 5 per cent by 2030 is estimated at \$605.6 million.
- Community interventions account for most of the cost at \$512 million (constituting 84 per cent) of total cost, followed by education intervention at about \$93.6 million.



- On average, \$502.50 will be required to avert one case of child marriage in the country within the period 2020-2030.

Ending gender-based violence and all harmful practices

- Without any intervention, the number of women experiencing intimate partner violence (IPV) would increase from 592,219 in 2020 to 3.05 million in 2021-2025 and an additional 3.12 million in 2026-2030.
- With a 5 per cent annual increase in the effective coverage of targeted interventions, the number of women exposed to IPV in South Sudan would start to decline. Between

2021 and 2025, 171,708 cases of IPV would be averted, and more than half a million cases would be averted between 2026 and 2030. With a 50 per cent intervention coverage for all indicators achieved by 2030, 392,376 IPV cases would be averted during the first five years (2021-2025) and nearly 2.3 million incidents averted during 2026-2030.

- Achieving these outcomes would cost \$87.6 million at 50 per cent intervention coverage, with economic empowerment interventions representing about 60 per cent of the estimated costs. This would be followed by allocations for community mobilization and programme support cost, each accounting for 13 per cent of the total cost.

Summary of interventions: 2020-2030

MATERNAL HEALTH INTERVENTION	MODEST PLAN (30% COVERAGE)	ACHIEVABLE PLAN (50% COVERAGE)	AMBITIOUS PLAN (100% COVERAGE)
Total intervention cost (\$)	313,360,000	408,100,000	619,550,000
Impact: Maternal lives saved	3,488	5,570	8,802
Funding gap (\$): 50% coverage (%)		317,820,000 (78%)	
UNMET NEED FOR FAMILY PLANNING	MODEST PLAN (30% COVERAGE)	ACHIEVABLE PLAN (40% COVERAGE)	AMBITIOUS PLAN (50% COVERAGE)
Total intervention costs (\$)	21,000,000	28,334,000	35,820,000
Impacts of intervention:			
Cumulative number of unintended pregnancies averted due to use of modern methods	1,084,243	1,401,111	1,717,979
Number of maternal deaths averted due to use of modern methods	11,960	15,500	19,014
Number of unsafe abortions averted due to use of modern methods	364,305	470,774	577,241
Funding gap (\$) (%)	20,194,033 (95.74%)	27,602,200 (96.85%)	34,962,200 (97.50%)
ENDING CHILD MARRIAGE			
Total intervention cost (\$)			605,600,000
Impact: Child marriages averted			1,400,000 (62%)
ENDING GENDER-BASED VIOLENCE			
Total intervention cost (\$)			87,568,000
Impact: Cumulative cases of gender-based violence averted with 50% intervention coverage increase			2,664,986



The investment cases underscore the urgency South Sudan faces in achieving the transformative results by 2030, without which it will be unable to make significant contributions to the National Development Plan priorities, Sustainable Development Goals (SDGs), and aspirations of Africa Agenda 2063. With a highly fragile health system and constrained economic situation, on the back of a long civil conflict, there will be need for greater commitments to increased financing to implement the high impact interventions as put forward by the investment cases. The scenarios and estimates provide policy makers with a guide on possible options to determine the most feasible scale of investments, given current resource constraints. In addition to increased domestic resource

mobilization (DRM) and targeting of resources for sexual and reproductive health expenditures, concerted efforts to explore and implement innovative financing strategies and financial tracking for accountability will be important.

Investing in the package of high impact interventions for the transformative results will have important benefits for the Republic of South Sudan. Significant numbers of maternal lives will be saved and unintended pregnancies, unsafe abortions, cases of IPV and child marriages would be averted. These in turn will contribute to long-term health and non-health benefits resulting in improved well-being, gender equality and socioeconomic advancement.





1. INTRODUCTION TO THE INVESTMENT CASES



1.1 Country context

South Sudan attained independence in 2011. It has a population of about 13.2 million as of 2020, with 81 per cent living in rural areas. It has a youthful population with about 73.7 per cent aged below 30 years. The total fertility rate as at 2020 was 4.5 and the adolescent birth rate was 158 per 1,000 girls aged 15-19 years (UNFPA 2021) with teenage pregnancy estimated at 30 per cent among girls 15-19 years old. The maternal mortality ratio was estimated at 789 per 100,000 live births as at 2020 (UNFPA 2021). Contraceptive prevalence rate (CPR) for all methods was 6 per cent with modern methods at 5 per cent as of 2020. Unmet need for family planning was 29.7 per cent in 2020 (UNFPA 2021). Gender inequality and gender-based violence are prevalent and perpetuated by cultural norms.²

South Sudan has witnessed a complex and protracted humanitarian crisis with acute and chronic needs experienced at varying levels across the country. Decades of war, intercommunal clashes, frequent disease

outbreaks, flooding and drought, have weakened the economy and continue to ravage the country, undermining the national capacity to provide services. By the end of March 2020, nearly 4 million people remained displaced by the humanitarian crisis: 1.6 million internally displaced and more than 2.2 million as refugees.² South Sudan is one of the most oil-dependent countries in the world, with oil accounting for almost all exports and about 70 per cent of its GDP [African Development Bank, 2021], and is the primary source of revenue. The country's GDP per capita dropped significantly from \$1,779 in 2013 to less than \$1,119 in 2015 (World Bank, 2021). Outside the oil sector, livelihoods are concentrated in low productive, unpaid agriculture and pastoralist work. Coupled with economic difficulties, many years of conflict have eroded the productive capacity of the country.³



ALMOST THREE-QUARTERS OF SOUTH SUDAN'S POPULATION IS UNDER THE AGE OF 30, which makes for a very young population. EARLY CHILDBEARING IS ESTIMATED AT 30% of girls aged 15-19 years.

² <https://reliefweb.int/report/south-sudan/south-sudan-humanitarian-needs-overview-2021-january-2021>

³ <https://www.worldbank.org/en/country/southsudan/overview>



The country continues to underinvest in several key sectors including health, education, agriculture, youth employment, tourism and mining, that would have the largest impact on poverty reduction and building resilience, with expenditures skewed toward defence and security. An estimated 82 per cent⁴ of South Sudanese are poor, based on the \$1.90 per capita poverty line (at 2011 purchasing power parity), with poverty levels expected to remain extremely high partly due to severe food insecurity and limited access to basic social services. With the declining economy, the Government’s reliance on donor funding to finance critical social services and humanitarian response has been inevitable.

1.2 Achieving transformative results in South Sudan: Situation analysis

Before South Sudan’s independence, the region experienced only 19 years of stability following Sudan’s independence in 1956.⁵ Three civil wars, mainly in the south of the country, have exacted a huge toll on the country’s health system. The South Sudanese people have persistently endured significant setbacks due to these deeply entrenched conflicts, posing severe threats to institutions and systems. Consequently, health conditions have deteriorated, resulting in relatively higher rates of morbidity and mortality.

1.2.1 Financing of sexual and reproductive health services in South Sudan

Health financing in South Sudan has, over the years, relied on development partners and the central government. Table 1 shows the funding flows from development partners to South Sudan to support reproductive health and other interventions. Funding for family planning and reproductive health increased between 2012 and 2015 but dropped significantly in 2016.

South Sudan’s health policy⁶ advocates for universal health care coverage by expanding “health financing mechanisms and progressively increasing public expenditure in health by increasing budget allocation towards regional targets like the Abuja declaration, as initial steps for universal health coverage.” One of the objectives of the 2016-2026 Health Policy, for example, is the mobilization of health system resources to improve health sector performance. To attain universal coverage as stated in the policy, the Ministry of Health is tasked with mobilizing resources that will ensure reduction in maternal and neonatal mortality and guarantee sexual and reproductive health services and rights, focusing specifically for vulnerable groups.

Table 1: Total official development assistance (ODA) to the health sector (\$ millions)

TOTAL OFFICIAL DEVELOPMENT ASSISTANCE (ODA)	2012	2013	2014	2015	2016
Total ODA for health	106.43	96.821	117.923	182.716	96.968
Total ODA reproductive health	68.224	77.851	66.334	77.564	32.191
Total ODA family planning	4.454	4.537	8.604	12.607	1.239
Total ODA	1,041.65	1,139.46	1,634.10	1,404.41	1,279.30

Source: Ministry of Health, 2016

⁴ <https://www.worldbank.org/en/country/southsudan/overview>

⁵ Mayai, 2020. South Sudan’s demography-Looking to 2050. Conflict Sensitivity Resources Facility.

⁶ South Sudan National Health Policy, 2016.

2% South Sudan's health sector has been almost entirely dependent on external aid. **ONLY 2% OF ITS ANNUAL BUDGET**, on average (2015-2020), **IS ALLOCATED TO THE HEALTH SECTOR**, below the 15% target set in the Abuja Declaration.

South Sudan is far from meeting the target set in the Abuja Declaration⁷ for countries to allocate at least 15 per cent of national budget to health. The 2013-2016 Strategic Plan promised to fulfil the Abuja Declaration, and to spend \$34 per capita on health by 2015. South Sudan's health financing stands on average at 2 per cent of the total budget annually. (See Figure 1). This has led to the health sector being almost entirely dependent on external aid. This also explains why out-of-pocket payments remain high in the country, accounting for about 65 per cent of the total health expenditure.⁸ Although there are policy commitments, these are not backed up by a national health-care financing strategy. A review of the actual annual expenditures reveals the same pattern across almost all years, except 2006. In 2006, a year after the Comprehensive Peace Agreement (CPA) was inaugurated, the Government of South Sudan committed 3.8 per cent of its expenditure to health, the highest so far (Mayai 2020).

1.2.2 Current state of maternal health

South Sudan's high maternal mortality is mainly due to the limited coverage and availability of quality health-care services, underpinned by the extremely low skilled birth attendant rate of 19 per cent. Over 80 per cent of women deliver at home assisted by untrained attendants. According to the 2013-2016 National Reproductive Health Strategic Plan (NRHSP), the poor maternal health also results from factors associated with haemorrhage, retained placenta, obstructed labour, unsafe abortion, anaemia, poor nutrition, malaria, and lack of quality health facilities for referrals and emergency response. Additionally, the NRHSP indicates that only 40 per cent of health facilities have been functional in the last decade and most still lack equipment, supplies and a sufficient number and mix of health personnel, especially midwives. Finally, access to comprehensive reproductive health (RH) information and skilled care throughout the continuum of care for family planning, pregnancy, delivery, post-partum and postnatal periods remain inadequate.



Maternal mortality remains high at 789 deaths per 100,000 live births (2015). **WITH LIMITED ACCESS TO QUALITY REPRODUCTIVE HEALTH CARE, OVER 80% OF WOMEN DELIVER AT HOME, ASSISTED BY UNTRAINED ATTENDANTS.**

Figure 1: Health sector allocation as a share of the total budget (per cent)



Source: Ministry of Health, 2021

⁷ https://www.who.int/healthsystems/publications/abuja_declaration/en/

⁸ FMOH, UoK. Sudan National Health Account. Khartoum: Sudan Federal ministry of Health and University of Khartoum; 2008.



In response to these challenges, the 2013-2016 NRHSP set out to reduce maternal mortality and improve the reproductive health outcomes of the citizens. This was to be achieved by providing a universally accessible, quality, integrated, equitable, and sustainable comprehensive reproductive health care package. Its aim was to reduce maternal mortality from 2,054 per 100,000 live births to 1,680⁹ per 100,000 live births by 2015. As Table 2 indicates, this target has been met.

1.2.3 Family planning

While the 2013-2016 NRHSP emphasized the importance of investment in family planning, the successor 2016-2026 NRHSP does not make reference to family planning, resulting in a gap in policy direction. The investment case therefore drew policy guidance from the 2013-2016 NRHSP which aimed to promote

'availability of the full range of family planning/ contraceptive methods at all levels of the health system'.¹⁰ It also advocated for enhancing service institutions whose mandate is to provide sexual and reproductive health information and services, including counselling, family planning, emergency obstetric and neonatal care (EmONC), and comprehensive post-abortion care for adolescents and youth at all levels.

In addition, although it remains unknown how much has been achieved, the 2013-2016 Plan was poised to improve access to reproductive health by at least 25 per cent by 2015 by promoting RH and social rights of adolescents and youth, as well as ensuring gender-based RH and social services in the country. Table 3 shows some key health indicators for family planning in South Sudan.

Table 2: South Sudan: Key health indicators for maternal health

INDICATOR	FIGURE	YEAR
Health allocation as percentage of the national budget (2019/20) ^a	1%	2019/2020
Health expenditure per capita ^b	\$23	2017
Maternal mortality ratio (deaths per 100,000 live births) ^c	789	2015
Infant mortality rate (deaths per 1,000 live births) ^d	75	2010
Neonatal mortality rate (per 1,000 live births) ^c	40	2018
Under-five mortality rate (deaths per 1,000 live births) ^c	98.6	2018
Life expectancy at birth (years) ^c	57.3	2015
Antenatal care at least once by skilled personnel ^e	40.3	2010
Birth attended by skilled personnel ^e	19	2010
Deliveries at a health facility ^e	11.5%	2010
Midwife-nurse per 100,000 people	<1	

a MoFP RoSS approved budget, FY2019/2020

b Global Health Observatory data repository for South Sudan, 2015

c Global Health Observatory data repository for South Sudan - <https://apps.who.int/gho/data/node.cco.ki-SSD?lang=en>

d Global Health Observatory data repository for South Sudan - <https://apps.who.int/gho/data/node.cco.ki-SSD?lang=en>

e South Sudan Household Health Survey, 2010

⁹ MoH, Reproductive Health Strategic Plan 2013-2016.

¹⁰ National Reproductive Health Strategic Plan, 2013.

Table 3: South Sudan: Key health indicators for family planning

INDICATOR	FIGURE	YEAR
Total fertility rate per woman ^a	4.5	2021
Adolescent fertility rate (births per 1000 women 15-19 years) ^a	158	2021
Teenage pregnancy rate ^b	30%	2010
Contraceptive use rate (married women) ^a	8%	2021
Modern contraceptive use (married women) ^a	7%	2021
Unmet need for family planning (married women) ^a	30%	2021
Gender-based violence prevalence rate ^c	40%	2009
% of girls married by age 18 years ^a	52%	2021

a State of World Population, 2021

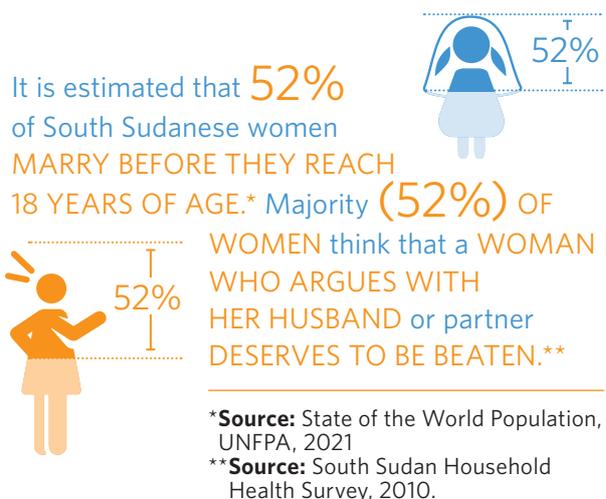
b South Sudan Household Health Survey, 2010

c Pandora's Project (2009). "Male Rape and Assault: Dispelling the Myths" <http://www.pandys.org/articles/malerape.html>

1.2.4 Child marriage, gender-based violence, and health

South Sudan's commitment to end child marriage and promote human rights is embodied in official policy documents. The 2011 Transitional Constitution, Child Act (2008), Strategic National Action Plan (SNAP) (2017), and National Girls' Education Strategy, 2018-2022 all provide strategies for attaining specific goals under child protection, gender equality, and empowerment of women and girls in the country. In particular, SNAP aims to eliminate early and forced marriages by 2030. These legal and policy instruments align with international and regional human rights conventions, including the United Nations Convention on the Rights of the Child (UNCRC),¹¹ Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW),¹² African Charter on Human and People's Rights on the Rights of Women in Africa,¹³ and the African Charter on the Rights and Welfare of the Child.¹⁴ In this respect, SNAP builds on Target 5.3¹⁵ of the United Nations Sustainable Development Goals (SDGs).

The 2010 South Sudan Household Health Survey (SSHHS) indicated that 7.3 per cent of women marry before the age of 15 years (8 per cent for urban women and 6.6 per cent for rural women). This represents some progress from 2006 where 16.7 per cent of women married before age 15 (SSDHS, 2006). As of 2021, it is estimated that 52 per cent of South Sudanese women marry before the age of 18 (State of the World Population, UNFPA, 2021). (See Table 3).



¹¹ <https://www.unicef.org/child-rights-convention/what-is-the-convention>

¹² <https://www.un.org/womenwatch/daw/cedaw/>

¹³ <https://au.int/en/treaties/protocol-african-charter-human-and-peoples-rights-rights-women-africa>

¹⁴ <https://au.int/en/treaties/african-charter-rights-and-welfare-child>

¹⁵ To eliminate all harmful practices, such as child, early and forced marriage and female genital mutilations.



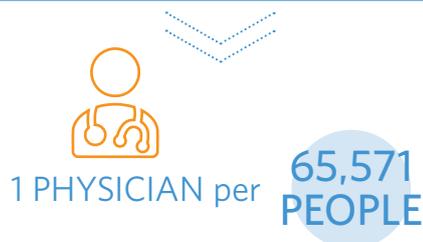
South Sudan's sociocultural construct normalizes gender-based violence. For example, at least 52 per cent of South Sudanese women think that a woman who argues with her husband or partner deserves to be beaten.¹⁶ Data collected by the Gender-based Violence - Information Management System (GBV-IMS) in South Sudan in 2016 showed that approximately 98 per cent of reported GBV incidents affected women and girls.¹⁷ The same report also showed that 20 per cent of married women were abused by their husbands/partners. The Pandora Project (2009), earlier reported that GBV prevalence in South Sudan was at least 40 per cent.

The human immunodeficiency virus (HIV) epidemic in South Sudan is categorized as low and generalized at an average of 2.7 per cent, with pockets of HIV concentration among specific and vulnerable populations who have a prevalence of 5 per cent or more. The primary mode of infection is heterosexual exposure followed by mother-to-child transmission during pregnancy, at birth, and through breastfeeding. Polygyny contributes to this tragic outcome. Forty-one per cent of all unions studied in 2010 and 46 per cent in 2006 were reported as being in polygynous relationships. Evidence indicates that women who share a husband are at higher risk of STIs, including HIV.

1.2.5 Health infrastructure and workforce

South Sudan's health infrastructure is inadequate. There are few health facilities that can provide adequate health care. According to the 2013-2016 Reproductive Health Strategic Plan, there are about 14,000 people served per health unit, 75,000 per health centre, and 400,000 per hospital, falling profoundly short of WHO's requirement of 10,000 people per facility. One of the major barriers to comprehensive health care provision in South Sudan is the acute shortage of skilled health workers, particularly nurses, midwives, and physicians (Sami *et al.*, 2020). There is one physician per 65,574 people and one midwife per 39,088 people in the country. Owing to these shortages, South Sudan now relies heavily on inadequately trained or low-skilled health personnel, with task shifting being currently capitalized upon to meet service delivery needs (WHO, n.d). In 2010, there were only 500 trained physicians in South Sudan (Achiek and Lado 2010). A vast majority of them have limited professional qualification and certification and work largely in the NGO sector (Mayai, 2016).

ONLY 40% OF HEALTH FACILITIES have been FUNCTIONAL IN THE LAST DECADE. The ratio for hospital service is 14,000 people served per health unit, 75,000 per health centre, and 400,000 per hospital. There is also ACUTE SHORTAGE OF SKILLED HEALTH-CARE WORKERS.



¹⁶ South Sudan Household Health Survey 2010.

¹⁷ <https://www.humanitarianresponse.info/en/operations/south-sudan/document/gender-based-violence-sub-custer-strategy-south-sudan-2017>

1.3 Making a case for investing in transformative results in South Sudan

In response to the challenges outlined above, UNFPA, in collaboration with the Government of South Sudan and partners, is committed to improving health and well-being of the population advancing gender equality, and contributing to socioeconomic transformation in South Sudan. In this regard, UNFPA supports programmes promoting human rights and gender equality and aligned with the National Development Strategy (2018-2021), the United Nations Sustainable Development Cooperation Framework (UNSDCF) (2019-2021), and the Sustainable Development Goals. In particular, integrated results will contribute to the achievement of the transformative results of ending unmet need for family planning; preventable maternal deaths; and gender-based violence (GBV) and harmful practices including female genital mutilation and child marriage. These also contribute directly to the achievement of SDGs 3 and 5 and indirectly to SDGs 10, 16 and 17,¹⁸ while also effectively contributing to the aspirations of the Africa Agenda 2063.

The country-level investment cases provide a quantitative basis for the Government of South Sudan and partners to consider the scale and scope of investments needed to prioritize proven, high-impact and cost-effective interventions required to accelerate progress towards achievement of the transformative results. The investment cases are also expected to inform partnership efforts with UNFPA and other partners and the mobilization of additional domestic and external financing. In this regard, recognition of the continuously evolving

sustainable financing landscape and situating country-level investments within the development, humanitarian and peace context is critical.

The impact and cost estimates for each of the transformative results are presented in the subsequent chapters - Chapter Two, on ending preventable maternal deaths; Chapter Three, on ending unmet need for family planning, and Chapter Four, on ending GBV and harmful practices. The final chapter summarizes and concludes the results.



¹⁸ SDG 3: Ensure healthy lives and promote well-being for all at all ages; SDG 5: Achieve gender equality and empower all women and girls; SDG 10: Reduce inequality within and among countries; SDG 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable and inclusive institutions at all levels; and SDG 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development.



2. ENDING PREVENTABLE MATERNAL DEATHS



2.1 Introduction

This chapter presents estimates of the impact and costs of carefully selected interventions to end preventable maternal deaths. The national and international health policies and strategies provide the strategic direction for the reproductive, maternal, newborn, child, adolescent health and nutrition priorities and define the country's evidence-based interventions, investments, and partnerships to reduce maternal mortality, newborn and under-five mortality rates in the country. Within these frameworks, this investment case aims to guide scale-up actions to end or significantly reduce the number of preventable maternal deaths in South Sudan by 2030.

2.2 Methodology

The estimates in this chapter are based on 27 maternal interventions that have been scientifically proven to reduce and end preventable deaths globally, and they are the target of this investment case in South Sudan. (See Table A4 in Appendix A for a detailed list of interventions). Scaling up the coverage of these high impact maternal health interventions aims to ensure that women of child bearing age have access to a basic package of health services for the prevention and treatment of complications during pregnancy and childbirth and reduce preventable maternal mortality and morbidity. The Spectrum policy software (version 6.06) was used for all estimations. Details of the tool and methodological process are presented in Appendix B.

2.3 Projection of priority interventions

In consultation with the NRG, three alternative projection scenarios were adopted to model the level of coverage for each maternal health intervention package and targets that could possibly be achieved by 2030 considering resource inputs, national plans, intervention effectiveness and the feasibility of scaling up different interventions in South Sudan's context (Table 4). The impact and cost of a status quo scenario are also explained below. The baseline and endpoint for all the projections are 2020 and 2030, respectively, and the first year of impact of the interventions is 2021.

Scenario 1: Status quo or the business-as-usual scenario

For this projection scenario, it was assumed that the Government of South Sudan will continue with current baseline trends in maternal health intervention coverage (often referred to as the "business-as-usual scenario"). This essentially means there will be no change in coverage rates of selected high impact maternal health interventions from 2020 through 2030.

Scenario 2: Modest progress

This projection scenario sets modest policy targets of scaling up the coverage of all high impact/priority maternal health interventions to 30 per cent by 2030 based on the Government's plans such as the RMNCAH & N 2018-2022, the



costed Boma Health Initiative (2019), National Health Policy (2016-2026) among other national and international initiatives. This translates into an average scale-up of about 1.5 to 3 percentage points annually in coverage of high impact maternal interventions from the baseline.

Scenario 3: Achievable progress

This projection scenario sets achievable policy targets of scaling up of the coverage of all high impact/priority interventions from the baseline to 50 per cent by 2030 based on the Government's plans such as the RMNCAH 2018-2022, the costed Boma Health Initiative (2019), National Health Policy (2016-2026) among other national and international initiatives. This translates into an average scale-up of coverage by about 2 to 5 percentage points annually of selected maternal interventions, including contraceptive use.

Scenario 4: Ambitious/universal progress

This projection scenario sets ambitious policy targets of scaling up coverage of all high impact/priority interventions to 100 per cent by 2030 in accordance with universal health coverage (UHC) per the SDG commitments. This translates into an average scale-up of about 10 percentage points annually in coverage of selected high impact maternal interventions from the baseline, except for contraceptive use. The scale-up in contraceptive use was in line with projections in Chapter Three of this report.

The coverage scale-up of maternal health interventions for each of the scenarios (2 to 4) is presented in Table 4.





Table 4: Baseline and endpoint projection of maternal health intervention coverage targets by scenario, 2020-2030

MATERNAL HEALTH INTERVENTIONS	2020 BASELINE COVERAGE (%)	2030 ENDPOINT COVERAGE TARGETS (%)		
		MODEST COVERAGE (%)	ACHIEVABLE COVERAGE (%)	AMBITIOUS COVERAGE (%)
PERICONCEPTUAL				
Contraceptive Use	5.0	30.0	40.0	50.0
Post-abortion case management	22.4	30.0	50.0	100.0
Ectopic pregnancy case management	22.4	30.0	50.0	100.0
PREGNANCY				
Micronutrient supplementation	22.4	50.0	50.0	100.0
TT - Tetanus toxoid vaccination	32.4	50.0	50.0	100.0
Intermittent preventive treatment of malaria	32.8	50.0	50.0	100.0
Syphilis detection and treatment	13.3	30.0	50.0	100.0
Calcium supplementation*	0.0	30.0	50.0	100.0
Balanced energy supplementation*	0.0	30.0	50.0	100.0
Hypertensive disorder case management	4.2	30.0	50.0	100.0
Diabetes case management	3.2	30.0	50.0	100.0
Malaria case management	13.4	30.0	50.0	100.0
Fetal growth restriction detection and management	22.4	30.0	50.0	100.0
CHILDBIRTH				
Clean birth environment	9.6	30.0	50.0	100.0
Manual removal of placenta	4.4	30.0	50.0	100.0
MgSO4 for eclampsia	8.8	30.0	50.0	100.0
Antibiotics for preterm or prolonged PROM	8.7	30.0	50.0	100.0
Parenteral administration of antibiotics	8.7	30.0	50.0	100.0
Assisted vaginal delivery	2.9	30.0	50.0	100.0
Parenteral administration of uterotonics	10.4	30.0	50.0	100.0
Removal of retained products of conception	3.9	30.0	50.0	100.0
Induction of labour for pregnancies lasting 41+w	22.4	30.0	50.0	100.0
Antenatal corticosteroids for preterm labour	22.4	30.0	50.0	100.0
Cesarean delivery	2.7	30.0	50.0	100.0
Blood transfusion	1.5	30.0	50.0	100.0
PREVENTIVE				
ITN/IRS - Households protected from malaria	38.9	50.0	50.0	100.0
CURATIVE				
Maternal sepsis case management	22.4	30.0	50.0	100.0

*Calcium and balanced energy supplementations are currently not routine practices in South Sudan and thus have zero coverages at the baseline.

2.4 Costing interventions

Costing these priority interventions required information on unit costs as well as the population expected to benefit from each of the interventions. The LiST tool was used for estimating the costs, using baseline information from various sources as well as population data uploaded into DemProj. To achieve comprehensive cost estimates for the interventions, the LiST tool uses default distribution of interventions by delivery channels including community outreach, clinic and hospital level care. Staff salaries are pre-populated and include salaries for full-time staff, benefits and time utilization. The details for the costing procedure within the LiST tool can be found in Appendix B.

2.5 Impact and cost of scaling up interventions to end preventable maternal deaths

The causes of preventable maternal deaths in South Sudan are known and there exists a set of evidence-based solutions to reducing and ultimately ending most preventable maternal deaths in the country. For the first time, the total resources needed to significantly reduce and end preventable maternal mortality have been estimated.

- Ending preventable maternal deaths rests on scaling up the coverage of high impact maternal health interventions.

- 5,570 maternal lives could be saved between 2020 and 2030 with an achievable (50 per cent) scale-up coverage scenario compared to the status quo.
- The maternal mortality ratio could decline from 789 deaths per 100,000 live births in 2020 to 530 deaths per 100,000 live births by 2030 with an achievable scale-up of coverage compared to the status quo.
- The total investment required for the achievable coverage is \$408 million between 2020 and 2030.
- Available financing from the Government, donors, and other sources is projected at \$90 million between 2020 and 2030. The financing gap or the new investment required is therefore projected as \$318 million.
- The annual spend needs to increase from \$16 million in 2020 to \$67 million by 2030 to meet the achievable level of scale-up for this investment case.

2.5.1 Assessing the benefits of investing in ending preventable maternal deaths

Investing in ending preventable maternal deaths would save maternal lives and reduce maternal mortality ratio. The LiST software was used to estimate the number of maternal lives saved and reduction in maternal mortality ratio attributable to scaling up of coverage of priority maternal health interventions including contraception compared to the status quo. (Refer to Table A18 in Annex A, Figure 2 and Figure 3).



MATERNAL MORTALITY COULD DECLINE from 789 deaths to 530 deaths (per 100,000 live births) by 2030 WITH AN ACHIEVABLE SCALE UP OF HIGH IMPACT/PRIORITY SRH INTERVENTIONS TO 50%.



Investing in reducing and ending preventable maternal deaths would result in substantial decrease in maternal deaths as shown in Figure 2. The figure shows that maternal deaths could decline from 3,055 in 2020 to between 2,487 and 1,072 in 2030 across the three scenarios. Similarly, investing in reducing and ending

preventable maternal deaths also would result in substantial decrease in maternal mortality ratio (Figure 3), from a baseline ratio of 789 deaths to between 631 to 386 deaths (per 100,000 live births) in 2030 across the three scenarios. Both indicators show that there is very little or no gain under the status quo scenario.

Figure 2: Trends in the number of maternal deaths by coverage scenario, 2020-2030

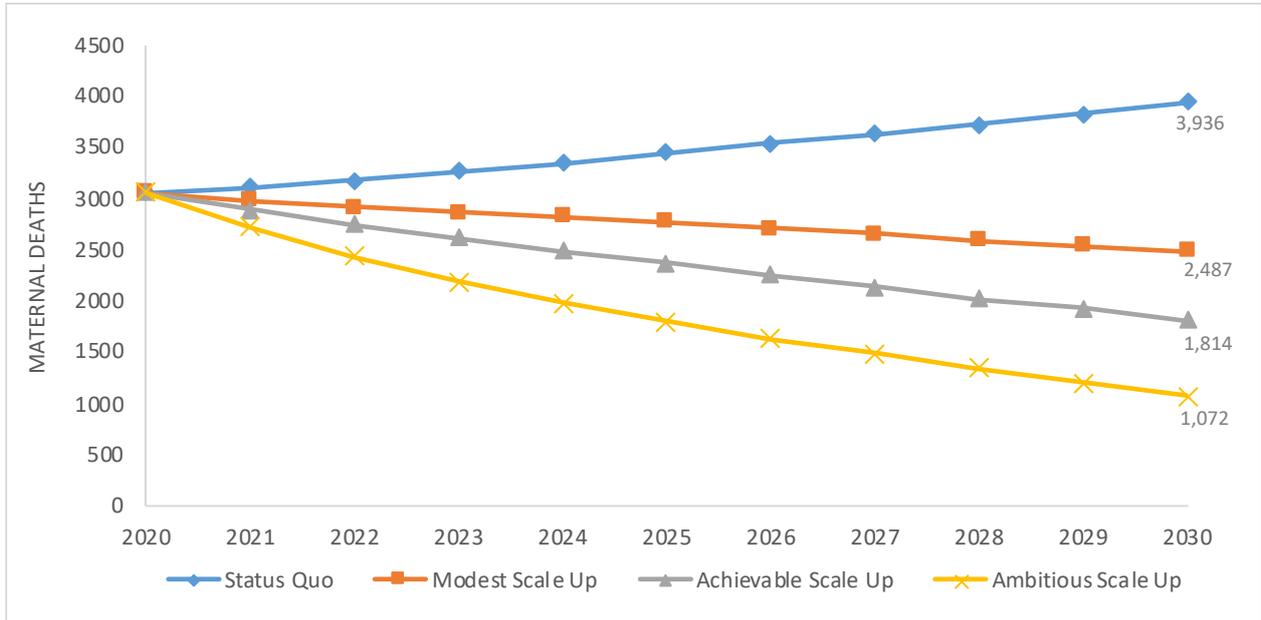
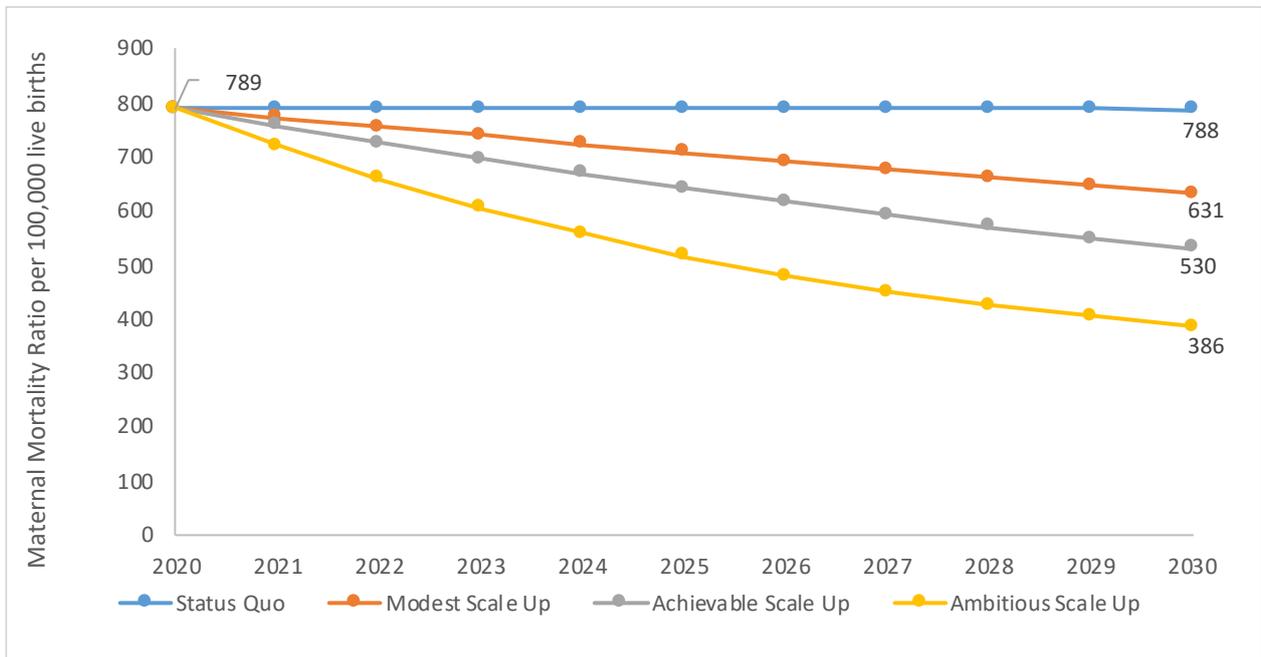


Figure 3: Trends in maternal mortality ratio (deaths per 100,000 live births), by coverage scenario, 2020-2030



2.5.2 Cost of investing in reducing and ending preventable maternal deaths

The cost requirements for investing in reducing and ending preventable maternal deaths per scenario are presented in Table 5. The ambitious scenario entails the highest cost (about \$620 million). The cost of the interventions ranges from \$47 million to \$194 million across the scenarios. Programme costs ranges from \$7 million to \$29 million, while logistics costs range from \$5 million to \$25 million.

Based on available health financing data in the country and as described in Chapter One, Table 6 puts forward possible sources of projected financing that could be available to support reduction of preventable maternal deaths in South Sudan. The total amount required for financing a 50 per cent coverage target to reduce maternal mortality is \$408 million with a funding gap of \$317.8 million (78 per cent).

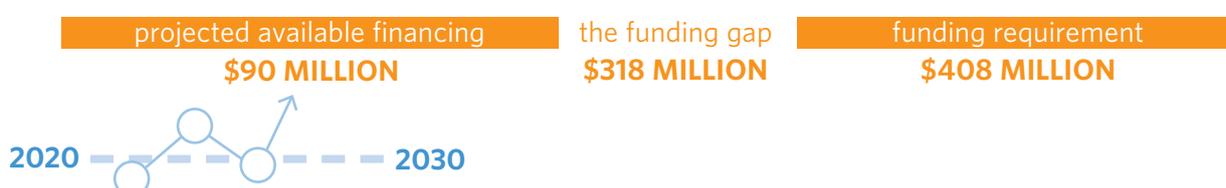
Table 5: Costs of scaling up of maternal health intervention coverage by projection scenario (\$ millions)

COST	STATUS QUO	MODEST SCENARIO	ACHIEVABLE SCENARIO	AMBITIOUS SCENARIO
Intervention costs	46.80	98.00	128.00	194.00
Programme costs	7.02	14.80	19.20	29.20
Wastage costs	0.08	2.06	2.70	4.15
Logistics costs	4.90	12.30	16.20	25.00
Infrastructure investment costs	23.40	49.20	64.00	97.20
Other health system costs	65.00	137.00	178.00	270.00
Total	147.12	313.36	408.10	619.55

Table 6: Achievable coverage scenario for prevention of maternal deaths: financing required, available financing, and financing gap, 2020-2030 (\$ millions)

TRANSFORMATIVE RESULT (AT 50% COVERAGE)	TOTAL INVESTMENT/ FINANCING REQUIRED	PROJECTED FUNDING AVAILABLE			FUNDING GAP	FUNDING GAP (%)
		GRSS	DONORS/ PARTNERS	OTHER (PRIVATE)		
Ending preventable maternal deaths	408.00	7.18	63.00	20.00	317.82	78.0

With the PROJECTED AVAILABLE FINANCING OF \$90 MILLION between 2020 and 2030, the funding gap to attain the achievable scale up of coverage of HIGH IMPACT/PRIORITY SRH INTERVENTIONS TO 50% is \$318 million (or 78% of total funding requirement).





3. ENDING UNMET NEED FOR FAMILY PLANNING



3.1 Introduction

The prevailing family planning situation in South Sudan suggests that “business as usual” will not be adequate to reach desired levels of modern contraceptive prevalence (mCPR) and address the unmet need for family planning in the country. To ensure effective policy efforts, it is important to match targets and commitments with an understanding of the cost implications of high impact family planning interventions. The purpose of this chapter is to present the estimates for the impact and cost of interventions to achieve the transformative result of ending unmet need for family planning.

3.2 Methodology

To achieve this transformative result, six different methods of modern contraception were considered in consultation with the NRG. These include male condoms, pills, 3-month injectable, implants, IUD, and female sterilization. The prevalence projections for each of these modern method options are shown in Table A¹⁹ in Appendix A. The projections for male condom use and the 3-month injectable prevalence rates will increase from 10 per cent each in 2020 to 20 per cent and 15 per cent respectively in 2030. Female sterilization prevalence rate will increase from 2.5 per cent in 2020 to 8.5 per cent in 2030. The prevalence rate of the two types of implants, Implanon and Jadelle, will increase from 5 per cent in 2020 to 10 per cent and 7.5 per cent, respectively, in 2030. It is expected that the prevalence

of use of the two types of IUD will increase from 2 per cent in 2020 to 7 per cent in 2030, while that of pills will increase from 5 per cent in 2020 to 25 per cent in 2030. On the contrary, the prevalence rate of traditional methods of contraception such as withdrawal, periodic abstinence and other types are targeted to be reduced from 7.5 per cent, 36 per cent and 15 per cent, respectively in 2020 to zero per cent by 2030. These method-mix targets were subjected to scrutiny by experts in the NRG and were approved as being probable within the context of South Sudan.

3.3 Costing interventions

One limitation of the FamPlan tool is its inability to separately cost the family planning interventions. The LiST tool was relied upon to generate the cost estimates for proven family planning interventions. The costs were disaggregated by component (or type of cost) for each of the interventions. Details of the costing process is provided in Appendix B.

3.4 Projection of modern contraception prevalence

To arrive at the final estimates for unmet need for family planning, several projections and assumptions had to be made in line with national targets to reach mCPR target by 2030.¹⁹ Each of these scenarios are

¹⁹ National commitment for accelerating the targets of the International Conference on Population and Development, 2019.

presented below. Table A17 (in Appendix A) presents the projections for different scenarios for mCPR over the period 2020-2030.

Scenario 1: Status quo or “business as usual”

In this scenario, it is assumed that the current rate of contraception will continue into the near future without any changes in policy interventions. This is the “business-as-usual” scenario. In this scenario, there are no changes to the modern contraceptive prevalence rate.

Scenario 2: Modest projection scenario

Projection scenario 2 sets a modest policy target of scaling up mCPR from 5 per cent to 30 per cent by 2030. This is in line with the policy focus of the Government that seeks to achieve an mCPR of between 30 per cent and 40 per cent. In this projection, the 30 per cent policy target was used and the corresponding costs and impacts were projected.

Scenario 3: Achievable projection scenario

Projection scenario 3 is considered an achievable target with an increase in the mCPR from 5 per cent to 40 per cent by 2030. This projection uses the higher policy target of the Government. This requires several interventions to change in favour of using modern contraception to replace the currently dominant traditional methods.

Scenario 4: Ambitious projection scenario

This is an ambitious plan that seeks to increase the mCPR from the current 5 per cent to 50 per cent by the end of 2030. This requires aggressive efforts to change in favour of

modern methods of contraception and away from the dominant traditional methods. The corresponding impacts and costs are projected and discussed. This scenario is considered ambitious as it lies beyond the 30 per cent to 40 per cent target set by the Government.

All estimates were done using the Spectrum policy software (version 6.06). Details of the tool and methodological process are presented in Appendix B.

3.5 Impacts and costs of ending unmet need for family planning

3.5.1 Impacts of ending unmet need for family planning

Below Table 7 presents the impact of increasing mCPR from the current 5 per cent to rates between 30 per cent and 50 per cent. The results show that the highest impact is on the reduction in the number of unintended pregnancies. Specifically, the number of unintended pregnancies averted by 2030 will be 1,084,243 for the modest scenario; 1,401,111 for the achievable scenario; and 1,717,979 for the ambitious scenario. The number of unsafe abortions averted ranges from 364,305 under the modest scenario to 577,241 under the ambitious scenario. The number of maternal deaths averted ranges between 11,960 and 19,014 for the modest and ambitious scenarios, respectively. The comparison of impacts across the different scenarios is presented in Table 7.



INCREASING modern contraceptive prevalence rate (mCPR) has the highest impact on the **REDUCTION IN THE NUMBER OF UNINTENDED PREGNANCY**. Between the modest scenario with 30% mCPR and 40% and 50% mCPR, the number of unintended pregnancy averted is increased from 1.084 million to 1.40 million (30%) and 1.72 million (58%), respectively.



Table 7: Summary of impact of increasing modern contraceptive prevalence rate (mCPR), 2020-2030

IMPACT	STATUS QUO: 5% mCPR	SCENARIO 2: 30% mCPR	SCENARIO 3: 40% mCPR	SCENARIO 4: 50% mCPR
Number of unintended pregnancies averted	292,075	1,084,243	1,401,111	1,717,979
Number of maternal deaths averted	3,202	11,960	15,500	19,014
Number of unsafe abortions averted	98,137	364,305	470,774	577,241
Number of modern method users	786,911	2,921,177	3,774,884	4,628,589
Modern contraceptive prevalence rate	5.0	30.0	40.0	50.0
Contraceptive prevalence rate	6.0	30.0	40.0	50.0
Total fertility rate	4.58	3.72	3.65	3.55
Unmet need for family planning (%)	29.6	6.8	6.8	6.8

3.5.2 Costs of ending unmet need for family planning

The costs of the interventions are presented as incremental costs over and above the 2020 baseline. The analysis shows that each component contributes to the total incremental cost in different ways, with the cost being driven mainly by drugs and supply. This is followed by labour and capital costs. Recurrent costs are the least. These incremental cost estimates for all three scenarios (30 per cent, 40 per cent and 50 per cent) and the status quo are summarized in Table 8, while the breakdown of each of the cost components is shown in Tables A10 to A13 in Appendix A.

The results (by 2030), show that for the modest scenario (30 per cent mCPR), drugs and supply will account for 57 per cent of the total incremental costs, followed by labour cost (21 per cent), capital cost (17 per cent) and other recurrent costs (5 per cent). For the achievable scenario (40 per cent mCPR), drugs and supply will account for 55 per cent of the total incremental costs, followed by labour cost (24 per cent), capital cost (16 per cent), and other recurrent costs (5 per cent). For the ambitious scenario (50 per cent mCPR), drugs and supply will account for 55 per cent of the total incremental costs, followed by labour cost (23 per cent), capital cost (17 per cent) and other recurrent costs (5 per cent) as seen in Figure 4.

Table 8: Summary of incremental costs for family planning, by component, by scenario, 2020-2030 (\$ millions)

COST COMPONENT	STATUS QUO	SCENARIO 1 (30%)	SCENARIO 2 (40%)	SCENARIO 3 (50%)
Drug and supply costs	0.52	12.00	15.60	19.70
Labour costs	1.30	4.50	6.76	8.32
Other-recurrent costs	0.53	1.10	1.40	1.80
Capital costs	0.18	3.60	4.73	6.08
Total incremental intervention costs	2.05	21.00	28.50	35.86

Figure 4: Summary of incremental costs for family planning by cost component, by scenario, 2020-2030

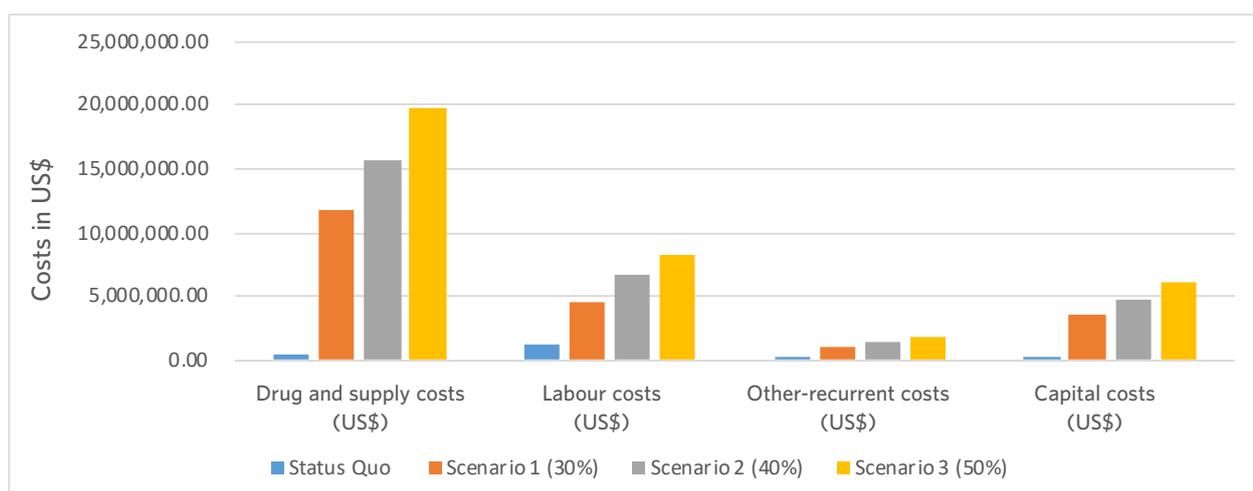


Table 9 presents estimates of the funding required to achieve each of the projection scenarios. Based on data on health financing allocation described in Chapter One, the investment cases assume that approximately 1 per cent of the budget for sexual and reproductive health is allocated to family planning programmes in the country. This assumption

was discussed and validated by the NRG and was necessary as there was no information on the actual cost incurred in provision of family planning services and modern contraceptive commodities. The estimates show a financing gap ranging from 96 per cent to 98 per cent of total financial needs for the modest to the ambitious scenarios, respectively.

Table 9: Funding gaps in eliminating unmet need for family planning under different scenarios, 2020-2030 (\$)

SCENARIO FOR UNMET FP NEED	TOTAL INVESTMENT/FINANCING REQUIRED (A)	PROJECTED FUNDING AVAILABLE AT THE COUNTRY LEVEL (B)			FINANCING GAP (C)	FINANCING GAP (C)/(A) (%)
		GRSS	Donors/Partners	Other (Private)		
Scenario 1 (30% mCPR)	21,000,000	72,000	628,300	197,500	20,194,033	95.74
Scenario 2 (40% mCPR)	28,500,000	72,000	628,300	197,500	27,602,200	96.85
Scenario 3 (50% mCPR)	35,860,000	72,000	628,300	197,500	34,962,200	97.50

The funding gap TO ACHIEVE THE TARGETS OF INCREASING mCPR TO 30% (modest scenario) UP TO 50% (ambitious scenario) is between **\$10.2 million** (96%) and **\$35 million** (98%)





4. ENDING GENDER-BASED VIOLENCE AND HARMFUL PRACTICES, INCLUDING CHILD MARRIAGE



4.1 Introduction

This chapter provides estimates of the costs and impact of gender-based violence and harmful practices that affect women and young girls in South Sudan, namely child marriage. The chapter relies on pre-determined high impact interventions with the potential to scale effective coverage. The objective is to inform the Government of South Sudan and partners of how much it would cost to implement these interventions and the corresponding impacts. The results are based on considered assumptions made due to the absence of reliable data on both child marriage (CM) and gender-based violence in South Sudan. The analytical details are discussed in the following sections.

4.2 Ending gender-based violence

Globally, one in three women and girls becomes a victim of GBV in their lifetime. Data collected by the Gender-based Violence - Information Management System (GBV-IMS) in South Sudan in 2016, showed that approximately 98 per cent of reported GBV incidents affect women and girls.²⁰ Twenty per cent of married women suffer from IPV. Moreover, preliminary data from the

GBV-IMS show a total of 9,647 incidents of GBV were reported by 19 partner organizations, including UNFPA-supported One-Stop Centres, between January and December 2020. Most survivors were from host populations (67 per cent), followed by internally displaced populations (IDPs) at 24 per cent, and refugees accounting for 6 per cent of survivors. Among survivors, 4 per cent were persons with disability, and 3 per cent were unaccompanied minors. Physical assault (37 per cent) remains the most prevalent type of GBV, followed by rape (19 per cent). GBV is pervasive in the country and women and girls suffer considerably more than men.

These conditions are further exacerbated by conflict and displacement where there is increased GBV for women and girls in displacement settings as shown in Figure 5, with a drastically rising incidence of GBV since 2015. This calls for greater support to increase access to quality, integrated services for GBV survivors, strengthen protection and security in prevention of GBV, create a conducive and supportive legal and policy environment for addressing GBV, and mobilize communities to act against harmful customs and promote positive sociocultural practices.

²⁰ <https://www.humanitarianresponse.info/en/operations/south-sudan/document/gender-based-violence-sub-custer-strategy-south-sudan-2017>



Table 10: Cumulative costs for all interventions to prevent child marriages, 2020-2030 (\$)

INTERVENTION	2020-2025	2026-2030
Education Intervention		
Rural School Supply	7,600,000	26,000,000
Improve School Infrastructure	3,800,000	13,000,000
Pedagogical Changes	7,600,000	26,000,000
Cash Transfers to Poor Students	7,500,000	26,000,000
Malaria Prevention	760,000	2,600,000
Sub-total	27,260,000	93,600,000
Community Intervention		
Community Mobilization	12,000,000	40,000,000
Conditional Economic Incentives	53,000,000	184,000,000
Life Skills	83,000,000	288,000,000
Sub-total	148,000,000	512,000,000
Total (Education + Community)	175,260,000	605,600,000

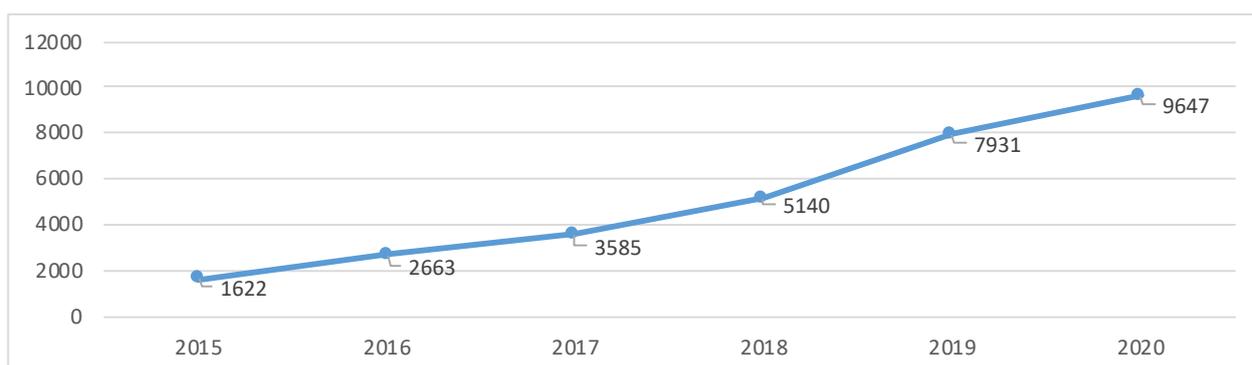
4.2.1 Methodology

As with the child marriage situation, attempts at estimating the impact and costs of GBV interventions in South Sudan were undermined by the absence of reliable information. For example, the Impact40 tool was limited to IPV, excluding other intervention coverage related to GBV prevention and response programmes in South Sudan. Thus, the scaleup of the interventions to end or reduce GBV in South Sudan by 2030 was solely based on a conjecture that South Sudan will likely pursue the target of reaching at least 5 per cent of the affected population in 2021 and an additional 5 per cent annually. This level of effort is not unusual for a country that is economically distressed, with its annual health spending just under 3 per cent of the country's total budget expenditure. If this projected investment is assumed now

and sustained into the future, then there should at least be 50 per cent coverage for all - the proposed indicators by 2030.

The largest portion of the GBV prevention and response cost in South Sudan consists of medical services, psychosocial support, shelter and protection, economic empowerment skill building, and legal assistance. However, the current model does not factor this in. Instead, it accounts for medical treatment only for rape victims who report the incident. This means that the cost presented below should be seen as a minimum cost. Counselling is also considered part of treatment. In summary, the current treatment cost only covers rape victims who report, and, for each year, this number is multiplied by the 5 per cent coverage to obtain the number of beneficiaries.

Figure 5: Trends in reported GBV cases in South Sudan, 2015-2020



Source: GBVIMS, 2020



4.2.2 Results

The Impact40 tool assumes 22 per cent of women experience IPV annually in South Sudan. When the above interventions are adopted, modest improvement in IPV would be realized, as presented in Table 11. Due to the economic constraints referenced above, among other barriers, South Sudan's gender-based violence interventions should, therefore, be aimed at reducing the current IPV level from 22 per cent to at least 18 per cent by 2030. Other supplementary initiatives may go a long way in accelerating this improvement.

Without any intervention, the number of women experiencing IPV would total reach 3.05 million between 2021 and 2025, and 3.12 million between 2015 and 2030. If a 5 per cent annual increase in the intervention is adopted, the number of IPV cases in South Sudan would start to decline. By 2025, 171,708 cases of IPV would be averted, and more than half a million additional by 2030. With a 50 per cent intervention coverage for all indicators achieved by 2030, 392,376 cumulative IPV cases would be averted during the first five years (2021-2025) and nearly 2.3 million cases would be averted during the second half of the decade.

4.3 Ending child marriage

4.3.1 Methodology

There is an expressed global commitment to reduce the rate of child marriage to 5 per cent by 2030. However, many countries have yet to cost the efforts required to achieve this target

due to a host of factors, one of which is the absence of reliable information. South Sudan is one of the countries affected by the lack of reliable data. Because of this, data used averages of values from Burundi, Sudan, Democratic Republic of Congo (DRC), and Somalia to approximate what South Sudan could contribute to the global action against child marriage.

South Sudan does not have sufficient information on child marriage practice and the resources needed to end the practice by 2030. This scarcity of data understandably stems from the country's experience with instability and underdevelopment. With this in mind, the Child Marriage Optimal Interventions (CMOI) Model used in this analysis is based on information from carefully chosen countries, characterized as shadows that somewhat typify the context in South Sudan. Given its tumultuous political history and development trajectory, there are only a handful of countries in the region that mirror South Sudan's experience. These countries include Sudan, DRC, Somalia, and Burundi, all of which are either going through or have been in conflict at some point in recent history. These countries also share similar socio-economic development outlooks with South Sudan, having similar human development profiles. These shadow countries fall in the category of 'low human development', according to UNDP's Human Development Report (2020).²¹

The estimates are calibrated for an individual country, a combination of which forms the optimal solutions for quasi-South Sudan. The CMOI function is based on a set of eight

Table 11: GBV indicators, 2020-2030

INDICATOR	2020	2021-2025	2026-2030
% of women experiencing IPV (by end-year)	22.00	20.85	18.85
Number experiencing IPV	592,219.32	3,046,598.00	3,122,297.25
Cumulative cases of IPV averted (5% scale up)	-	171,708.19	524,691.59
Cumulative cases of IPV averted (50% scale up)	-	392,376.10	2,272,610.60

²¹ UNDP, 2020. Human Development Report 2020. http://hdr.undp.org/sites/default/files/hdr_2020_overview_english.pdf



cost-effective interventions that could reduce child marriage to at least 5 per cent by 2030 (UNFPA's target), with 2020 serving as base period. Similarly, the African Union's Agenda 2063 and the UN SDGs both aim at ending child marriage by 2030. The current estimates are based on two broad interventions in the education sector and at community level. Sub-interventions in education include rural school services, improved school infrastructure, pedagogical changes/improvements, cash transfers, and malaria interventions. Key community interventions include community mobilization, conditional economic incentives, and life skills.

These interventions hold great promise to reduce the incidence of child marriage in a cross-section of countries. In South Sudan, however, the biggest cost of averting child marriage is in service delivery such as provision of shelter, rescue operations, and legal fees. The present analytical approach does not explicitly consider these factors. Relevant variables for this analysis include

the number of child marriages before intervention, the number of child marriages following the intervention, the number of child marriages averted following the intervention, and cost for averting child marriage.

4.3.2 Results

The results show that over 2 million children (base scenario) are likely to be married in the next 10 years if there are no interventions undertaken. However, with interventions, 62 per cent of child marriages (about 1.4 million) would be averted. The total cost of reducing child marriage to 5 per cent for the 2020-2030 period in South Sudan is \$605.6 million. Community intervention accounts for the largest portion at \$512 million (constituting 84 per cent of total cost). Education intervention accounts for about \$93.6 million (or 16 per cent). On average, \$502.50 will be required to avert one case of child marriage within the period. (See Tables 12 and 13). (See Table A15 in appendix A for detailed annualized costs).

Table 12: Total cost of reducing child marriage prevalence to 5% by 2030, by type of intervention, 2020-2030 (\$)

Total cost	605,600,000
Education cost	93,600,000
Community cost	512,000,000

Table 13: Unit cost of child marriage prevention, per intervention (\$)

INTERVENTION	UNIT COST
Education	
Rural School Supply	12.569
Improve School Infrastructure	6.284
Pedagogical Changes	12.569
Cash Transfers to Poor Students	12.569
Malaria Prevention	1.257
Community Intervention	
Community Mobilization	19.294
Conditional Economic Incentives	88.640
Life Skills	138.783



INTERVENTIONS TO REDUCE CHILD MARRIAGES TO 5% THROUGH 2030, WOULD COST **\$605.6 million**. It would result in averting 1.4 million (62%) of child marriages in South Sudan. Community intervention and education intervention are key to reducing child marriages.

Across its constituent programmes, educational interventions will cost \$9 per child reached, while community intervention will cost \$61 per child. Life skills and economic incentives primarily drive the community intervention cost, whereas education service, pedagogical changes, and cash transfers will be the most significant cost contributors for education. (See Table 10).

4.4 Gender-based violence prevention and response intervention costs

To estimate GBV intervention costs in South Sudan, Rwanda’s GBV per capita investment rates were adopted (see Table 19). Like South Sudan, Rwanda is a developing country which has recently recovered from a brutal conflict that killed nearly a million people in just three months.²² Rwanda’s resilience, as indicated by its notable socioeconomic

improvements, is not only remarkable, but also instructive for states that are emerging from periods of political turmoil like South Sudan.

Table 14 presents per unit cost for each intervention and this ranges between \$0.05 and about \$40 per person. An additional \$100,000 annually would be needed to strengthen relevant NGOs’ work and to invest in support activities, such as tracking and assessing results. However, the present unit costs are markedly lower than what the GBV technical working group (TWG) in the country proposed. For instance, the TWG proposal for unit costs are: \$250 for economic empowerment; \$125 for counselling; \$325 for treatment; and \$10 for the media campaign. The proposed cost estimates supposedly cover several objectives outlined in Box 1 in the Appendix (source: GBV partners, 2020).

The referenced unit costs are translated into the country’s total need. Table 15 presents the resources needed to combat GBV at the targeted level of interventions in South Sudan

Table 14: GBV prevention and response intervention unit cost (\$)

INTERVENTION	UNIT COST	UNIT
Community mobilization	0.71	Per person reached
Outreach to male youth	2.19	Per person reached
Economic empowerment	9.02	Per person reached
Outreach to female sex workers	2.56	Per person reached
Mass media	0.05	Per person reached
Counseling	1.12	Per person reached
Treatment	39.99	Per person reached
NGO strengthening	100,000.00	Per year
Programme support	15	Per cent of direct costs

²² <https://www.bbc.com/news/world-africa-52938283>

during the next 10 years. Between 2021 and 2025, approximately \$22.5 million would need to be raised for the various interventions. And additional \$65 million will be needed between 2026 and 2030. Altogether, South Sudan needs to mobilize \$87 million to realize the above projected outcomes. Allocation to economic

empowerment accounts for the largest share at about 60 per cent of the estimated resources, followed by community mobilization and programme support, each drawing 13 per cent of the total requirement. (See Table A16 in the Appendix for annualized costs).

Table 15: Investment needed for GBV prevention and response (\$)

INTERVENTION	2020	2021-2025	2026-2030	TOTAL	PER CENT SHARE
Community mobilization	-	2,900,000	8,500,000	11,400,000	13%
Outreach to male youth	-	1,000,000	3,100,000	4,100,000	5%
Economic empowerment	-	13,000,000	37,800,000	50,800,000	58%
Outreach to female sex workers	-	13,000	40,000	53,000	0%
Mass media	-	520,000	1,600,000	2,120,000	2%
Counseling	-	1,400,000	4,400,000	5,800,000	7%
Treatment	-	200,000	580,000	780,000	1%
NGO strengthening	100,000	500,000	500,000	1,100,000	1%
Programme support	15,000	3,000,000	8,400,000	11,415,000	13%
Total	115,000	22,533,000	64,920,000	87,568,000	100%





5. SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS



5.1 Summary of findings

5.1.1 Ending preventable maternal deaths

- South Sudan has a maternal mortality ratio of 789 deaths per 100,000 live births with an estimated 3,500 maternal deaths annually in recent years.
- An achievable scale-up of coverage of 27 high impact maternal health interventions to 50 per cent, including contraceptive use, could save over 5,500 maternal lives over the next 10 years at a total incremental (additional) cost of \$318 million in South Sudan (of a total cost of \$408 million). This could avert over 33 per cent of maternal deaths compared to the status quo and reduce the maternal mortality ratio by over 30 per cent from 789 deaths per 100,000 live births in 2020, to 530 deaths per 100,000 live births by 2030.
- An ambitious/universal scale-up of 27 high impact interventions to 100 per cent coverage could save over 8,800 maternal lives and would cost an additional \$530 million or a total cost of \$620 million over the next 10 years. This could avert over 50 per cent of maternal deaths compared to the status quo and reduce the maternal mortality ratio by 51 per cent from 789 deaths per 100,000 live births in 2020 to 380 deaths per 100,000 live births by 2030.
- From 2020 to 2030, a projected \$90 million from the Government, donors, and other partners is available/committed towards reducing preventable maternal deaths in the next decade.

- The total new investment needed to reduce preventable maternal deaths is therefore \$318 million at the achievable coverage projection scenario.

5.1.2 Ending unmet need for family planning.

- Family planning services uptake is low in the country, with an estimated 96 per cent of women aged 15-49 years currently married/ or in union not using or unable to access any family planning methods, and only 1 per cent of the 4 per cent of women who practise family planning, have used modern FP methods. Unmet need for family planning stands at 29.7 per cent.
- An increase in the mCPR to between 30 per cent and 50 per cent, with a view to ending the unmet need for family planning, will lead to a corresponding increase in the number of unintended pregnancies averted from 292,075 in 2020 to between 1,084,243 and 1,717,979 by 2030.
- Likewise, the number of unsafe abortions averted will increase from 98,137 in 2020 to between 364,305 and 577,241 by 2030 with the modest and ambitious scenarios, respectively.
- The number of maternal deaths averted is also expected to increase from 3,202 in 2020 to between 11,960 and 19,014 by 2030, with the modest and the ambitious scenarios, respectively.



- The scale-up in mCPR to between 30 per cent and 50 per cent will require additional costs between \$21 million and \$35.8 million over the period 2020-2030 across the scenarios.
- Given estimated available government resources, the funding gap ranges between \$20.19 million and \$34.96 million across the scenarios.

5.1.3 Ending gender-based violence and all harmful practices

- Without interventions, the number of women involved in IPV cases could increase from 592,219 in 2020 to 3.05 million in 2021-2025 and an additional 3.12 million in 2026-2030.
- However, with a 5 per cent annual increase in interventions, the number of IPV cases in South Sudan would start to decline. Between 2021 and 2025, 171,708 cases of IPV could be averted, and another 525, 000 cases could be averted between 2026 and 2030. With a 50 per cent intervention coverage for all indicators by 2030, 392,376 cumulative cases of IPV could be averted during 2021-2025 and an additional 2.3 million cases during the next five years 2026-2030. Achieving these outcomes would cost a total of \$87million in 2020-2030 with economic empowerment interventions representing about 60 per cent of the estimated costs, followed by community mobilization and programme support, each accounting for 13 per cent.

5.1.4 Ending child marriage

- Over 2 million children are likely to be married in the next 10 years if there are no interventions undertaken. With interventions, 62 per cent of child marriages (about 1.4 million) would be averted.
- The total cost of reducing child marriage to 5 per cent through 2030 is about \$605.60 million.
- Community intervention accounts for 84 per cent of total cost at \$512 million, followed by education intervention at \$93.60 million.

- On average, \$502.50 will be required to avert one case of child marriage in the country within the next decade.

5.2 Conclusion and recommendations

The investment cases highlight the scale and scope of high impact interventions that can transform key sexual reproductive health and rights outcomes for South Sudan, the corresponding costs, required financing, and impact. The paucity of data in South Sudan posed a constraint, thus where unavailable, data sets from comparable shadow countries were used as proxy to support the analysis.

Numerous instruments, including laws and policies, have been developed and introduced but with limited scale of programme implementation. As demonstrated by the investment cases, several priority interventions need to be significantly scaled up for effective coverage in order to avert preventable maternal deaths, end unmet need for family planning and end GBV and all harmful practices.

The country is far from meeting the Abuja Declaration on investing 15 per cent of the Government budget to the health sector, and the SDG health financing benchmark of 5 per cent of GDP for health allocation and \$86.3 per capita expenditure on health. An annual spending of 2 per cent of the Government's budget for the health sector is too modest to achieve the targeted results and deliver the commitments made by Government. With a weak economy and severely underfunded health sector, mobilizing resources with partners needs to be intensified. The investment cases should bolster policy advocacy for scaling up priority interventions enabled by availability of financing, cost-effective and efficient spending, and enhanced financial tracking within accountability mechanisms.



REFERENCES

- Achiek, M., & Lado, D. (2010). Mapping the specialist medical workforce for Southern Sudan: devising ways for capacity building. *South Sudan Medical Journal*, 3(2), 23-25.
- Ahmed, W. A. M., Shokai, S. B., Abduelkhair, I. H., & Boshra, A. Y. (2015). Factors affecting utilization of family planning services in a post-conflict setting, South Sudan: a qualitative study. *AIMS Public Health*, 2(4), 655.
- Alkema, L., Chou, D., Hogan, D., Zhang, S., Moller, A. B., Gemmill, A., ... & Inter, U. N. M. M. E. (2016). Global, regional, and national levels and trends in maternal mortality between 1990 and 2015, with scenario-based projections to 2030: a systematic analysis by the UN Maternal Mortality Estimation Inter-Agency Group. *The Lancet*, 387(10017), 462-474.
- AfDB (2021). *African Economic Outlook*. Abidjan, African Development Bank.
- Arnesen, L., O'Connell, T., Brumana, L. et al. An analysis of three levels of scaled-up coverage for 28 interventions to avert stillbirths and maternal, newborn and child mortality in 27 countries in Latin America and the Caribbean with the Lives Saved Tool (LiST). *BMC Public Health* 16, 613 (2016). <https://doi.org/10.1186/s12889-016-3238>.
- Elmusharaf, K., Byrne, E., & O'Donovan, D. (2017). Social and traditional practices and their implications for family planning: a participatory ethnographic study in Renk, South Sudan. *Reproductive Health*, 14(1), 10.
- Kane, S., Kok, M., Rial, M., Matere, A., Dieleman, M., & Broerse, J. E. (2016). Social norms and family planning decisions in South Sudan. *BMC Public Health*, 16(1), 1183.
- Mayai, A. T. (2020). Security sector spending and public safety in South Sudan, 2006–2018. *African Security Review*, 1-17.
- Mayai, A. T. (2016). The impact of public spending on infant and under-five health in South Sudan. *American Journal of Medical Research*, 3(1), 207-243.
- Mayai, A. T. (2008). Child Mortality Differentials in the Sudan: The Case of the Southern Region. University of Wisconsin--Madison.
- Mayai, A. T. (2015). *Essays in Child Health and Health Systems in Eastern Africa: Evidence from South Sudan and Ethiopia* (Doctoral dissertation, The University of Wisconsin-Madison).
- Mayai, A. T., Tiitmamer, N., & Awolich, A. (2020). The Economic Effects of the COVID-19 Pandemic in South Sudan. *The Sudd Institute*.
- Mkandawire, P., MacPherson, K., Madut, K., Atari, O. D., Rishworth, A., & Luginaah, I. (2019). Men's Perceptions of Women's Reproductive Health in South Sudan. *Health & place*, 58, 102157.
- Obwoya, J. G., Wulifan, J. K., & Kalolo, A. (2018). Factors influencing contraceptives use among women in the Juba City of South Sudan. *International Journal of Population Research*, 2018.
- Palmer, J. J., & Storeng, K. T. (2016). Building the Nation's Cody: The Contested Role of Abortion and Family Planning in Post-war South Sudan. *Social Science & Medicine*, 168, 84-92.



Sami, S., Mayai, A., Sheehy, G., Lightman, N., Boerma, T., Wild, H., ... & Spiegel, P. (2020). Maternal and Child Health Service Delivery in Conflict-affected Settings: A Case Study Example from Upper Nile and Unity States, South Sudan. *Conflict and Health*, 14, 1-12.

Storeng, K. T., Palmer, J., Daire, J., & Kloster, M. O. (2019). Behind the Scenes: International NGOs' Influence on Reproductive Health Policy in Malawi and South Sudan. *Global Public Health*, 14(4), 555-569.

Spectrum Suite of Modelling Software [<http://idfive.jhsph.edu/departments/international-health/centers-and-institutes/institute-for-internationalprograms/current-projects/lives-saved-tool/spectrum-overview/>]. Accessed 25 January 2021.

Stover J, McKinnon R, Winfrey B. Spectrum: a model platform for linking maternal and child survival interventions with AIDS, family planning and demographic projections. *Int J Epidemiol*. 2010;39 suppl 1:i7-10.

UNFPA (2021). *State of World Population 2021*. UNFPA

Walker N, Tam Y, Friberg I. Overview of the Lives Saved Tool (LiST). *BMC Public Health*. 2013;13 Suppl 3:S1.

WHO, UNICEF, UNFPA, and World Bank (World Health Organization, United Nations Children's Fund, United Nations Population Fund, and World Bank). 2014. Trends in Maternal Mortality: 1990 to 2013. Geneva: Trends in Maternal Mortality: 1990 to 2015. Estimates by WHO, UNICEF, UNFPA, the World Bank and the United Nations Population Division. Geneva: WHO.

WHO and UNICEF (World Health Organization and United Nations Children's Fund). 2013. Accountability for Maternal, Newborn, and Child Survival: The 2013 Update. Geneva: WHO; New York: UNICEF. <http://www.countdown2015mnch.org/documents/2013Report>.

World Bank (2021). World Development Indicators. Washington DC, World Bank.



APPENDIX A

Estimates of Projections for Interventions: Costs and Impacts

Table A1: Status quo/baseline coverage scenario for maternal health, 2020-2030

INTERVENTION	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Periconceptual											
Contraceptive use	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0
Post-abortion case management	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4
Ectopic pregnancy case management	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4
Pregnancy											
Micronutrient supplementation	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4
TT - Tetanus toxoid vaccination	32.4	32.4	32.4	32.4	32.4	32.4	32.4	32.4	32.4	32.4	32.4
Preventive treatment of malaria	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8
Syphilis detection and treatment	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Calcium supplementation*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Balanced energy supplementation*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hypertensive disorder case management	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
Diabetes case management	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Malaria case management	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4
Fetal growth restriction detection	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4





Table A1 (cont'd)

Childbirth											
Clean birth environment	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6
Manual removal of placenta	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
MgSO4 for eclampsia	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4
Antibiotics for preterm or prolonged PROM	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7
Parenteral administration of antibiotics	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7
Assisted vaginal delivery	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Parenteral administration of uterotonics	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4
Removal of retained products of conception	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Induction of labour for pregnancies lasting 41+w	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4
Antenatal corticosteroids for preterm labour	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4
Cesarean delivery	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Blood transfusion	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Preventive											
ITN/IRS - Households protected from malaria	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9
Curative											
Maternal sepsis case management	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4



Table A2: Modest coverage projection scenario for maternal health (30% coverage target), 2020-2030

INTERVENTION	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Periconceptual											
Contraceptive use	5.0	7.5	10.0	12.5	15.0	17.5	20.0	22.5	25.0	27.5	30.0
Post-abortion case management	22.4	23.2	23.9	24.7	25.4	26.2	27.0	27.7	28.5	29.2	30.0
Ectopic pregnancy case management	22.4	23.2	23.9	24.7	25.4	26.2	27.0	27.7	28.5	29.2	30.0
Pregnancy											
Micronutrient supplementation	22.4	23.2	23.9	24.7	25.4	26.2	27.0	27.7	28.5	29.2	30.0
TT - Tetanus toxoid vaccination	32.4	34.2	35.9	37.7	39.4	41.2	43.0	44.7	46.5	48.2	50.0
Preventive treatment of malaria	32.8	34.5	36.2	38.0	39.7	41.4	43.1	44.8	46.6	48.3	50.0
Syphilis detection and treatment	10.0	12.0	14.0	16.0	18.0	20.0	22.0	24.0	26.0	28.0	30.0
Calcium supplementation*	0.0	3.0	6.0	9.0	12.0	15.0	18.0	21.0	24.0	27.0	30.0
Balanced energy supplementation*	0.0	3.0	6.0	9.0	12.0	15.0	18.0	21.0	24.0	27.0	30.0
Hypertensive disorder case management	4.2	6.7	9.3	11.9	14.5	17.1	19.7	22.2	24.8	27.4	30.0
Diabetes case management	3.2	5.9	8.6	11.3	13.9	16.6	19.3	22.0	24.6	27.3	30.0
Malaria case management	13.4	15.1	16.7	18.4	20.0	21.7	23.4	25.0	26.7	28.3	30.0
Fetal growth restriction detection	22.4	23.2	23.9	24.7	25.4	26.2	27.0	27.7	28.5	29.2	30.0





◀ Table A2 (cont'd)

Childbirth											
Clean birth environment	10.1	12.1	14.1	16.0	18.0	20.0	22.0	24.0	26.0	28.0	30.0
Manual removal of placenta	4.6	7.1	9.7	12.2	14.8	17.3	19.8	22.4	24.9	27.5	30.0
MgSO ₄ for eclampsia	22.4	23.2	23.9	24.7	25.4	26.2	27.0	27.7	28.5	29.2	30.0
Antibiotics for preterm or prolonged PROM	9.2	11.3	13.3	15.4	17.5	19.6	21.7	23.8	25.8	27.9	30.0
Parenteral administration of antibiotics	9.2	11.3	13.3	15.4	17.5	19.6	21.7	23.8	25.8	27.9	30.0
Assisted vaginal delivery	3.1	5.8	8.5	11.2	13.9	16.6	19.2	21.9	24.6	27.3	30.0
Parenteral administration of uterotonics	11.0	12.9	14.8	16.7	18.6	20.5	22.4	24.3	26.2	28.1	30.0
Removal of retained products of conception	4.1	6.7	9.3	11.8	14.4	17.0	19.6	22.2	24.8	27.4	30.0
Induction of labour for pregnancies lasting 41+w	22.4	23.2	23.9	24.7	25.4	26.2	27.0	27.7	28.5	29.2	30.0
Antenatal corticosteroids for preterm labour	22.4	23.2	23.9	24.7	25.4	26.2	27.0	27.7	28.5	29.2	30.0
Cesarean delivery	2.7	5.4	8.2	10.9	13.6	16.4	19.1	21.8	24.5	27.3	30.0
Blood transfusion	1.5	4.4	7.2	10.1	12.9	15.8	18.6	21.5	24.3	27.2	30.0
Preventive											
ITN/IRS - Households protected from malaria	38.9	40.0	41.1	42.2	43.3	44.4	45.6	46.7	47.8	48.9	50.0
Curative											
Maternal sepsis case management	22.4	23.2	23.9	24.7	25.4	26.2	27.0	27.7	28.5	29.2	30.0



Table A3: Achievable coverage projection scenario for maternal health
(50% coverage target), 2020-2030

INTERVENTION	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Periconceptual											
Contraceptive use	5.0	8.5	12.0	15.5	19.0	22.5	26.0	29.5	33.0	36.5	40.0
Post-abortion case management	22.4	25.2	27.9	30.7	33.4	36.2	39.0	41.7	44.5	47.2	50.0
Ectopic pregnancy case management	22.4	25.2	27.9	30.7	33.4	36.2	39.0	41.7	44.5	47.2	50.0
Pregnancy											
Micronutrient supplementation	22.4	25.2	27.9	30.7	33.4	36.2	39.0	41.7	44.5	47.2	50.0
TT - Tetanus toxoid vaccination	32.4	34.2	35.9	37.7	39.4	41.2	43.0	44.7	46.5	48.2	50.0
Preventive treatment of malaria	32.8	34.5	36.2	38.0	39.7	41.4	43.1	44.8	46.6	48.3	50.0
Syphilis detection and treatment	10.0	14.0	18.0	22.0	26.0	30.0	34.0	38.0	42.0	46.0	50.0
Calcium supplementation*	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0
Balanced energy supplementation*	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0
Hypertensive disorder case management	4.2	8.7	13.3	17.9	22.5	27.1	31.7	36.2	40.8	45.4	50.0
Diabetes case management	3.2	7.9	12.6	17.3	21.9	26.6	31.3	36.0	40.6	45.3	50.0
Malaria case management	13.4	17.1	20.7	24.4	28.0	31.7	35.4	39.0	42.7	46.3	50.0
Fetal growth restriction detection	22.4	25.2	27.9	30.7	33.4	36.2	39.0	41.7	44.5	47.2	50.0
Childbirth											
Clean birth environment	10.1	14.1	18.1	22.0	26.0	30.0	34.0	38.0	42.0	46.0	50.0
Manual removal of placenta	4.6	9.1	13.7	18.2	22.8	27.3	31.8	36.4	40.9	45.5	50.0
MgSO4 for eclampsia	22.4	25.2	27.9	30.7	33.4	36.2	39.0	41.7	44.5	47.2	50.0
Antibiotics for preterm or prolonged PROM	9.2	13.3	17.3	21.4	25.5	29.6	33.7	37.8	41.8	45.9	50.0
Parenteral administration of antibiotics	9.2	13.3	17.3	21.4	25.5	29.6	33.7	37.8	41.8	45.9	50.0
Assisted vaginal delivery	3.1	7.8	12.5	17.2	21.9	26.6	31.2	35.9	40.6	45.3	50.0
Parenteral administration of uterotonics	11.0	14.9	18.8	22.7	26.6	30.5	34.4	38.3	42.2	46.1	50.0
Removal of retained products of conception	4.1	8.7	13.3	17.8	22.4	27.0	31.6	36.2	40.8	45.4	50.0
Induction of labour for pregnancies lasting 41+w	22.4	25.2	27.9	30.7	33.4	36.2	39.0	41.7	44.5	47.2	50.0
Antenatal corticosteroids for preterm labour	22.4	25.2	27.9	30.7	33.4	36.2	39.0	41.7	44.5	47.2	50.0
Cesarean delivery	2.7	7.4	12.2	16.9	21.6	26.4	31.1	35.8	40.5	45.3	50.0
Blood transfusion	1.5	6.4	11.2	16.1	20.9	25.8	30.6	35.5	40.3	45.2	50.0
Preventive											
ITN/IRS - Households protected from malaria	38.9	40.0	41.1	42.2	43.3	44.4	45.6	46.7	47.8	48.9	50.0
Curative											
Maternal sepsis case management	22.4	25.2	27.9	30.7	33.4	36.2	39.0	41.7	44.5	47.2	50.0



Table A4: The path to reducing and ending preventable maternal deaths in South Sudan

HIGH IMPACT MATERNAL HEALTH INTERVENTIONS ALONG THE CONTINUUM OF MATERNAL CARE		
Ensuring that these priority/impact maternal health interventions are universally available for women in South Sudan.	<p>1. PERICONCEPTUAL</p> <ul style="list-style-type: none"> Contraceptive use Post-abortion case management Ectopic pregnancy case management <p>2. PREGNANCY</p> <ul style="list-style-type: none"> Micronutrient supplementation (Iron, Folic, others) TT - Tetanus toxoid vaccination IPTp - Intermittent preventive treatment of malaria Syphilis detection and treatment Calcium supplementation Balanced energy supplementation Hypertensive disorder case management Diabetes case management Malaria case management Fetal growth restriction detection and management <p>3. CHILDBIRTH</p> <ul style="list-style-type: none"> Clean birth environment Manual removal of placenta MgSO4 for eclampsia Antibiotics for preterm or prolonged PROM Parenteral administration of antibiotics Assisted vaginal delivery Parenteral administration of uterotonics Removal of retained products of conception Induction of labour for pregnancies lasting 41+ weeks Antenatal corticosteroids for preterm labour Cesarean delivery Blood transfusion <p>4. PREVENTIVE</p> <ul style="list-style-type: none"> ITN/IRS - Households protected from malaria <p>5. CURATIVE</p> <ul style="list-style-type: none"> Maternal sepsis case management 	
	At the appropriate time for women...	Spanning the continuum of care from periconceptual, pregnancy/antenatal, postpartum periods (i.e., the time around conception and after childbirth).
	Reduces and ends preventable maternal mortality caused by...	Haemorrhage (27%), indirect causes (25%), other direct causes (17%), hypertensive disorders (15%), embolism (8%), sepsis (5%), abortion (3%).
	Which results in...	Reducing and ending preventable maternal deaths in South Sudan.

Source: UNFPA (2020)²³

²³ United Nations Population Fund (2019). Costing the Three Transformative Results. New York, New York. Available at: www.unfpa.org



Table A5: Ambitious/universal coverage projection scenario for maternal health (100% coverage target), 2020-2030

INTERVENTION	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Periconceptual											
Contraceptive use	5.0	9.5	14.0	18.5	23.0	27.5	32.0	36.5	41.0	45.5	50.0
Post-abortion case management	22.4	30.2	37.9	45.7	53.4	61.2	69.0	76.7	84.5	92.2	100.0
Ectopic pregnancy case management	22.4	30.2	37.9	45.7	53.4	61.2	69.0	76.7	84.5	92.2	100.0
Pregnancy											
Micronutrient supplementation	22.4	30.2	37.9	45.7	53.4	61.2	69.0	76.7	84.5	92.2	100.0
TT - Tetanus toxoid vaccination	32.4	39.2	45.9	52.7	59.4	66.2	73.0	79.7	86.5	93.2	100.0
Preventive treatment of malaria	32.8	39.5	46.2	53.0	59.7	66.4	73.1	79.8	86.6	93.3	100.0
Syphilis detection and treatment	10.0	19.0	28.0	37.0	46.0	55.0	64.0	73.0	82.0	91.0	100.0
Calcium supplementation*	0.0	10.0	20.0	30.0	40.0	50.0	60.0	70.0	80.0	90.0	100.0
Balanced energy supplementation*	0.0	10.0	20.0	30.0	40.0	50.0	60.0	70.0	80.0	90.0	100.0
Hypertensive disorder case management	4.2	13.7	23.3	32.9	42.5	52.1	61.7	71.2	80.8	90.4	100.0
Diabetes case management	3.2	12.9	22.6	32.3	41.9	51.6	61.3	71.0	80.6	90.3	100.0
Malaria case management	13.4	22.1	30.7	39.4	48.0	56.7	65.4	74.0	82.7	91.3	100.0
Fetal growth restriction detection	22.4	30.2	37.9	45.7	53.4	61.2	69.0	76.7	84.5	92.2	100.0
Childbirth											
Clean birth environment	10.1	19.1	28.1	37.0	46.0	55.0	64.0	73.0	82.0	91.0	100.0
Manual removal of placenta	4.6	14.1	23.7	33.2	42.8	52.3	61.8	71.4	80.9	90.5	100.0
MgSO ₄ for eclampsia	22.4	30.2	37.9	45.7	53.4	61.2	69.0	76.7	84.5	92.2	100.0
Antibiotics for preterm or prolonged PROM	9.2	18.3	27.3	36.4	45.5	54.6	63.7	72.8	81.8	90.9	100.0
Parenteral administration of antibiotics	9.2	18.3	27.3	36.4	45.5	54.6	63.7	72.8	81.8	90.9	100.0
Assisted vaginal delivery	3.1	12.8	22.5	32.2	41.9	51.6	61.2	70.9	80.6	90.3	100.0
Parenteral administration of uterotonics	11.0	19.9	28.8	37.7	46.6	55.5	64.4	73.3	82.2	91.1	100.0
Removal of retained products of conception	4.1	13.7	23.3	32.8	42.4	52.0	61.6	71.2	80.8	90.4	100.0
Induction of labour for pregnancies lasting 41+w	22.4	30.2	37.9	45.7	53.4	61.2	69.0	76.7	84.5	92.2	100.0
Antenatal corticosteroids for preterm labour	22.4	30.2	37.9	45.7	53.4	61.2	69.0	76.7	84.5	92.2	100.0
Cesarean delivery	2.7	12.4	22.2	31.9	41.6	51.4	61.1	70.8	80.5	90.3	100.0
Blood transfusion	1.5	11.4	21.2	31.1	40.9	50.8	60.6	70.5	80.3	90.2	100.0
Preventive											
ITN/IRS - Households protected from malaria	38.9	45.0	51.1	57.2	63.3	69.4	75.6	81.7	87.8	93.9	100.0
Curative											
Maternal sepsis case management	22.4	30.2	37.9	45.7	53.4	61.2	69.0	76.7	84.5	92.2	100.0



Table A6: Costs of maternal health interventions: Status quo scenario, 2020-2030 (\$ million)

COST TYPE	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	TOTAL
Intervention Costs												
Drug and supply costs	1.24	1.28	1.32	1.37	1.42	1.47	1.52	1.58	1.64	1.70	1.78	16.31
Labour costs	.92	.96	1.02	1.08	1.15	1.22	1.30	1.38	1.46	1.56	1.66	13.70
Other recurrent costs	.31	.31	.32	.33	.34	.35	.36	.38	.39	.40	.41	3.92
Capital costs	1.02	1.04	1.06	1.09	1.13	1.16	1.20	1.23	1.27	1.31	1.35	12.86
Subtotal: Intervention Costs	3.48	3.60	3.73	3.87	4.03	4.20	4.38	4.56	4.76	4.97	5.21	46.79
Intervention Costs												
Programme-specific human resources	.03	.04	.04	.04	.04	.04	.04	.05	.05	.05	.05	.47
Training	.03	.04	.04	.04	.04	.04	.04	.05	.05	.05	.05	.47
Supervision	.07	.07	.07	.08	.08	.08	.09	.09	.10	.10	.10	.94
Monitoring and evaluation	.07	.07	.07	.08	.08	.08	.09	.09	.10	.10	.10	.94
Infrastructure	.07	.07	.07	.08	.08	.08	.09	.09	.10	.10	.10	.94
Transport	.07	.07	.07	.08	.08	.08	.09	.09	.10	.10	.10	.94
Communication, media, and outreach	.03	.04	.04	.04	.04	.04	.04	.05	.05	.05	.05	.47
Advocacy	.03	.04	.04	.04	.04	.04	.04	.05	.05	.05	.05	.47
General programme management	.07	.07	.07	.08	.08	.08	.09	.09	.10	.10	.10	.94
Community health worker training	.03	.04	.04	.04	.04	.04	.04	.05	.05	.05	.05	.47
Subtotal: Programme Costs	.52	.54	.56	.58	.61	.63	.66	.68	.71	.75	.78	7.02
Wastage costs	.06	.06	.07	.07	.07	.07	.08	.08	.08	.09	.09	.82
Logistics costs	.37	.38	.40	.41	.42	.44	.46	.47	.49	.51	.53	4.89
Infrastructure investment costs	1.74	1.80	1.86	1.94	2.02	2.10	2.19	2.28	2.38	2.48	2.60	23.39
Other health system costs	4.84	5.00	5.18	5.38	5.61	5.84	6.09	6.34	6.61	6.91	7.24	65.04
Subtotal	7.02	7.25	7.50	7.80	8.12	8.46	8.81	9.17	9.56	9.99	10.46	94.14
Total Costs of the Investment Case (IC)	11.02	11.38	11.79	12.25	12.76	13.29	13.84	14.42	15.03	15.70	16.45	147.95



Table A7: Costs of scaling up coverage of maternal health interventions:
Modest coverage scale-up scenario (30%), 2020-2030 (\$ million)

COST TYPE	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	TOTAL
Intervention Costs												
Drug and supply costs	1.25	1.66	2.09	2.56	3.05	3.58	4.13	4.72	5.35	6.03	6.76	41.16
Labour costs	.93	1.26	1.60	1.99	2.40	2.85	3.34	3.86	4.42	5.04	5.71	33.40
Other recurrent costs	.31	.34	.38	.42	.46	.51	.55	.60	.66	.72	.78	5.73
Capital costs	.98	1.09	1.20	1.33	1.47	1.61	1.76	1.92	2.09	2.27	2.48	18.20
Subtotal: Intervention Costs	3.47	4.34	5.28	6.29	7.38	8.55	9.78	11.10	12.52	14.05	15.72	98.49
Intervention Costs												
Programme-specific human resources	.03	.04	.05	.06	.07	.09	.10	.11	.13	.14	.16	.98
Training	.03	.04	.05	.06	.07	.09	.10	.11	.13	.14	.16	.98
Supervision	.07	.09	.11	.13	.15	.17	.20	.22	.25	.28	.31	1.97
Monitoring and evaluation	.07	.09	.11	.13	.15	.17	.20	.22	.25	.28	.31	1.97
Infrastructure	.07	.09	.11	.13	.15	.17	.20	.22	.25	.28	.31	1.97
Transport	.07	.09	.11	.13	.15	.17	.20	.22	.25	.28	.31	1.97
Communication, media, and outreach	.03	.04	.05	.06	.07	.09	.10	.11	.13	.14	.16	.98
Advocacy	.03	.04	.05	.06	.07	.09	.10	.11	.13	.14	.16	.98
General programme management	.07	.09	.11	.13	.15	.17	.20	.22	.25	.28	.31	1.97
Community health worker training	.03	.04	.05	.06	.07	.09	.10	.11	.13	.14	.16	.98
Subtotal: Programme Costs	.52	.65	.79	.94	1.11	1.28	1.47	1.67	1.88	2.11	2.36	14.77
Wastage costs	.06	.08	.10	.13	.15	.18	.21	.24	.27	.30	.34	2.06
Logistics costs	.37	.50	.63	.77	.92	1.07	1.24	1.42	1.60	1.81	2.03	12.35
Infrastructure investment costs	1.73	2.17	2.64	3.15	3.69	4.27	4.89	5.55	6.26	7.03	7.86	49.25
Other health system costs	4.82	6.04	7.34	8.75	10.26	11.88	13.60	15.43	17.40	19.53	21.86	136.90
Subtotal	6.99	8.79	10.71	12.79	15.02	17.40	19.94	22.64	25.53	28.66	32.08	200.56
Total Costs of the Investment Case (IC)	10.97	13.79	16.79	20.02	23.51	27.23	31.19	35.41	39.93	44.82	50.16	313.82



Table A8: Costs of scaling up coverage of maternal health interventions:
Achievable coverage scale-up scenario (50%), 2020-2030 (\$ million)

COST TYPE	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	TOTAL
Intervention Costs												
Drug and supply costs	1.25	1.91	2.60	3.30	4.03	4.79	5.56	6.35	7.17	8.08	9.06	54.09
Labour costs	.95	1.49	2.06	2.66	3.30	3.98	4.69	5.43	6.21	7.06	7.92	45.74
Other recurrent costs	.31	.36	.41	.47	.53	.59	.65	.71	.78	.85	.93	6.60
Capital costs	1.03	1.19	1.36	1.53	1.72	1.91	2.11	2.31	2.53	2.77	3.03	21.49
Subtotal: Intervention Costs	3.54	4.96	6.42	7.96	9.58	11.26	13.00	14.81	16.68	18.76	20.94	127.92
Intervention Costs												
Programme-specific human resources	.04	.05	.06	.08	.10	.11	.13	.15	.17	.19	.21	1.28
Training	.04	.05	.06	.08	.10	.11	.13	.15	.17	.19	.21	1.28
Supervision	.07	.10	.13	.16	.19	.23	.26	.30	.33	.38	.42	2.56
Monitoring and evaluation	.07	.10	.13	.16	.19	.23	.26	.30	.33	.38	.42	2.56
Infrastructure	.07	.10	.13	.16	.19	.23	.26	.30	.33	.38	.42	2.56
Transport	.07	.10	.13	.16	.19	.23	.26	.30	.33	.38	.42	2.56
Communication, media, and outreach	.04	.05	.06	.08	.10	.11	.13	.15	.17	.19	.21	1.28
Advocacy	.04	.05	.06	.08	.10	.11	.13	.15	.17	.19	.21	1.28
General programme management	.07	.10	.13	.16	.19	.23	.26	.30	.33	.38	.42	2.56
Community health worker training	.04	.05	.06	.08	.10	.11	.13	.15	.17	.19	.21	1.28
Subtotal: Programme Costs	.53	.74	.96	1.19	1.44	1.69	1.95	2.22	2.50	2.81	3.14	19.19
Wastage costs	.06	.10	.13	.17	.20	.24	.28	.32	.36	.40	.45	2.70
Logistics costs	.37	.57	.78	.99	1.21	1.44	1.67	1.91	2.15	2.42	2.72	16.23
Infrastructure investment costs	1.77	2.48	3.21	3.98	4.79	5.63	6.50	7.40	8.34	9.38	10.47	63.96
Other health system costs	4.92	6.89	8.93	11.07	13.32	15.65	18.07	20.58	23.19	26.08	29.11	177.81
Subtotal	7.13	10.04	13.05	16.21	19.52	22.96	26.52	30.21	34.04	38.28	42.75	260.70
Total Costs of the Investment Case (IC)	11.20	15.73	20.43	25.37	30.54	35.91	41.47	47.23	53.23	59.86	66.83	407.80



Table A9: Costs of scaling up coverage of maternal health interventions:
Ambitious/universal scale-up scenario (100%), 2020-2030 (\$ million)

COST TYPE	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	TOTAL
Intervention Costs												
Drug and supply costs	1.25	2.56	3.86	5.13	6.39	7.62	8.81	10.03	11.30	12.46	13.59	83.01
Labour costs	.96	2.03	3.12	4.25	5.41	6.60	7.79	9.01	10.18	11.19	12.12	72.65
Other recurrent costs	.31	.42	.53	.63	.74	.84	.93	1.03	1.13	1.22	1.30	9.08
Capital costs	1.03	1.38	1.72	2.06	2.39	2.72	3.04	3.36	3.70	3.99	4.27	29.65
Subtotal: Intervention Costs	3.54	6.38	9.22	12.07	14.94	17.78	20.57	23.44	26.31	28.86	31.27	194.39
Intervention Costs												
Programme-specific human resources	.04	.06	.09	.12	.15	.18	.21	.23	.26	.29	.31	1.94
Training	.04	.06	.09	.12	.15	.18	.21	.23	.26	.29	.31	1.94
Supervision	.07	.13	.18	.24	.30	.36	.41	.47	.53	.58	.63	3.89
Monitoring and evaluation	.07	.13	.18	.24	.30	.36	.41	.47	.53	.58	.63	3.89
Infrastructure	.07	.13	.18	.24	.30	.36	.41	.47	.53	.58	.63	3.89
Transport	.07	.13	.18	.24	.30	.36	.41	.47	.53	.58	.63	3.89
Communication, media, and outreach	.04	.06	.09	.12	.15	.18	.21	.23	.26	.29	.31	1.94
Advocacy	.04	.06	.09	.12	.15	.18	.21	.23	.26	.29	.31	1.94
General programme management	.07	.13	.18	.24	.30	.36	.41	.47	.53	.58	.63	3.89
Community health worker training	.04	.06	.09	.12	.15	.18	.21	.23	.26	.29	.31	1.94
Subtotal: Programme Costs	.53	.96	1.38	1.81	2.24	2.67	3.09	3.52	3.95	4.33	4.69	29.16
Wastage costs	.06	.13	.19	.26	.32	.38	.44	.50	.57	.62	.68	4.15
Logistics costs	.37	.77	1.16	1.54	1.92	2.29	2.64	3.01	3.39	3.74	4.08	24.90
Infrastructure investment costs	1.77	3.19	4.61	6.04	7.47	8.89	10.29	11.72	13.16	14.43	15.64	97.20
Other health system costs	4.92	8.87	12.82	16.78	20.76	24.71	28.60	32.58	36.58	40.11	43.47	270.21
Subtotal	7.13	12.96	18.78	24.62	30.47	36.27	41.97	47.81	53.69	58.90	63.86	396.46
Total Costs of the Investment Case (IC)	11.20	20.30	29.38	38.50	47.65	56.72	65.63	74.77	83.95	92.09	99.82	620.02



Table A10: Costs of intervention for 30% modern contraceptive prevalence rate (\$)

DRUG AND SUPPLY COSTS	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Pill - Standard daily regimen	0	57,523	126,984	206,708	295,447	392,107	496,027	606,876	724,591	849,309	981,215
Condom - Male	0	79,968	161,075	244,331	330,053	418,161	508,803	602,268	698,943	799,281	903,667
Injectable - 3 month (Depo Provera)	0	29,931	58,229	85,714	112,780	139,589	166,339	193,237	220,493	248,309	276,848
IUD - Copper-T 380-A IUD (10 years)	0	1,964	3,275	4,644	6,066	7,532	9,052	10,637	12,298	14,045	15,882
Implant - Jadelle (5 years)	0	15,462	22,202	29,364	36,717	44,126	51,674	59,429	67,450	75,792	84,466
Female sterilization	0	7,538	11,248	14,940	18,616	22,255	25,933	29,709	33,636	37,757	42,079
Labour costs											
Pill - Standard daily regimen	0	26,686	43,122	62,929	86,075	112,547	142,420	175,851	213,071	254,378	300,104
Condom - Male	0	36,694	50,309	65,074	81,109	98,478	117,287	137,673	159,803	183,871	210,073
Injectable - 3 month (Depo Provera)	0	56,972	75,012	93,635	113,083	133,485	155,006	177,831	202,169	228,245	256,274
IUD - Copper-T 380-A IUD (10 years)	0	8,879	11,635	14,667	17,983	21,581	25,501	29,788	34,487	39,651	45,319
Implant - Jadelle (5 years)	0	18,209	21,172	24,456	27,995	31,752	35,771	40,095	44,766	49,829	55,314
Other-recurrent costs											
Pill - Standard daily regimen	0	3,826	8,447	13,750	19,653	26,082	32,995	40,369	48,199	56,495	65,269
Condom - Male	0	4,162	8,383	12,717	17,178	21,764	26,482	31,346	36,378	41,600	47,033
Injectable - 3 month (Depo Provera)	0	7,161	13,930	20,506	26,981	33,394	39,794	46,229	52,749	59,404	66,231
IUD - Copper-T 380-A IUD (10 years)	0	1,093	1,822	2,584	3,375	4,191	5,037	5,919	6,843	7,815	8,837
Implant - Jadelle (5 years)	0	1,483	2,129	2,816	3,521	4,231	4,955	5,698	6,467	7,267	8,099
Female sterilization	0	897	1,339	1,778	2,216	2,649	3,086	3,536	4,003	4,494	5,008





◀ Table A10 (cont'd)

Capital costs											
Pill - Standard daily regimen	0	13,070	28,852	46,966	67,128	89,089	112,700	137,886	164,632	192,968	222,938
Condom - Male	0	14,216	28,635	43,436	58,676	74,339	90,453	107,069	124,255	142,093	160,650
Injectable - 3 month (Depo Provera)	0	24,458	47,581	70,041	92,158	114,065	135,923	157,903	180,175	202,905	226,225
IUD - Copper-T 380-A IUD (10 years)	0	3,496	5,829	8,265	10,797	13,405	16,111	18,933	21,890	24,999	28,268
Implant - Jadelle (5 years)	0	4,742	6,810	9,006	11,262	13,534	15,849	18,227	20,688	23,246	25,907
Female sterilization	0	2,735	4,081	5,420	6,754	8,074	9,408	10,778	12,203	13,698	15,266
Total intervention costs											
Pill - Standard daily regimen	0	87,381	193,681	316,629	454,579	606,102	770,418	947,258	1,136,769	1,339,426	1,555,802
Condom - Male	0	111,023	224,386	341,541	462,999	588,725	719,008	854,339	995,363	1,142,829	1,297,406
Injectable - 3 month (Depo Provera)	0	79,458	155,687	230,830	305,937	381,468	457,997	536,135	616,521	699,798	786,513
IUD - Copper-T 380-A IUD (10 years)	0	10,318	17,446	25,046	33,107	41,595	50,587	60,162	70,404	81,397	93,192
Implant - Jadelle (5 years)	0	27,410	39,827	53,155	67,009	81,157	95,764	110,964	126,885	143,648	161,300
Female sterilization	0	21,380	32,589	44,080	55,869	67,906	80,429	93,646	107,745	122,903	139,198



Table A11: Costs of intervention for 40% modern contraceptive prevalence rate (\$)

DRUG AND SUPPLY COSTS	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Pill - Standard daily regimen	0	73,849	165,365	271,899	391,546	522,687	664,311	815,880	977,235	1,148,511	981,215
Injectable - 3 month (Depo Provera)	0	43,550	84,315	123,614	162,109	200,101	237,902	275,819	314,156	353,204	276,848
IUD - Copper-T 380-A IUD (10 years)	0	2,875	4,682	6,568	8,529	10,552	12,652	14,843	17,139	19,554	1,930
Implant - Jadelle (5 years)	0	25,370	34,740	44,738	55,032	65,421	76,002	86,861	98,077	109,728	-3,535
Female sterilization	0	11,453	16,664	21,825	26,956	32,034	37,160	42,416	47,873	53,593	257,488
Labour costs											
Pill - Standard daily regimen	0	30,245	51,747	78,032	109,029	144,703	185,146	230,561	281,254	337,629	300,104
Condom - Male	0	41,586	60,371	80,692	102,738	126,615	152,473	180,505	210,941	244,047	210,073
Injectable - 3 month (Depo Provera)	0	64,569	90,015	116,107	143,239	171,624	201,507	233,156	266,864	302,944	256,274
IUD - Copper-T 380-A IUD (10 years)	0	11,089	14,853	18,993	23,528	28,455	33,828	39,708	46,158	53,249	12,313
Implant - Jadelle (5 years)	0	23,273	27,329	31,844	36,725	41,915	47,468	53,440	59,891	66,881	17,502
Female sterilization	0	31,469	39,408	47,741	56,510	65,700	75,477	86,000	97,426	109,912	461,210
Other-recurrent costs											
Pill - Standard daily regimen	0	4,912	11,000	18,086	26,045	34,768	44,189	54,271	65,004	76,397	65,269
Condom - Male	0	5,869	11,788	17,842	24,062	30,450	37,017	43,785	50,783	58,041	47,033
Injectable - 3 month (Depo Provera)	0	10,419	20,171	29,573	38,782	47,871	56,914	65,985	75,157	84,498	66,231
IUD - Copper-T 380-A IUD (10 years)	0	1,600	2,605	3,654	4,746	5,871	7,040	8,259	9,537	10,880	1,074
Implant - Jadelle (5 years)	0	2,433	3,331	4,290	5,277	6,273	7,287	8,329	9,404	10,521	-339
Female sterilization	0	1,363	1,983	2,597	3,208	3,813	4,423	5,048	5,698	6,378	30,645





◀ Table A11 (cont'd)

Capital costs											
Pill - Standard daily regimen	0	16,779	37,572	61,777	88,962	118,758	150,936	185,373	222,034	260,949	222,938
Condom - Male	0	20,045	40,263	60,941	82,189	104,007	126,439	149,557	173,457	198,251	160,650
Injectable - 3 month (Depo Provera)	0	35,586	68,898	101,011	132,467	163,512	194,401	225,385	256,711	288,620	226,225
IUD - Copper-T 380-A IUD (10 years)	0	5,118	8,333	11,690	15,180	18,782	22,519	26,419	30,505	34,804	3,436
Implant - Jadelle (5 years)	0	7,781	10,655	13,721	16,879	20,065	23,311	26,641	30,081	33,655	-1,084
Female sterilization	0	4,155	6,046	7,918	9,779	11,622	13,481	15,388	17,368	19,443	93,416
Total intervention costs											
Pill - Standard daily regimen	0	112,061	251,960	416,071	601,857	807,192	1,030,858	1,272,361	1,531,804	1,809,763	1,555,802
Condom - Male	0	156,239	314,883	478,254	647,292	822,103	1,003,139	1,191,098	1,386,871	1,591,496	1,297,406
Injectable - 3 month (Depo Provera)	0	115,058	224,334	331,240	437,532	544,043	651,659	761,280	873,822	990,201	786,513
IUD - Copper-T 380-A IUD (10 years)	0	15,046	24,837	35,269	46,346	58,024	70,404	83,593	97,703	112,851	13,117
Implant - Jadelle (5 years)	0	44,777	61,974	80,512	99,831	119,593	139,988	161,190	183,372	206,703	-1,537
Female sterilization	0	32,318	47,979	63,959	80,332	97,047	114,419	132,730	152,244	173,205	826,636



Table A12: Costs of intervention for 50% modern contraceptive prevalence rate (\$)

DRUG AND SUPPLY COSTS	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Pill - Standard daily regimen	0	90,175	203,746	337,090	487,644	653,266	832,595	1,024,883	1,229,879	1,447,713	981,215
Condom - Male	0	145,544	291,883	441,263	594,584	751,934	913,651	1,080,266	1,252,471	1,431,064	903,666
Injectable - 3 month (Depo Provera)	0	57,168	110,402	161,515	211,438	260,614	309,465	358,401	407,819	458,100	276,848
IUD - Copper-T 380-A IUD (10 years)	0	3,848	6,151	8,553	11,053	13,634	16,314	19,111	22,041	25,124	57,093
Implant - Jadelle (5 years)	0	36,282	48,281	61,115	74,349	87,719	101,334	115,295	129,708	144,667	330,273
Female sterilization	0	15,701	22,413	29,042	35,628	42,146	48,720	55,455	62,443	69,761	256,241
Labour costs											
Pill - Standard daily regimen	0	33,803	60,371	93,135	131,982	176,859	227,872	285,270	349,437	420,880	300,104
Condom - Male	0	46,479	70,433	96,310	124,368	154,752	187,659	223,336	262,078	304,223	210,073
Injectable - 3 month (Depo Provera)	0	72,165	105,017	138,579	173,394	209,763	248,009	288,481	331,558	377,642	256,274
IUD - Copper-T 380-A IUD (10 years)	0	13,300	18,071	23,320	29,072	35,328	42,155	49,628	57,829	66,847	146,171
Implant - Jadelle (5 years)	0	28,338	33,486	39,232	45,454	52,077	59,165	66,786	75,016	83,932	170,849
Female sterilization	0	38,591	48,758	59,404	70,602	82,337	94,817	108,242	122,814	138,733	461,210
Other-recurrent costs											
Pill - Standard daily regimen	0	5,998	13,553	22,423	32,437	43,454	55,383	68,174	81,810	96,300	65,269
Condom - Male	0	7,575	15,192	22,966	30,946	39,136	47,553	56,225	65,187	74,483	47,033
Injectable - 3 month (Depo Provera)	0	13,676	26,412	38,640	50,583	62,348	74,035	85,742	97,564	109,593	66,231
IUD - Copper-T 380-A IUD (10 years)	0	2,141	3,422	4,759	6,150	7,587	9,078	10,634	12,264	13,980	31,768
Implant - Jadelle (5 years)	0	3,479	4,629	5,860	7,129	8,411	9,716	11,055	12,437	13,871	31,668
Female sterilization	0	1,869	2,667	3,456	4,240	5,016	5,798	6,600	7,432	8,303	30,497





◀ Table A12 (cont'd)

Capital costs											
Pill - Standard daily regimen	0	20,488	46,292	76,589	110,796	148,426	189,171	232,860	279,436	328,930	222,938
Condom - Male	0	25,874	51,890	78,446	105,703	133,676	162,425	192,045	222,659	254,409	160,650
Injectable - 3 month (Depo Provera)	0	46,714	90,214	131,981	172,776	212,960	252,878	292,866	333,248	374,334	226,225
IUD - Copper-T 380-A IUD (10 years)	0	6,849	10,948	15,224	19,673	24,267	29,038	34,015	39,231	44,718	101,618
Implant - Jadelle (5 years)	0	11,128	14,808	18,744	22,804	26,904	31,080	35,362	39,783	44,371	101,298
Female sterilization	0	5,696	8,131	10,536	12,926	15,290	17,675	20,119	22,654	25,309	92,963
Total intervention											
Pill - Standard daily regimen	0	136,740	310,239	515,513	749,135	1,008,282	1,291,297	1,597,463	1,926,838	2,280,099	1,555,802
Condom - Male	0	201,455	405,380	614,968	831,584	1,055,481	1,287,271	1,527,856	1,778,378	2,040,162	1,297,406
Injectable - 3 month (Depo Provera)	0	150,658	292,980	431,649	569,127	706,618	845,321	986,425	1,131,123	1,280,604	786,513
IUD - Copper-T 380-A IUD (10 years)	0	20,090	32,544	45,809	59,901	74,769	90,537	107,339	125,317	144,621	330,602
Implant - Jadelle (5 years)	0	63,886	85,864	109,611	134,395	159,771	185,954	213,158	241,603	271,501	618,749
Female sterilization	0	44,167	64,280	84,749	105,706	127,099	149,320	172,725	197,653	224,417	823,221



Table A13: Costs of intervention for status quo (5%) modern contraceptive prevalence rate (\$)

DRUG AND SUPPLY COSTS	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Pill - Standard daily regimen	0	1,605	3,415.09	5,351.95	7,331.22	9,284.22	11,210.87	13,131.56	15,072.48	17,059.29	19,106.46
Condom - Male	0	4,102	8,729.30	13,680.11	18,739.30	23,731.37	28,656.07	33,565.55	38,526.74	43,605.21	48,837.97
Injectable - 3 month (Depo Provera)	0	1,785	3,798.25	5,952.42	8,153.74	10,325.86	12,468.67	14,604.86	16,763.54	18,973.26	21,250.11
IUD - Copper-T 380-A IUD (10 years)	0	31.38	77.16	120.16	158.47	191.86	224.76	258.88	295.0471	333.70	374.36
Implant - Jadelle (5 years)	0	541	1,293.40	2,016.49	2,678.45	3,271.42	3,855.95	4,456.56	5,086.62	5,753.78	6,452.74
Female sterilization	0	68.77	201.88	312.31	395.0	453.0906	510.20	574.13	647.7995	731.90	823.07
Labour costs											
Pill - Standard daily regimen	0	14,499	15,355	16,280.14	17,257.58	18,273.51	19,329.15	20,431.12	21,588.29	22,810.35	24,104.73
Condom - Male	0	25,373	26,871	28,490.25	30,200.77	31,978.64	33,826.01	35,754.45	37,779.51	39,918.10	42,183.29
Injectable - 3 month (Depo Provera)	0	41,272	43,709	46,341.49	49,123.78	52,015.62	55,020.50	58,157.26	61,451.17	64,929.75	68,614.23
IUD - Copper-T 380-A IUD (10 years)	0	2,388	2,548.97	2,711.90	2,873.04	3,031.37	3,195.72	3,370.01	3,556.70	3,757.55	3,972.30
Implant - Jadelle (5 years)	0	7,742	8,250.02	8,771.04	9,293.32	9,812.65	10,351.85	10,921.71	11,529.55	12,180.92	12,876.05
Female sterilization	0	3,694	3,987.43	4,263.20	4,512.87	4,737.82	4,970.93	5,224.57	5,504.77	5,814.60	6,150.41
Other-recurrent costs											
Pill - Standard daily regimen	0	106.76	227.16	356	487.66	617.57	745.73	873.4944	1,002.60	1,134.76	1,270.94
Condom - Male	0	213.52	454.33	712	975.32	1,235.15	1,491.46	1,746.99	2,005.20	2,269.52	2,541.87
Injectable - 3 month (Depo Provera)	0	427.04	908.66	1,424.02	1,950.65	2,470.30	2,982.93	3,493.98	4,010.41	4,539.05	5,083.75
IUD - Copper-T 380-A IUD (10 years)	0	17.46	42.93559	66.86123	88.17533	106.75	125.0653	144.04	164.1728	185.67	208.30
Implant - Jadelle (5 years)	0	51.89	124.01	193.34	256.82	313.6771	369.72	427.31	487.72	551.69	618.71
Female sterilization	0	8.18	24.02754	37.17032	47.01499	53.92532	60.72202	68.33143	77.09892	87.10843	97.95935





Table A13 (cont'd)

Capital costs											
Pill - Standard daily regimen	0	364.66	775.93	1,216.00	1,665.70	2,109.43	2,547.18	2,983.58	3,424.57	3,875.98	4,341.11
Condom - Male	0	729.33	1,551.86	2,432.00	3,331.40	4,218.87	5,094.36	5,967.15	6,849.13	7,751.96	8,682.22
Injectable - 3 month (Depo Provera)	0	1,458	3,103.72	4,863.99	6,662.80	8,437.74	10,188.73	11,934.30	13,698.27	15,503.93	17,364.45
IUD - Copper-T 380-A IUD (10 years)	0	55.86	137.34	213.87	282.05	341.48	400.05	460.77	525.15	593.94	666.32
Implant - Jadelle (5 years)	0	165.99	396.69	618.47	821.507	1,003.38	1,182.66	1,366.87	1,560.12	1,764.74	1,979.12
Female sterilization	0	24.94	73.24283	113.30	143.31	164.37	185.09	208.29	235.01	265.53	298.60
Total intervention costs											
Pill - Standard daily regimen	0	2,851	6,049.65	9,480.15	13,018.21	16,560.79	20,108.99	23,695.81	27,364.00	31,156.44	35,099.30
Condom - Male	0	6,402	13,590	21,297.47	29,229.89	37,147.12	45,051.01	53,017.25	61,143.69	69,527.91	78,228.45
Injectable - 3 month (Depo Provera)	0	5,877	12,454	19,516.66	26,825.70	34,184.25	41,595.57	49,125.14	56,858.12	64,880.72	73,247.27
IUD - Copper-T 380-A IUD (10 years)	0	232.40	545.82	852.21	1,141.15	1,410.88	1,685.02	1,973.13	2,280.49	2,610.28	2,960.72
Implant - Jadelle (5 years)	0	1,173	2,735.74	4,270.98	5,721.71	7,072.74	8,431.80	9,844.07	11,335.63	12,922.75	14,598.23
Female sterilization	0	299.46	789.17	1,228.58	1,600.82	1,911.80	2,229.53	2,577.91	2,967.28	3,401.73	3,872.64



Table A14: Summary of incremental costs for scaling up modern contraceptive prevalence rate (scenarios: 30%, 40%, 50%) (\$)

STATUS QUO	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	TOTAL COSTS
Drug and supply costs	8,133.98	17,515.08	27,433.45	37,456.20	47,257.82	56,926.52	66,591.54	76,392.23	86,457.14	96,844.71	521,008.69
Labour costs	94,970.42	100,723.02	106,858.03	113,261.35	119,849.60	126,694.15	133,859.12	141,410.00	149,411.27	157,901.02	1,244,937
Other-recurrent costs	824.88	1,781.15	2,789.42	3,805.65	4,797.38	5,775.64	6,754.15	7,747.21	8,767.82	9,821.54	52,864.83
Capital costs	2,799.47	6,038.80	9,457.65	12,906.77	16,275.29	19,598.09	22,920.97	26,292.25	29,756.09	33,331.83	179,377.21
Total intervention costs	106,728	126,058.05	146,538.54	167,429.98	188,180.08	208,994.40	230,125.79	251,841	274,392.32	297,899.09	1,998,188
Scenario 1 (30%)											
Drug and supply costs	192,386.4	383,012.43	585,700.57	799,680.50	1,023,769	1,257,827	1,502,157	1,757,412	2,024,493	2,304,156	11,830,595
Labour costs	147,440.8	201,250.31	260,759.93	326,246.19	397,843.49	475,985.15	561,237.60	654,296.96	755,974.92	867,083.34	4,648,118
Other-recurrent costs	18,621.76	36,050.21	54,149.84	72,923.50	92,311.39	112,348.53	133,096.85	154,639	177,075.28	200,478.07	1,051,695
Capital costs	62,717.66	121,787.11	183,134.01	246,773.40	312,506.13	380,445.29	450,797.10	523,842	599,909.72	679,255.00	3,561,167
Total intervention costs	421,166.7	742,100.06	1,083,744	1,445,623	1,826,430	2,226,606	2,647,288	3,090,191	3,557,452	4,050,973	21,091,577
Scenario 2 (40%)											
Drug and supply costs	269,853	532,245.14	811,440.35	1,106,489	1,415,842	1,739,254	2,077,085	2,430,187	2,799,762	2,417,612	15,599,773
Labour costs	202,231	283,722.11	373,408.36	471,768.41	579,011.20	695,899.88	823,369.48	962,533	1,114,662	1,257,475	6,764,081
Other-recurrent costs	26,595.12	50,877.94	76,042.25	102,119.95	129,046.38	156,870.73	185,677.88	215,582	246,717	210,592	1,400,121
Capital costs	89,464.86	171,766.42	257,058.40	345,456.29	436,745.99	531,087.32	628,763.23	730,157	835,721	707,749	4,733,971
Total intervention costs	588,144.59	1,038,611.61	1,517,949.36	2,025,834.57	2,560,646.13	3,123,112.19	3,714,896	4,338,460	4,996,863	4,593,429	28,497,947
Scenario 3 (50%)											
Drug and supply costs	348,717.0	682,875.11	1,038,577	1,414,696	1,809,312	2,222,077	2,653,410	3,104,359	3,576,429	2,805,335	19,655,791
Labour costs	232,675.7	336,135.77	449,979.17	574,871.45	711,115.28	859,676.59	1,021,743	1,198,730	1,392,258	1,544,680	8,321,867
Other-recurrent costs	34,738.56	65,875.75	98,104.74	131,486.48	165,951.45	201,562.99	238,428.95	276,694.45	316,529.42	272,466.46	1,801,839
Capital costs	116,750.1	222,283.84	331,520.91	444,677.28	561,523.92	682,267.42	807,267.33	937,010.92	1,072,071	905,693.43	6,081,066
Total intervention costs	732,881.5	1,307,170	1,918,182.	2,565,731	3,247,903	3,965,584	4,720,85	5,516,795	6,357,288	5,528,175	35,860,564



Table A15: Annual costs of child marriage intervention (\$)

TYPE OF INTERVENTION	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Education										
Rural School Supply	396,005	862,270	1,433,167	2,078,997	2,788,039	3,549,027	4,354,672	5,198,382	6,075,164	6,981,168
Improve School Infrastructure	198,002	431,135	716,584	1,039,499	1,394,020	1,774,514	2,177,336	2,599,191	3,037,582	3,490,584
Pedagogical Changes	396,005	862,270	1,433,167	2,078,997	2,788,039	3,549,027	4,354,672	5,198,382	6,075,164	6,981,168
Cash Transfers to Poor Students	396,005	862,270	1,433,167	2,078,997	2,788,039	3,549,027	4,354,672	5,198,382	6,075,164	6,981,168
Malaria Prevention	39,600	86,227	143,317	207,900	278,804	354,903	435,467	519,838	607,516	698,117
Total Education Intervention Costs	1,425,617	3,104,174	5,159,401	7,484,390	10,000,000	12,800,000	15,700,000	18,700,000	21,900,000	25,100,000
Community Intervention	599,901	1,308,497	2,179,672	3,167,304	4,253,135	5,419,288	6,654,629	7,949,156	9,295,733	10,700,000
Conditional Economic Incentives	2,756,014	6,011,384	10,000,000	14,600,000	19,500,000	24,900,000	30,600,000	36,500,000	42,700,000	49,100,000
Life Skills	4,315,076	9,411,993	15,700,000	22,800,000	30,600,000	39,000,000	47,900,000	57,200,000	66,900,000	76,900,000
Total Community Intervention Costs	7,670,991	16,700,000	27,900,000	40,500,000	54,400,000	69,300,000	85,100,000	102,000,000	119,000,000	137,000,000
Total Costs (education + community)	9,096,608	19,800,000	33,000,000	48,000,000	64,400,000	82,100,000	101,000,000	120,000,000	141,000,000	162,000,000
Cost per Child Marriage Averted	323	382	462	553	665	810	1,026	1,429	2,733	7,112,478

Table A16: Annual GBV intervention costs (\$)

INTERVENTION	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Community mobilization	-	181,073	369,669	567,548	774,935	991,166	1,213,245	1,443,432	1,681,833	1,928,760	2,184,538
Outreach to male youth	-	68,139	139,027	213,246	290,657	370,658	452,593	536,763	623,131	711,923	803,388
Economic empowerment	-	822,704	1,678,203	2,573,398	3,506,528	4,470,379	5,459,017	6,474,476	7,516,042	8,586,256	9,688,230
Outreach to female sex workers	-	826	1,693	2,611	3,581	4,601	5,664	6,776	7,941	9,159	10,433
Mass media	-	32,231	66,105	101,962	139,871	179,740	221,283	264,799	310,345	358,016	407,909
Counseling	-	89,763	184,064	283,842	389,284	500,131	615,642	736,599	863,151	995,556	1,134,083
Treatment	-	12,276	25,064	38,477	52,535	67,188	82,404	98,197	114,577	131,587	149,271
NGO strengthening	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Programme support	15,000	196,052	384,574	582,162	788,609	1,002,580	1,222,477	1,449,156	1,682,553	1,923,188	2,171,678
Total	115,000	1,503,063	2,948,399	4,463,246	6,045,999	7,686,443	9,372,325	11,110,198	12,899,574	14,744,445	16,649,530

Table A17: Modern contraceptive prevalence rate scenarios

mCPR TARGET SCENARIOS	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Status quo	5	5	5	5	5	5	5	5	5	5	5
Scenario 1 (30%)	5	7.5	10	12.5	15	17.5	20	22.5	25	27.5	30
Scenario 1 (40%)	5	8.5	12	15.5	19	22.5	26	29.5	33	36.5	40
Scenario 1 (50%)	5	9.5	14	18.5	23	27.5	32	36.5	41	45.5	50



Table A18: Maternal lives saved by scaling up of coverage of maternal health interventions, 2020-2030

MATERNAL HEALTH INTERVENTION	2030 MATERNAL LIVES SAVED		
	MODEST COVERAGE SCALE-UP (30%)	ACHIEVABLE COVERAGE SCALE-UP (50%)	AMBITIOUS COVERAGE SCALE-UP (100%)
Periconceptual			
Contraceptive use	292	371	366
Post abortion case management	15	37	83
Ectopic pregnancy case management	2	9	22
Pregnancy			
Micronutrient supplementation	111	372	921
TT - Tetanus toxoid vaccination	5	5	15
Intermittent preventive treatment of malaria	73	66	230
Syphilis detection and treatment	0	0	0
Calcium supplementation	149	224	379
Balanced energy supplementation	0	0	0
Hypertensive disorder case management	328	523	931
Diabetes case management	0	0	0
Malaria case management	30	55	121
Fetal growth restriction detection and management	0	0	0
Childbirth			
Clean birth environment	97	161	259
Manual removal of placenta	220	315	413
MgSO4 for eclampsia	114	321	551
Antibiotics for preterm or prolonged PROM	45	73	117
Parenteral administration of antibiotics	137	222	354
Assisted vaginal delivery	298	471	860
Parenteral administration of uterotonics	457	750	1,076
Removal of retained products of conception	225	316	416
Induction of labour for pregnancies lasting 41+w	0	0	0
Antenatal corticosteroids for preterm labour	0	0	0
Cesarean delivery	313	437	588
Blood transfusion	531	730	974
Preventive			
ITN/IRS - Households protected from malaria	0	0	0
Curative			
Maternal sepsis case management	46	112	126
Total maternal lives saved	3,488	5,570	8,802



Table A19: Projection of method mix for modern contraception (%), 2020-2030

METHOD MIX	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Male condom	10	11	12	13	14	15	16	17	18	19	20
Female sterilization	2.5	3.1	3.7	4.3	4.9	5.5	6.1	6.7	7.3	7.9	8.5
3-month injectable	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15
Implant											
Implanon (3 years)	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10
Jadelle (5 years)	5	5.25	5.5	5.75	6	6.25	6.5	6.75	7	7.25	7.5
IUD											
Copper-T 380-A IUD (10 year)	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7
LNG-IUS (5 years)	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7
Pill - Standard Daily regimen	5	7	9	11	13	15	17	19	21	23	25
Traditional											
Withdrawal	7.5	6.75	6	5.25	4.5	3.75	3	2.25	1.5	0.75	0
Periodic abstinence	36	32.4	28.8	25.2	21.6	18	14.4	10.8	7.2	3.6	0
Traditional (not specified)	15	13.5	12	10.5	9	7.5	6	4.5	3	1.5	0
Total	100										

Table A20: 17 GBV Intervention coverage rates (%), 2020-2030

INTERVENTION	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Community mobilization	0	5	10	15	20	25	30	35	40	45	50
Outreach to male youth	0	5	10	15	20	25	30	35	40	45	50
Economic empowerment	0	5	10	15	20	25	30	35	40	45	50
Outreach to female sex workers	0	5	10	15	20	25	30	35	40	45	50
Mass media	0	5	10	15	20	25	30	35	40	45	50
Counselling	0	5	10	15	20	25	30	35	40	45	50
Treatment	0	5	10	15	20	25	30	35	40	45	50



Box 1. GBV intervention support

1	Provision of survivor-centred psychosocial support focused on healing, empowerment and recovery
2	Provision of appropriate GBV case management services including coordinated care and support
3	Establish and/or strengthen GBV referral systems and linking GBV survivors to available response services and support
4	Implement Women and Girls Friendly Space (WGFS) programming to provide services, information and activities that promote healing, well-being and empowerment
5	Integration of GBV risk mitigation and survivor support across the different humanitarian response clusters / sectors
6	Provision of legal services that protect the rights of GBV survivors and promote their access to justice
7	Provision of livelihood and economic support including through Cash and Voucher Assistance (CVA) to vulnerable women and girls and GBV survivors as part of a multisectoral GBV response
8	Engage men and boys for accountable practices to transform harmful social norms that perpetuate gender inequality, and to promote the health and safety of women and girls
9	Establish and / strengthen support to safe house to provide immediate security, temporary refuge, and support to GBV survivors who are escaping violent or abusive situations
10	Provide capacity building trainings on various topics of GBV to frontline service providers
11	Implement community engagement and awareness raising activities on GBV risk factors, mitigation measures and on how survivors can access support and services in line with the “do no harm” principle
12	Strengthen GBV coordination at the field level to address GBV through a coherent, comprehensive and coordinated approach



APPENDIX B: METHODOLOGY

Developing the Investment Case (IC)

The development of the investment case for the three transformative results in South Sudan was carried out through an extensive consultative and active engagement process with inputs from a core National Reference Group (NRG) and guidance from representatives of the United Nations Population Fund (UNFPA) in South Sudan and the UNFPA's Eastern and Southern Africa Regional Office (ESARO). Desk reviews provided input data from relevant documents, including laws, policy documents, strategic plans such as the Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCAH) 2018-2022, the costed Boma Health Initiative, Health Management Information System (HMIS) reports, and research sources as well as national and international commitments.

The Spectrum - The Lives Saved Tool (LiST)

The Spectrum policy software (version 6.06) which houses several other modular tools was used to analyze the transformative results on maternal mortality. The Spectrum policy software suite was developed by the Institute for International Programs (now Avenir Health) at Johns Hopkins Bloomberg School of Public Health and funded by the Bill & Melinda Gates Foundation to support decision-making in the health sector (Spectrum Suite, 2014; Stover and Winfrey, 2010). The Spectrum programme consists of several modules which interact with one another to address a variety of issues in demography and population health. The demographic projection module (DemProj) forms the basis for any projection in Spectrum and requires inputs on various determinants of demographic data including population age distribution, fertility rates, mortality rates, international migration, among other parameters.

Modelling of alternative projection scenarios for ending maternal mortality was undertaken using the LiST. The LiST preloads national-level data for maternal health status, mortality rates, and coverage of maternal interventions and their effectiveness to estimate the impact as well as cost of scaling up maternal, newborn, and child health, and nutrition (MNCH&N) interventions in low-and-middle-income countries.



In LiST, adequate modelling of the coverage of maternal interventions required the following configuration:

- Baseline assessment of demographic information, maternal mortality rate and causes of maternal deaths among other maternal health indicators.
- Review of the baseline coverage of maternal interventions defaults in LiST.
- Interpolation of the coverage of alternative projection scenarios of coverage targets from the baseline in 2020 to the end-line in 2030.

To model the impact and cost of family planning interventions, the FamPlan module in Spectrum was used. However, while the FamPlan module allows for baseline and targets to be set for all family planning related interventions, cost related to these interventions can only be extracted from the LiST tool. This is because, in modelling maternal mortality, contraceptive use and family planning are considered as part of the interventions. Similarly, the impact of the family planning interventions was extracted from the online version (Impact40) of the tool. The FamPlan module allows one to identify the preferred family planning intervention mix appropriate for the country context. The module also requires inputs on total fertility, and contraceptive prevalence, as well as the proximate determinants of fertility including the proportion of women of reproductive age married or in a sexual union, duration of postpartum insusceptibility and abortion rates (Stover and Winfrey, 2010).

Priority impact maternal health interventions

Twenty-seven impact maternal interventions have been scientifically proven to reduce and end preventable deaths globally and they are the target of this investment case in South Sudan (see Table A4 in the Appendix A for the detailed list of interventions). Scale-up of the coverage of these high impact maternal health interventions will enable women of child bearing age to have access to a basic package of health services for the prevention and treatment of complications during pregnancy and childbirth to reduce preventable maternal mortality and morbidity.

Baseline data and analysis

Pre-loaded baseline data from the FamPlan and LiST modules in Spectrum were used. The Spectrum tool extracts country-specific baseline data from various national surveys that collect information on the respective variables. In cases where national level datasets were available, these were compared with baseline data from the tool, and where variations were found, the most recent data were used.



Costing in Lives Saved Tool (LiST)

Delivery channels

LiST Costing includes default distributions of interventions by delivery channels (i.e., community, outreach, clinic, and hospital-level care). These defaults are based on expert consultation by WHO experts.

Staff baseline assumptions

The “Staff baseline data” tab in LiST Costing is pre-populated with assumptions for salaries (i.e., annual salary for a full-time person), benefits (i.e., calculated as percentage of salary costs), and time utilization (i.e., days per year and time worked per day) drawn from WHO CHOICE. These data points are used to estimate a cost per minute, which is combined with information from Treatment Inputs editors to estimate the labour costs for delivering the various interventions. Default data can only be revised if more accurate country-level data are available.

Target population and population in need

LiST Costing uses the number of people receiving the intervention and the quantity of resources required to deliver the intervention per person to determine the cost of the intervention. To estimate the number of people receiving the intervention, LiST Costing uses the target population, population in need, and coverage for each intervention.

The target population is the population that could possibly receive the intervention; these are age-determined groups that are drawn from the DemProj module within Spectrum. Global defaults exist for each maternal health intervention included in LiST. The population in need is the share of the target population that requires the intervention, per year. For most preventive care interventions, the share is 100 per cent.

Intervention costs

Treatment inputs for each intervention specify the required drugs and consumable supplies (e.g., gloves, syringes), provider time, and number of inpatient days and outpatient visits needed for the effective provision of an intervention. The determinants of intervention costs are the number of people receiving the intervention and the quantity of resources in terms of drugs and supplies (required drugs and consumables), labour, capital, and other recurrent costs required to deliver the intervention per person. These are drawn from intervention assumptions developed for the OneHealth Tool (<http://www.who.int/choice/onehealthtool/en/>) and documented in the Intervention Assumptions Manual. These inputs were developed based on WHO norms and guidelines where available, with expert input where explicit guidance was not available. Drugs and consumable supply prices are extracted from international sources such as the MSH Drug Price Indicator Guide, UNICEF supply catalog, and the Global Price Reporting Mechanism.



Other recurrent and capital costs

The default costs for other recurrent are drawn from costs per outpatient visit and inpatient day (OPVs/IPDs) which have been calculated by the WHO at the country level and are available from the WHO-CHOICE website.

These costs are then multiplied by the number of OPVs/IPDs associated with each service to give a total cost for other recurrent and capital costs.

Programme costs

Programme costs capture service delivery costs associated with the delivery of the maternal health package of services found in LiST. These costs are computed as percentages of direct costs. Default programme cost categories and percentages have been provided, based on SUN nutrition plan costing exercises, the EPIC immunization studies, and National AIDS Spending Assessments (see detailed in table B1 below). Users are encouraged to adapt these cost categories unless if recent country-specific data are available.

Table B1: Programme costs

PROGRAMME COST CATEGORY	%	DESCRIPTION
Programme-specific human resources	1%	Per cent of total intervention costs
Training	1%	Per cent of total intervention costs
Supervision	2%	Per cent of total intervention costs
Monitoring and evaluation	2%	Per cent of total intervention costs
Infrastructure	2%	Per cent of total intervention costs
Transport	2%	Per cent of total intervention costs
Communication, media, and outreach	1%	Per cent of total intervention costs
Advocacy	1%	Per cent of total intervention costs
General programme management	2%	Per cent of total intervention costs
Community health worker training	1%	Per cent of total intervention costs

Logistics and wastage costs

As country-specific data are not available, default rates for logistics and wastage in LiST Costing which is applied to the total cost of drugs and supplies used in costed interventions.

Infrastructure investment costs

To account for the cost of infrastructure investments needed to support service expansion, LiST Costing uses default ratios which vary by country income level and build on previous efforts to estimate the cost and impact of packages of health services, which rely on a WHO model to estimate programme area and health system requirements and costs (Stenberg, *et al.*, 2014). The default ratios in LiST are from secondary analysis of the outputs of the WHO model reported in the 2014 RMNCH investment case to estimate these costs based on percentage of the intervention costs (Stenberg, *et al.*, 2014).



Other health system costs

Meeting the transformative result will require additional investments for health systems strengthening to bring health systems to at least a minimum degree of functionality in terms of availability of hospital beds and health workers. LiST Costing includes ratios of other health system costs to the commodity, labour and service delivery cost associated with the interventions. These ratios vary by country income level and build on previous efforts to estimate the cost and impact of packages of health services, which rely on a WHO model to estimate programme area and health system requirements and costs (Stenberg, *et al.*, 2014). The default ratios in LiST are from secondary analysis of the outputs of the WHO model reported in the 2014 RMNCH investment case to estimate these costs based on percentage over and above the intervention costs (Stenberg, *et al.*, 2014).

Table B2: Costs of logistics, wastage, and other health system costs

PROGRAMME COST CATEGORY	%	DESCRIPTION
Wastage costs	5%	Per cent of total Drug and Supply costs
Logistics costs	30%	Per cent of total Drug and Supply costs
Infrastructure investment costs	50%	Per cent of total intervention costs
Other health system costs	139%	Per cent of total intervention costs

Limitations

The development of this investment case was limited by several factors. First, was the absence of updated baseline data. Ideally, the investment cases should have used more recent baseline data on coverage of interventions and prevalence of key indicators. National surveys such as the DHS and MICS are reliable sources of such information. Unfortunately, South Sudan has not conducted these national surveys in the past decade. Also, other sources of routine data tracking progress do not include most of the interventions. As indicated in the various sections, a number of strategies were used to populate the data including using baseline data from shadow countries and regional averages, where necessary. Secondly, the COVID-19 outbreak limited face-to-face meetings and possible field visits to collect relevant data. All meetings were conducted online to reduce risks related to the spread of the virus.

Moreover, the tools used in this investment case have several drawbacks. One such drawback is that the tools do not have a capability of producing comprehensive health system costs. For example, family planning costs do not include health system costs. Similarly, the biggest cost of averting child marriage and gender-based violence in South Sudan is under "service delivery" (including provision of shelter, rescue operations, and legal fees). The present analytical tools do not capture the costs for all these factors. These drawbacks call for an improvement in the country's data quality, timeliness, and availability, as well as improvement in the analytical tools.

