

Health and Economic Benefits of Achieving UNFPA's Transformative Results in Pacific Small Islands Developing States

Photo: Carly Learson/ UNFPA Kiribati



An Investment Case in five countries: Kiribati, Samoa, Solomon Islands, Tonga and Vanuatu

May 2021

This investment case for Pacific Small Islands Developing States (SIDS) aims to inform actions to increase domestic financing for sexual reproductive health (SRH) services and accelerate the achievement of UNFPA's transformative results of ending preventable maternal mortality and unmet need for family planning. This investment case provides evidence to governments on how to prioritise interventions in the wake of the COVID-19 pandemic, or in the context of disrupted health systems due to the adverse effects of climate change or natural disasters, with the aim to ensure the inclusion of family planning and maternal health services in essential health benefits packages and universal health coverage.

Across the Pacific SIDS, the high demand for modern contraceptive options has yet to be satisfied, and equitable access to maternal health interventions should be strengthened. To improve access to SRH services, this investment case focuses on scaling-up maternal health interventions to reach national targets, and empowering women by reducing the high levels of unmet need for family planning through increased investment in the provision of high-quality rights-based contraceptive services.

In the five countries in the Pacific considered in this study (Kiribati, Samoa, Solomon Islands, Tonga and Vanuatu), reaching zero unmet need for family planning and 95% maternal health intervention coverage by 2030 could prevent an additional 126,000 unintended pregnancies,

2,200 stillbirths, and 121 maternal deaths over the 2020 to 2030 period, compared with business as usual. This would require a total investment of US\$83.8 [US\$81.3 - US\$86.4] million, representing an additional investment of US\$13.4 [US\$10.9 - US\$16.0]¹ million - only 19% more than the currently estimated spending. This required additional investment is affordable and may well be within reach.

It is estimated that this investment would lead to an eleven-fold return in economic benefits by 2040 for the five selected countries in the Pacific, meaning that each US\$1 invested could yield US\$11 in returns. These economic benefits are due to the reduction of unintended pregnancies and improved maternal outcomes. Providing women and adolescents with access to contraceptive services will reduce unintended teenage pregnancies and ensure that girls can continue their education, develop their professional skills, and increase their participation in the economy and society.

This study considers scaling up family planning and maternal health interventions simultaneously rather than separately, hence ensuring the efficiencies and cost-savings that stem from a more integrated approach. Increased contraceptive prevalence rates will reduce unintended pregnancies, which will in turn result in reduced maternal deaths, stillbirths, and newborn deaths. Increasing access to family planning services and averting unwanted and unintended pregnancies can also reduce maternal health services costs.

METHODOLOGY

In this investment case, two scenarios of progress between 2020 and 2030 were compared: the *“Business as Usual”* scenario, and the *“Coverage Targets Achieved”* scenario. For the Business as Usual projections, data on coverage of key interventions for maternal health and family planning for 2019 was based on most recent estimates from major population surveys (e.g., Demographic Health Survey (DHS), Multi-Indicator Cluster Survey (MICS)²), which were projected to remain constant until 2030.

For the Coverage Targets Achieved scenario, instead, the 2019 baseline coverage data was projected to increase to “full coverage” by 2030 (achieving zero unmet need for family planning and 95% coverage of maternal health interventions).

In both scenarios, the impact of the COVID-19 pandemic on coverage of interventions and access to SRH services was also taken into account, as we know that reductions in access to family planning and maternal health services in 2020 and 2021 may have been caused by factors affecting both the supply and demand side of health service provision due to COVID-19.

Considering that the impact of COVID-19 disruptions will be felt long beyond the immediate years of the pandemic, **this study has modelled a reduction in intervention coverage levels for 2020 and 2021, according to country-specific COVID-19 disruption estimates** (Table 1). Coverage levels were then returned to 2019 levels in 2022, and either maintained constant to 2030 (Business as Usual scenario), or scaled up to full coverage (Coverage Targets Achieved scenario).

The projections of the two scenarios, including the impact of COVID-19, were modelled for each country using the Lives Saved Tool (LiST) version 5.88, a modelling tool developed by Avenir Health³. Through LiST, the health gains, financial needs, benefits, and benefit-cost ratios of investing in a range of family planning and maternal health interventions were estimated.

The economic benefits were calculated up to 2040 (with a lower bound for 2030 and an upper bound for 2050 used to generate uncertainty bounds) because, while each intervention will only directly impact those women who receive it during the 2020-2030 period, in many cases the benefits will be incurred well into the future.

Table 1. Estimated Disruptions of COVID-19 in 5 Pacific Countries in 2020 and 2021

	Maternal health intervention coverage reduction (health facility delivery)			Family planning intervention coverage reduction (short-acting contraceptive methods)		
	Lower bound	Estimate	Upper bound	Lower bound	Estimate	Upper bound
Kiribati	20%	35%	50%	20%	35%	50%
Samoa	5%	10%	20%	10%	20%	35%
Solomon Islands	5%	10%	20%	10%	20%	35%
Tonga	10%	10%	10%	10%	20%	30%
Vanuatu	20%	35%	50%	20%	35%	70%

RESULTS - Cumulative for all countries

For the five countries in the Pacific considered in this analysis, meeting the coverage targets by 2030 could avert an additional 126,000 unintended pregnancies (38%), 2,200 stillbirths (28%), and 121 (29%) maternal deaths over the 2020 to 2030 period, compared with the Business as Usual scenario (Figure 1).

In terms of financial resources, it was estimated that US\$6.7 million was spent on family planning and maternal health interventions in 2019 across the five countries. This amount, however, still leaves a high proportion of women in each country with an unmet need for modern family planning methods by the year 2030 (ranging from 18% unmet need in Kiribati to 35% in Samoa).

To achieve 95% coverage of maternal health services and zero unmet need for family planning by 2030, the annual investment requirements would increase over time, and by the year 2030 the annual resources needed to achieve coverage targets would be 36% greater than business as usual in that year (Figure 2).

Between 2020 and 2030 this would require a total investment of US\$83.8 [US\$81.3 - US\$86.4] million, an additional investment of US\$13.4 [US\$10.9 - US\$16.0] million (19% more) beyond maintaining business as usual. This additional investment could bring an eleven-fold economic benefit of US\$149.7 [US\$54.5 - US\$214.7] million from the prevention of maternal and newborn deaths, stillbirths, and unintended pregnancies (Figure 3).

Figure 1. Annual unintended pregnancies (left), and total stillbirths and maternal deaths (right) that could be averted from 2020 to 2030 for aggregated values for Kiribati, Samoa, Solomon Islands, Tonga and Vanuatu.

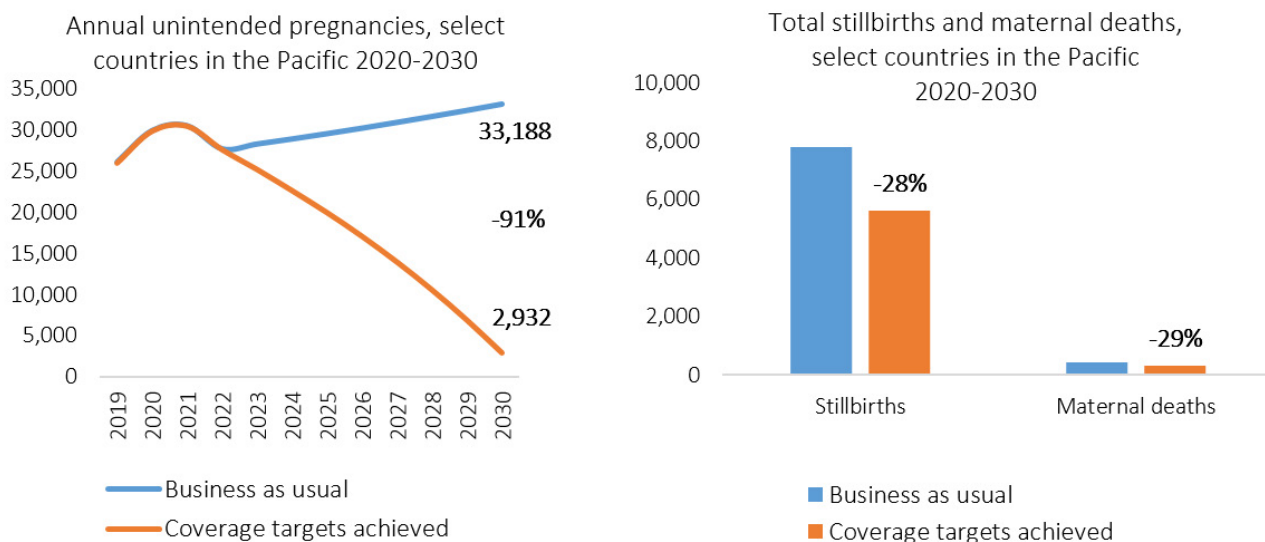


Figure 2. Aggregated annual maternal health and family planning resources for Kiribati, Samoa, Solomon Islands, Tonga and Vanuatu in the business as usual scenario (left bars) and coverage targets achieved (right bars) scenarios, 2020-2030 (in US dollars). In the business as usual scenario (intervention coverages maintained) annual costs increase slightly due to population growth.

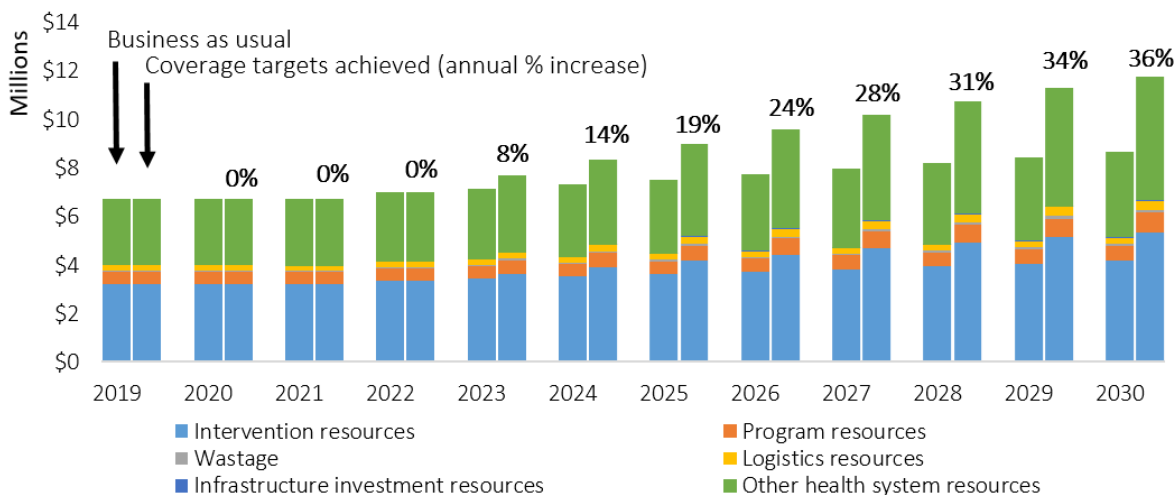
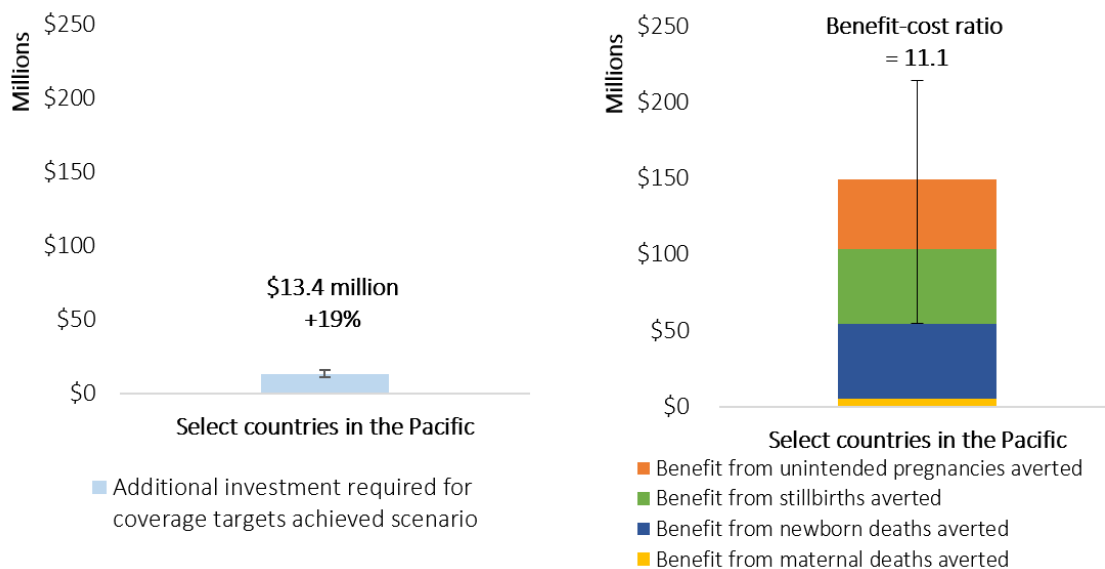


Figure 3. Estimated additional resources required (2020-2030) to reach 95% coverage of maternal health interventions and 0% unmet need by 2030, compared with business as usual (left); and the corresponding return on investment that is estimated by 2040 from the prevention of maternal and newborn deaths, stillbirths, and unintended pregnancies (right), range bar represents the benefits calculated to 2030 (lower bound) and 2050 (upper bound), aggregated for Kiribati, Samoa, Solomon Islands, Tonga and Vanuatu (in US dollars).



Gains in Sexual and Reproductive Health – breakdown by country

In the graphs on the next page, a visualisation of the health gains expected in each of the countries is presented, looking in particular at maternal deaths averted, maternal mortality reduction, reduction in stillbirths and unintended pregnancies averted – compared to the Business as Usual scenario. Due to small population size and a low number of births per year (see Table 2 for a demographic summary of the countries), the projected maternal mortality ratios should be interpreted with caution⁴.

Major differences in the impacts, incremental investments requirements, benefits and benefit-cost ratios of achieving the coverage targets exist between countries, due to differences in baseline mortality rates, stillbirth rates, unmet need for family planning and intervention coverage, and different (unvalidated) estimates for costs, differences in per capita gross domestic product (GDP), and work participation rates among women (used to derive economic benefits), as well as the ratio of estimated healthcare worker costs to per capita GDP.

Despite such differences, this analysis shows that all five countries in the Pacific could achieve the SDG 3 target 3.7 for universal access to sexual and reproductive health services, including family planning, and experience an expected two-thirds reduction in maternal deaths from 2010 levels by 2030.

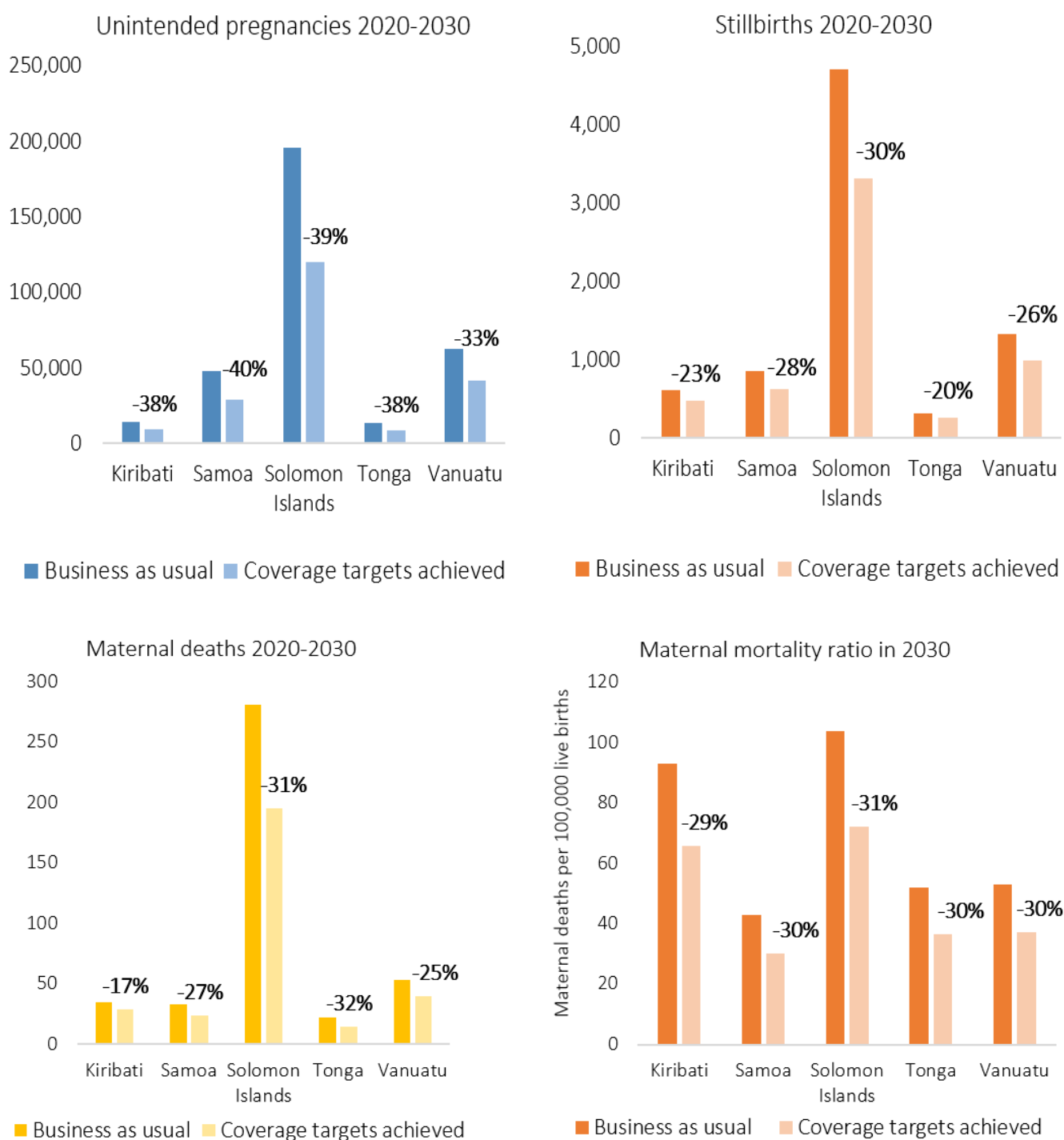
The global SDG 3 target 3.1 of achieving a maternal mortality ratio (MMR) of under 70 maternal deaths per 100,000 live births by 2030 is already being met by Samoa, Tonga and Vanuatu, but by ensuring coverage targets are met by 2030, these countries could additionally achieve their country-specific SDG target for maternal mortality (two-thirds reduction in MMR compared with 2010 levels). If coverage targets are reached, Kiribati is also expected to meet these SDG targets by 2030. While Solomon Islands is not projected to reach the SDG 3 target 3.1 even in the coverage targets are achieved (due to a high estimated MMR in 2019), scale-up of the interventions modelled could result in a 29 percent reduction in the projected 2030 maternal mortality ratio in the Solomon Islands (Figure 4).



Table 2. Population breakdown in 5 Pacific Countries, 2019

	Kiribati	Samoa	Solomon Islands	Tonga	Vanuatu
Population size	119,000	201,000	656,000	109,000	299,000
Women of reproductive age	30,000	46,000	156,000	27,000	75,000
Births	3,200	6,000	21,000	3,000	7,500

Figure 4. Projected unintended pregnancies (top left), stillbirths (top right), and maternal deaths (bottom left) between 2020 and 2030, and projected maternal mortality ratio in 2030 (bottom right) for the business as usual and coverage targets achieved scenarios showing percentages that could be averted. Note that the impact on maternal mortality ratio is shown solely for the year 2030, whereas other indicators are cumulative over the period from 2020 to 2030. Due to small population size and a low number of births per year, the maternal mortality ratio should be interpreted with caution.



CONCLUSION

This study aims to tackle two of the most pressing national priorities for health and women's economic empowerment and the realization of their human and reproductive rights: reducing the high levels of unmet need for family planning by increasing investments in the provision of high quality, rights-based contraceptive services, and ensuring access to appropriate maternal health services. **All five Pacific countries could achieve the SDG 3 target 3.7 for universal access to sexual and reproductive health services by 2030 through affordable investments.** This supports the prioritisation of these services and their inclusion in essential health benefits packages through national health insurance schemes, and an increase in domestic funding allocation for family planning supplies, informing a sustainable financing transition from externally financed programs.

In the five countries considered in this study, reaching zero unmet need for family planning and 95% maternal health intervention coverage by 2030 could prevent an additional 126,000 unintended pregnancies, 2,200 stillbirths, and 121 maternal deaths over the 2020 to 2030 period, compared with business as usual. The additional US\$13.4 [US\$10.9 - US\$16.0] million needed to reach coverage targets represents only 19% more than business as usual for the five countries in the Pacific, representing an additional US\$6.5 per capita.

This analysis has shown that not only this required investment may well be within reach, but it is also estimated to lead to an eleven-fold return in economic benefit by 2040.

However, achieving these coverage targets will also be dependent on other factors that support the increase in coverage of interventions. Implementers and health program managers need to ensure that services are accessible, that skilled nurses, midwives, and healthcare providers are available, and that the services provided are locally accepted and of high quality. The importance of these factors cannot be understated, and further work is needed to understand the full financial requirements beyond the direct intervention and health system costs considered in this study.

While the direct effects of the COVID-19 epidemic in the five SIDS have been small and largely contained by policy responses, coverage of services could have been affected by supply-side factors (e.g., health workers being redeployed to support the COVID-19 response, or shortages of commodities due to disruptions in supply chain), as well as by demand-side factors (e.g. patients' fear of infection in healthcare settings, reduced spending power and restrictions of movements impacting access to services), and may have longer-term impacts. If this is the case and disruptions continue beyond 2021, then the scenarios and assumptions considered in this analysis may be worse than estimated.

References and Notes

1. For this analysis, costs were considered between 2020 and 2030. Costs were derived from LiST (for commodities and human resource need) and inflated to account for the additional financing needs of health service expansion. Costs were not validated through consultation with national teams. For the countries considered in this analysis, it is likely that additional funding would be required for health systems to be able to absorb services and investments (e.g., for capacity building). Therefore, a lower and upper bound for the additional investment requirements was estimated. Further work is needed to understand the full financial requirements beyond the direct intervention and health system costs considered in this study.
2. Demographic and Health Surveys available for Pacific countries can be accessed at: <https://dhsprogram.com/> while UNICEF's MICS Surveys can be accessed at: <https://mics.unicef.org/surveys>
3. LiST - Lives Saved Tool. Developed by Avenir Health, accessible online at: <https://list.spectrumweb.org/> or for download: <https://avenirhealth.org/software-spectrum.php>
4. The maternal mortality ratio is calculated as "maternal deaths per 100,000 live births", meaning that in settings with a low number of births, a singular maternal death may have a substantial effect.

This analysis was developed by UNFPA in partnership with the Burnet Institute, Australia, as part of a research portfolio managed by UNFPA Asia-Pacific Regional Office and UNFPA Pacific Sub-regional office. UNFPA would like to thank Dr. Nick Scott and Dr. Sherrie Kelly for leading this work, together with their research team at the Burnet Institute - Tom Walsh, Dominic Delpont, Dr. Debra ten Brink and Dr. Rowan Martin-Hughes. For more information, please contact apro@unfpa.org.

ANNEX 1 - Individual country graphs

1. KIRIBATI

For Kiribati, the 2018-19 Social Development Indicator Survey (SDIS) provided valuable demographic and epidemiological information to inform this study, suggesting that Kiribati has an estimated 25% contraceptive prevalence rate (modern and traditional methods), 17% unmet need for family planning, and a total fertility rate of 3.3. In addition, the maternal mortality ratio for 2019 was estimated to be 92 per 100,000 live births. In 2019, Kiribati had a population size of 119,000, including 30,000 women of reproductive age, and there were an estimated 3,200 births, 86% of which occurred in health facilities.

For the Business as Usual scenario, estimated 2019 coverage levels were maintained until 2030 (incorporating any reductions in 2020 and 2021 due to COVID-19). For the Coverage Targets Achieved scenario, coverage levels were modelled to enable Kiribati to achieve 95% coverage of maternal health interventions and 0% unmet need for family planning by 2030. The graphs below illustrate the results for maternal mortality ratio decrease, unmet need for family planning decrease, and estimated financial resources to achieve coverage targets by 2030.

Figure 1. Impact of achieving coverage targets (95% coverage of maternal health interventions and 0% unmet need for family planning) on the maternal mortality ratio (left), and unmet need for family planning (right).

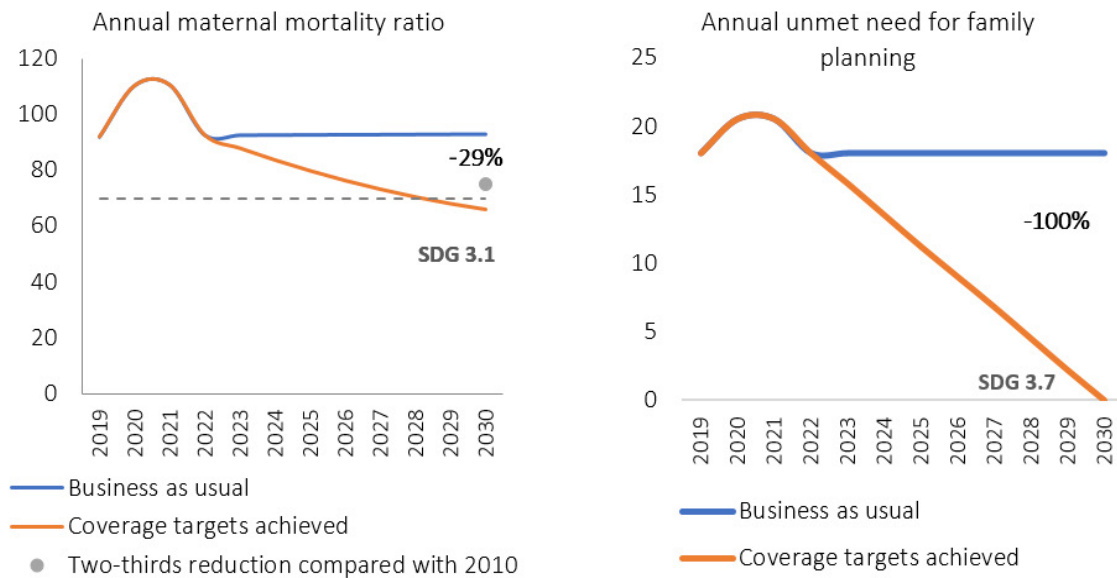
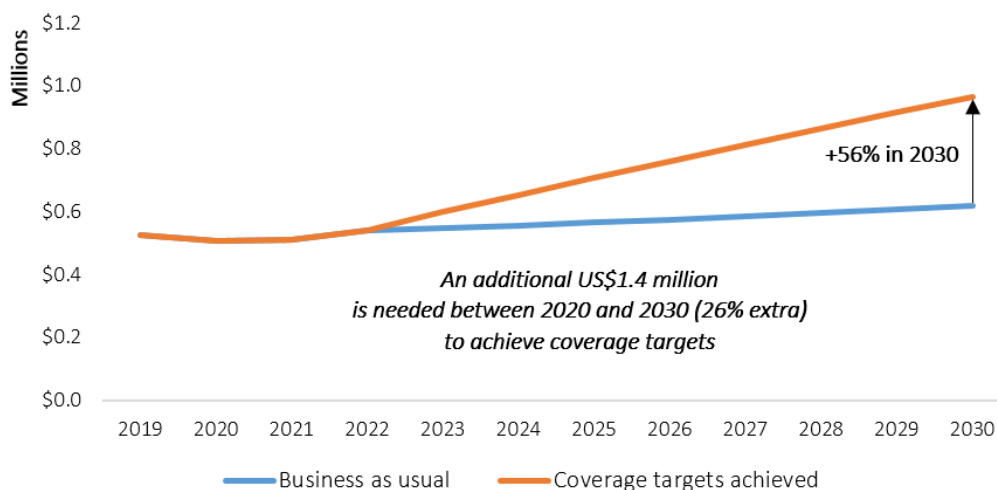


Figure 2. Estimated resource needs to achieve coverage targets for family planning and maternal health interventions by 2030 compared with business as usual, 2020–2030. Graph shows undiscounted annual spending for visual ease, while the US\$1.4 million is the additional discounted total (at a discounting rate of 3%) (in US dollars). In the business as usual scenario (intervention coverages maintained), annual costs increase slightly due to population growth.



2. SAMOA

For Samoa, the 2019–2020 Multi-Indicator Cluster Survey (MICS) was used to obtain valuable demographic and epidemiological information to inform this study. The MICS reported that Samoa has an estimated 17% contraceptive prevalence rate (for both modern and traditional methods), 35% unmet need for family planning, and a total fertility rate of 3.9. In addition, the maternal mortality ratio for 2019 was estimated to be 43 deaths per 100,00 live births for 2019, already having surpassed the SDG 3 target 3.1 of reducing maternal deaths to less than 70 per 100,000 live births. In 2019, Samoa had a population size of 201,000, including 46,000 women of reproductive age, and there were an estimated 6,000 births, 89% of which occurred in health facilities.

For the Business as Usual scenario, estimated 2019 coverage levels were maintained until 2030 (incorporating any reductions in 2020 and 2021 due to COVID-19). For the Coverage Targets Achieved scenario, coverage levels were modelled to enable Samoa to achieve 95% coverage of maternal health interventions and 0% unmet need for family planning by 2030. The graphs below illustrate the results for maternal mortality ratio decrease, unmet need for family planning decrease, and estimated financial resources to achieve coverage targets by 2030.

Figure 1. Impact of achieving coverage targets (95% coverage of maternal health interventions and 0% unmet need for family planning) on the maternal mortality ratio (left), and unmet need for family planning (right).

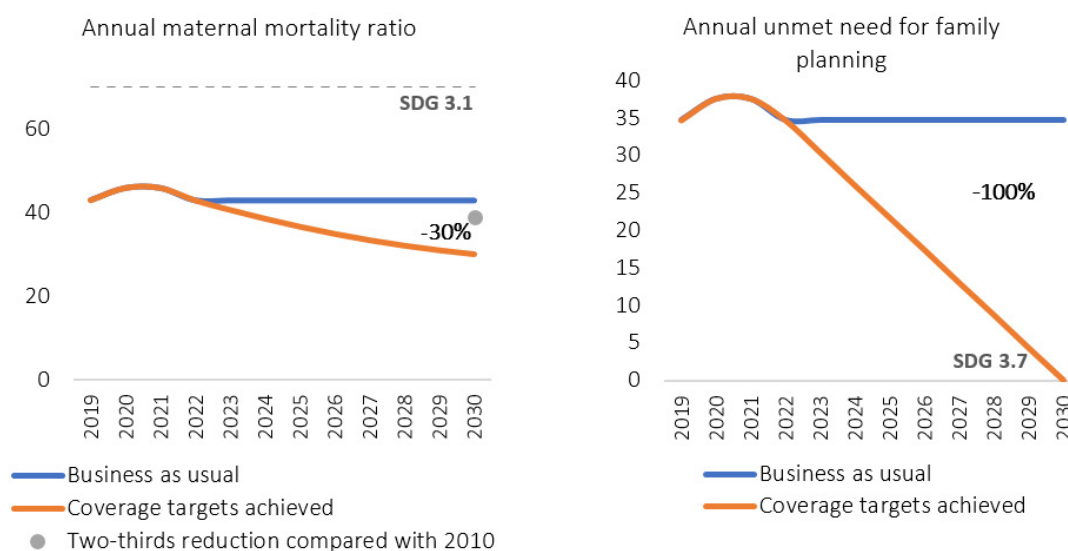
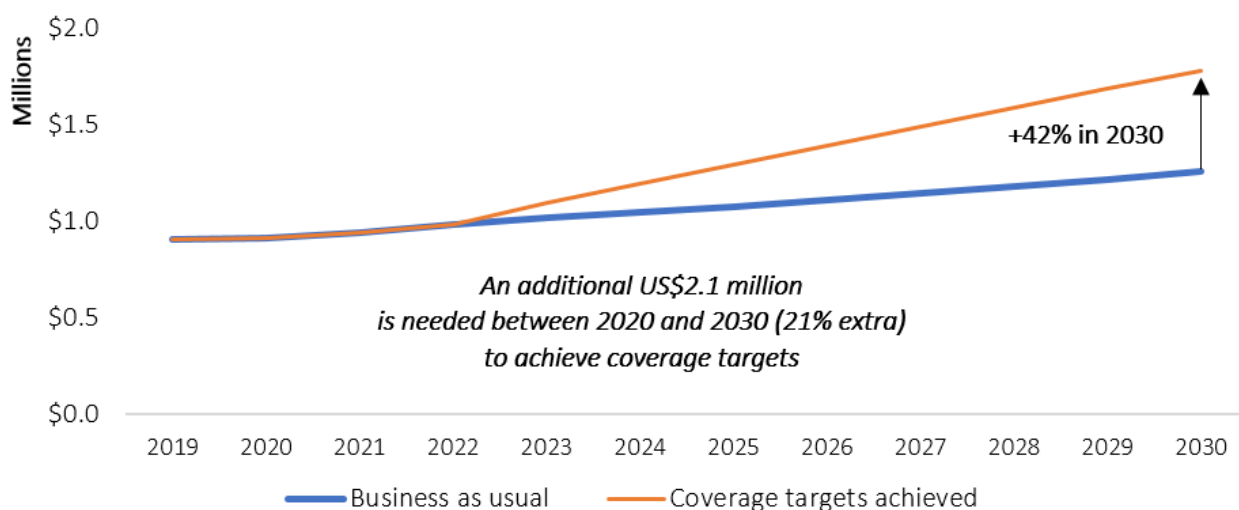


Figure 2. Estimated resource needs to achieve coverage targets for family planning and maternal health interventions by 2030 compared with business as usual, 2020–2030. Graph shows undiscounted annual spending for visual ease, while the US\$2.1 million is the additional discounted total (at a discounting rate of 3%) (in US dollars). In the business as usual scenario (intervention coverages maintained), annual costs increase slightly due to population growth.



3. SOLOMON ISLANDS

For Solomon Islands, the 2015 Demographic Health Survey (DHS) was used to collect the demographic and epidemiological information which informed this study. The 2015 DHS reported that the country had an estimated 29% contraceptive prevalence rate (modern and traditional methods), 35% unmet need for family planning, and a total fertility rate of 4.4 births per woman in 2015. In addition, the maternal mortality ratio (MMR) for 2019 was estimated to be 104 deaths per 100,00 live births in 2019. In 2019, Solomon Islands had a population size of 656,000, including 156,000 women of reproductive age, and there were an estimated 21,000 births, 85% of which occurred in health facilities.

For the Business as Usual scenario, estimated 2019 coverage levels were maintained until 2030 (incorporating any reductions in 2020 and 2021 due to COVID-19). For the Coverage Targets Achieved scenario, coverage levels were modelled to enable Solomon Islands to achieve 95% coverage of maternal health interventions and 0% unmet need for family planning by 2030. The graphs below illustrate the results for maternal mortality ratio decrease, unmet need for family planning decrease, and estimated financial resources to achieve coverage targets by 2030.

Figure 1. Impact of achieving coverage targets (95% coverage of maternal health interventions and 0% unmet need for family planning) on the maternal mortality ratio (left), and unmet need for family planning (right).

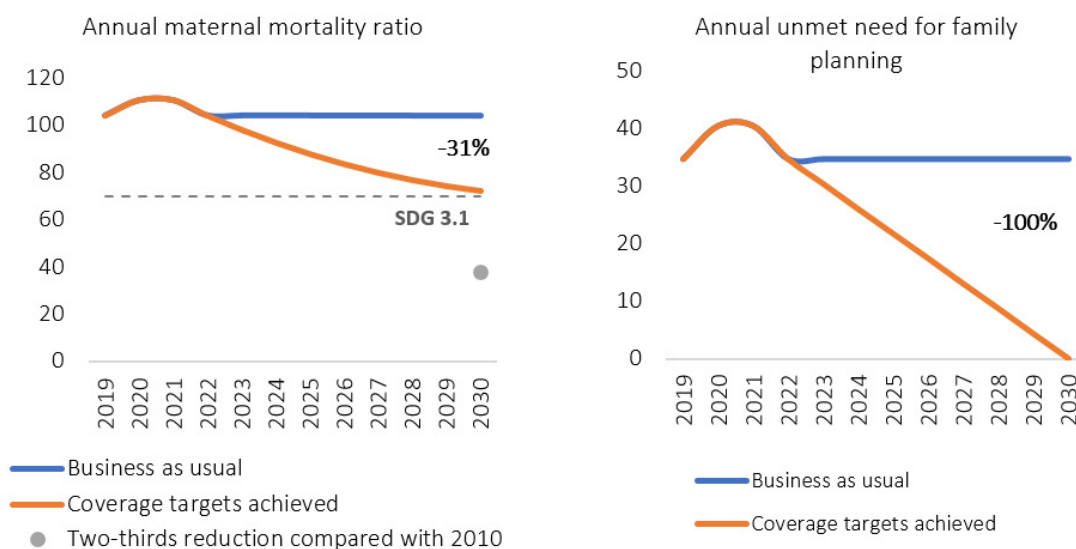
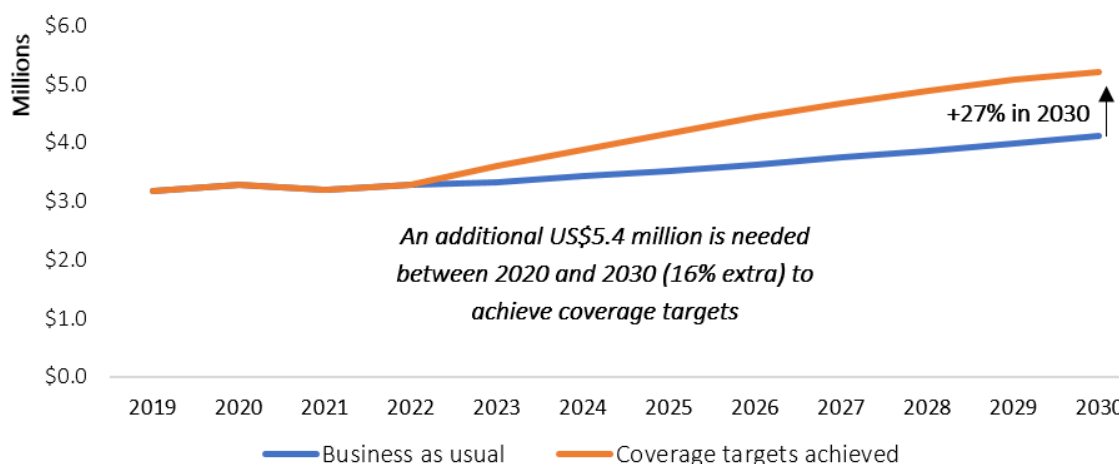


Figure 2. Estimated resource needs to achieve coverage targets for family planning and maternal health interventions by 2030 compared with business as usual, 2020-2030. Graph shows undiscounted annual spending for visual ease, while the US\$5.4 million is the additional discounted total (at a discounting rate of 3%). In the business as usual scenario (intervention coverages maintained), annual costs increase slightly due to population growth.



4. TONGA

For Tonga, the 2019 Multi-Indicator Cluster Survey (MICS) provided valuable demographic and epidemiological information to inform this study. The MICS suggested that Tonga has an estimated 29% contraceptive prevalence rate (modern and traditional methods), 22% unmet need for family planning, and a total fertility rate of 3.5. In addition, the maternal mortality ratio for 2019 was estimated to be 52 per 100,000 live births, already having surpassed the global SDG 3 target 3.1 of reducing maternal deaths to less than 70 per 100,000 live births. In 2019, Tonga had a population size of 109,000, including 27,000 women of reproductive age, and an estimated 3,000 births, 98% of which occurred in health facilities.

For the Business as Usual scenario, estimated 2019 coverage levels were maintained until 2030 (incorporating any reductions in 2020 and 2021 due to COVID-19). For the Coverage Targets Achieved scenario, coverage levels were modelled to enable Tonga to achieve 95% coverage of maternal health interventions and 0% unmet need for family planning by 2030. The graphs below illustrate the results for maternal mortality ratio decrease, unmet need for family planning decrease, and estimated financial resources to achieve coverage targets by 2030.

Figure 1. Impact of achieving coverage targets (95% coverage of maternal health interventions and 0% unmet need for family planning) on the maternal mortality ratio (left), and unmet need for family planning (right).

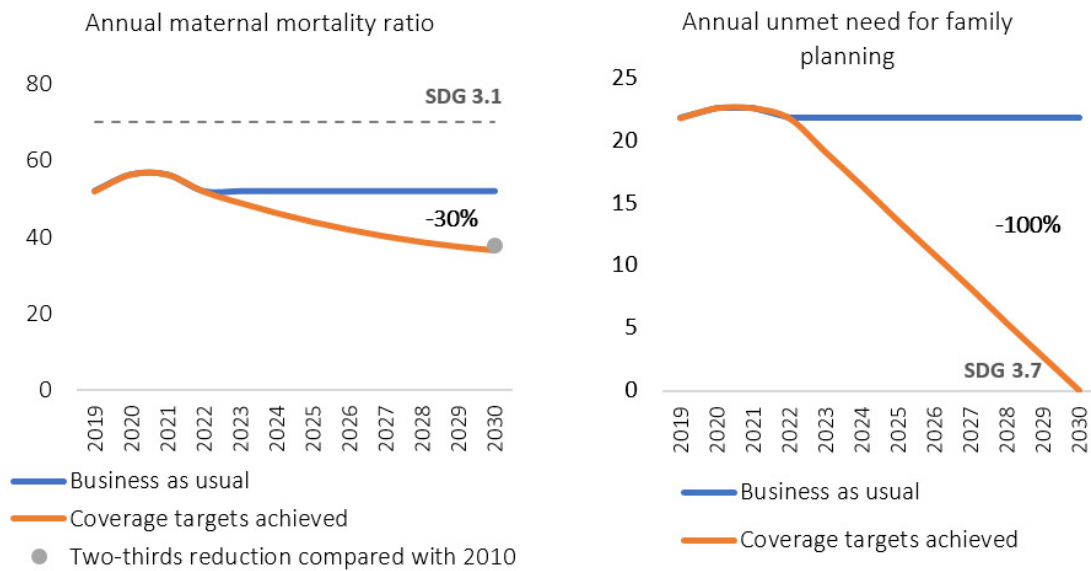
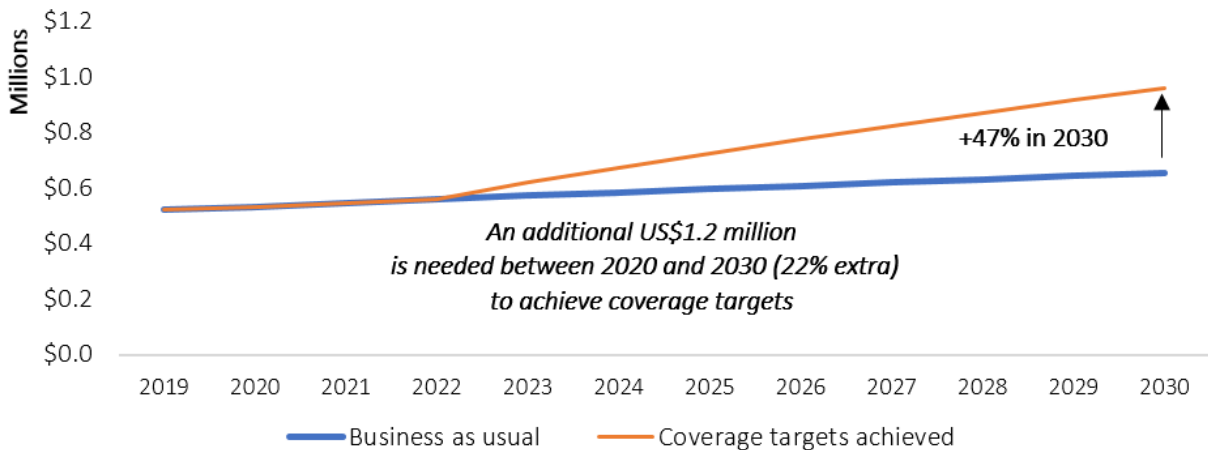


Figure 2. Estimated resource needs to achieve coverage targets for family planning and maternal health interventions by 2030 compared with business as usual, 2020-2030. Graph shows undiscounted annual spending for visual ease, while the US\$1.2 million is the additional discounted total (at a discounting rate of 3%) (in US dollars). In the business as usual scenario (intervention coverages maintained), annual costs increase slightly due to population growth.



5. VANUATU

For Vanuatu, the 2013 DHS provided the demographic and epidemiological information that informed this study. The 2013 DHS reported that Vanuatu had an estimated 38% contraceptive prevalence rate (modern and traditional methods), 24% unmet need for family planning, and a total fertility rate of 3.2. In addition, the maternal mortality ratio for 2019 was estimated to be 72 deaths per 100,000 live births, almost meeting the SDG 3 target 3.1 of reducing maternal deaths to less than 70 per 100,000 live births. In 2019, Vanuatu had a population size of 299,000, including 75,000 women of reproductive age, and an estimated 7,500 births, 89% of which occurred in health facilities.

For the Business as Usual scenario, estimated 2019 coverage levels were maintained until 2030 (incorporating any reductions in 2020 and 2021 due to COVID-19). For the Coverage Targets Achieved scenario, coverage levels were modelled to enable Solomon Islands to achieve 95% coverage of maternal health interventions and 0% unmet need for family planning by 2030. The graphs below illustrate the results for maternal mortality ratio decrease, unmet need for family planning decrease, and estimated financial resources to achieve coverage targets by 2030.

Figure 1. Impact of achieving coverage targets (95% coverage of maternal health interventions and 0% unmet need for family planning) on the maternal mortality ratio (left), and unmet need for family planning (right).

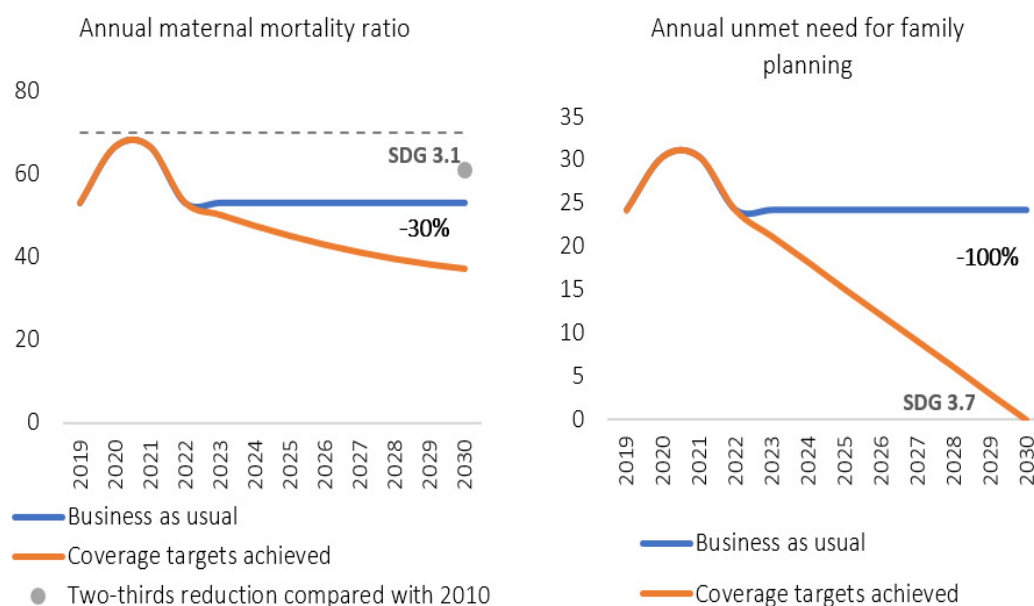


Figure 2. Estimated resource needs to achieve coverage targets for family planning and maternal health interventions by 2030 compared with business as usual, 2020-2030. Graph shows undiscounted annual spending for visual ease, while the US\$3.3 million is the additional discounted total (at a discounting rate of 3%) (in US dollars). In the business as usual scenario (intervention coverages maintained), annual costs increase slightly due to population growth.

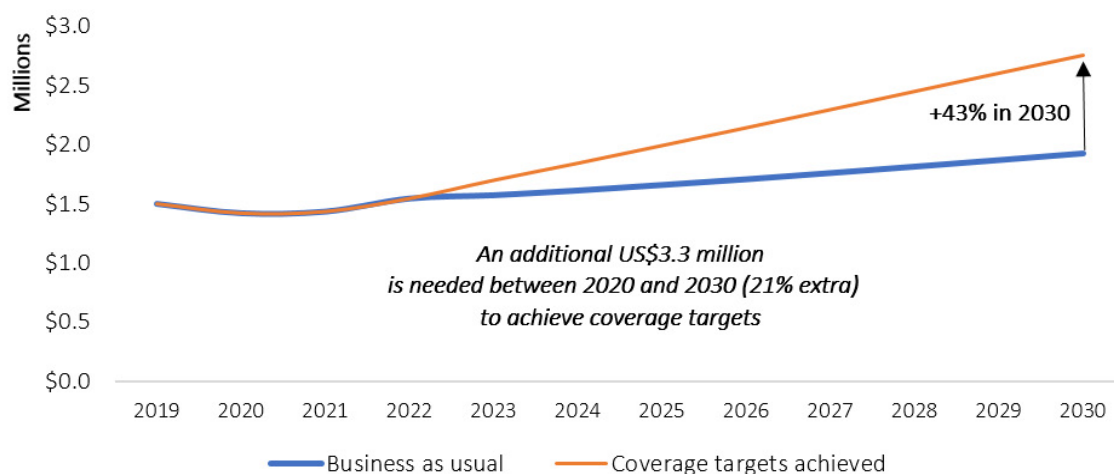


Photo: UNFPA Vanuatu

