



# Impact Evaluation of the Support to Maternal Mortality Reduction Project in Tanzania

**Approach Paper  
Final**

**September 2023**

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## Acronyms

ADF	African Development Fund
ADO	Assistant District Officer
AfDB	African Development Bank Group
AHVP	Agriculture, Human and Social Development Vice Presidency
AMO	Assistant Medical Officer
ANC	Antenatal Care
CAPI	Computer-Assisted Personal Interview
CHS	College of Health Sciences
CIA	Conditional Independence Assumption
CSO	Civil Society Organization
DHS	Demographic Health Surveys
DiD	Difference-in-Difference
EHP	Environmental Health Practice
EmOC	Emergency Obstetric Care
ERG	Evaluation Reference Group
FANC	Focused Antenatal Care
FGD	Focus Group Discussion
GOT	Government of Tanzania
HSRSP	Health Sector Reform Strategic Plan
HSSP	Health Sector Strategic Plan
ICT	Information and Communication Technology
IDEV	Independent Development Evaluation function
IE	Impact Evaluation
KII	Key Informant Interview
MCH	Maternal and Child Health
MDE	Minimum Detectable Effect
MMR	Maternal Mortality Rate
MRI	Magnetic Resonance Imaging
OBYS	Obstetrics and Gynaecology
OPD	Outpatient Department
PAR	Project Appraisal Report
PCREN	Project Completion Report Evaluation Note
PHC	Primary Health Centre
PMU	Project Management Unit
PSM	Propensity Score Matching
RECs	Regional Economic Communities
RFP	Request for Proposal
RMC	Regional Member Countries

SMMRP	Support to Maternal Mortality Reduction Project
SQHIA	Strategy for Quality Health Infrastructure in Africa
SSA	Sub-Saharan Africa
ToC	Theory of Change
UA	Units of Account
USA	United States of America
USAID	United States Agency for International Development
USD	United States Dollars
WASH	Water, Sanitation, and Hygiene
WDI	World Bank Development Indicators
WHO	World Health Organization
3ie	International Initiative for Impact Evaluation

# 1 Introduction

The Independent Development Evaluation function (IDEV) recently launched the Impact Evaluation (IE) of the Support to Maternal Mortality Reduction Project (SMMRP) in Tanzania as part of its 2022 Work Program approved by the Board of Directors. The objective of the evaluation is to inform the implementation of the Bank's Strategy for Quality Health Infrastructure in Africa (SQHIA, 2022-2030) approved in 2022, which aims at achieving a high-quality health system in Regional Member Countries (RMC) by increasing access to quality health services for Africans by 2030 with a focus on equity, quality care, efficiency, and the resilience of health systems. Specifically, the lessons learnt from the SMMRP would be useful in improving the design and implementation of similar health projects in RMCs under the SQHIA.

Approved by the AfDB in 2006 and implemented between 2007 and 2015, the SMMRP financed the construction, rehabilitation, and equipping of health infrastructure (health centres, obstetric theatres, maternity wards, staff houses, and training institutes) to reduce maternal and newborn mortality in remote and underserved areas. The project also trained health workers on maternal and child healthcare. The total project cost was UA 44.44 million and was financed by the African Development Fund (ADF) in the United Republic of Tanzania, with the project covering Tabora, Mara, and Mtwara Regions on the Mainland and Zanzibar Central/South, Pemba South, and Pemba North Regions in Zanzibar (Unguja and Pemba Islands). Section 3.3, below, describes the project in detail.

The rest of this approach paper is organised as follows. We start by reviewing the context in Section 2 and introducing the project and the evaluation in Sections 3 and 4. We then present a literature review in Section 5. Next, we present the project's Theory of Change (ToC) in Section 6 and the evaluation methodology in Section 7. Finally, Section 8 describes the evaluation's audience and work plan.

## 2. Context

### 2.1 The African Development Bank's Health Strategy

In the wake of the global COVID-19 pandemic, recognising the importance of providing quality healthcare infrastructure in Africa, the AfDB recently approved the Strategy for Quality Health Infrastructure in Africa (SQHIA, 2022-2030). The strategy recognizes that the quality of health services is both a development goal and a foundation for achieving inclusive growth and other development goals.

The Bank has been a marginal financier of health-related interventions since 2008, with its support limited to the provision of selective support during health emergencies. Within this period, the Bank's strategic direction focused on its areas of comparative advantage namely: infrastructure development, regional economic integration, private sector development, governance and accountability (AfDB, 2008, 2013). In recent years however, the Bank has provided significant resources to the health sector in response to health crises, these include the approval of \$3.3 billion for 43 RMCs and 9 institutions for the COVID-19 response and \$222 million for the Ebola response. These crises highlighted the need for a clear strategy to strengthen health systems and infrastructure in Africa, which resulted in the preparation and approval of the SQHIA, and the Bank's return to the health sector.

The objective of the SQHIA is to accelerate the development of quality health infrastructure and ensure that all individuals and communities receive health services. Its pillars are:

1. Primary health care infrastructure for under-served populations, with supporting infrastructure investment to ensure that facilities are connected to water and sanitation, energy, transport and communications services.
2. Secondary and tertiary healthcare facilities, involving developing new secondary and tertiary healthcare facilities, alongside specialist facilities for cancer, dialysis and pain management. These investments will be particularly relevant in countries where the burden of non-communicable diseases is growing rapidly.
3. Diagnostic infrastructure, utilising a range of delivery models, including public-private collaborations to address serious bottlenecks in efficient and effective diagnosis of diseases across the continent.

The strategy also set out three cross-cutting themes: (i) support improved ICT connectivity; (ii) promote regional collaboration; and (iii) include knowledge work, policy dialogue, and technical assistance in the package offered for every infrastructure investment.

## **2.2 Health Infrastructure in Africa**

The COVID-19 pandemic has highlighted the existence of major gaps in Africa's health infrastructure. Africa only has 1.3 hospital beds per 1,000 people (compared to 2.1 in Latin America and 6.1 in Europe).<sup>1</sup> This is particularly concerning because the disease burden in the continent is higher than elsewhere. Indeed, while Africa accounts for 15% of the world's population, it suffers 24% of the global disease burden and 50% of the global deaths from communicable diseases.<sup>2</sup>

The quality of the existing facilities is also found to be low: only half of the primary healthcare facilities in Sub-Saharan Africa (SSA) have water and sanitation services and only one-third have access to reliable electricity (AfDB, 2022). Similarly, estimates from a recent report on electricity access in healthcare facilities (WHO, 2023) show that 41% of the facilities in low and lower-middle-income countries of SSA lacked access to reliable electricity while 15% of the facilities had no access to electricity. Only 40% of health facilities had reliable electricity, indicating a significant gap in the use of electricity for critical health care in RMCs. For rural populations, the lack of access to and reliability of electricity has grave implications for maternal and child health, especially in the case of complicated deliveries and vaccinations. Diagnostic equipment is also lacking, with only 0.7 Magnetic Resonance Imaging (MRI) scanners available per million people (compared to 4.8 in China and 37 in the United States of America) (AfDB, 2022).

Estimates from the AfDB show that the continent needs \$26 billion per year until 2030 to meet its health service delivery infrastructure investment needs, almost 6 times as much as the amount currently invested: \$4.5 billion per year (AfDB, 2022). This includes healthcare facilities at all levels, diagnostic facilities, equipment and technologies, and non-clinical infrastructure that is vital to the effective operation of healthcare services (i.e., water and sanitation services, access to electricity, and digital connectivity). It however excludes other types of infrastructure in the health sector such as workforce training institutions, logistics infrastructure, research & development facilities, and manufacturing facilities. Moreover, the World Health Organization (WHO) notes that less than 7% of government expenditure on health is spent on infrastructure including equipment, access to electricity, transport, and Information and Communication Technology (ICT).

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<sup>1</sup> Data from WHO Global Health Observatory, reported by AfDB (2022).

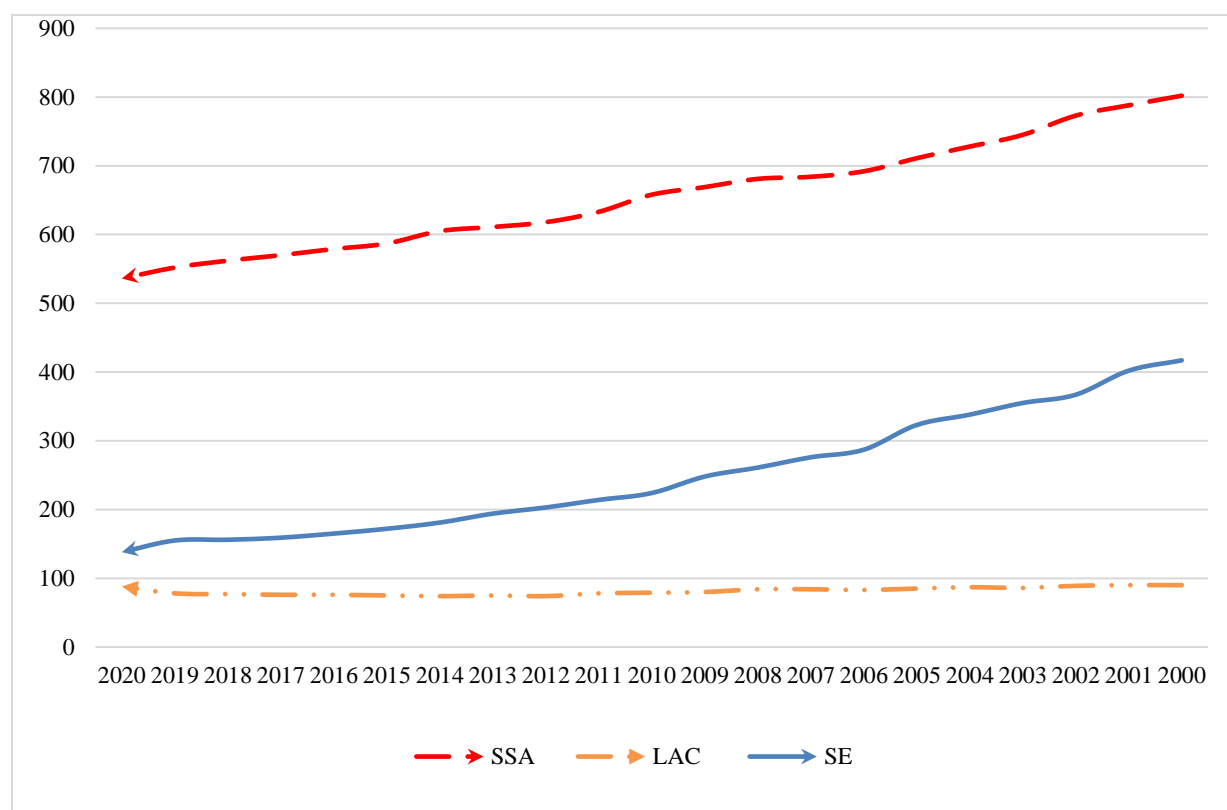
<sup>2</sup> Data from WHO, reported by AfDB (2022).

### 2.3 Maternal and Child Health in Africa

The insufficient provision of high-quality health infrastructure results in elevated maternal and infant mortality.

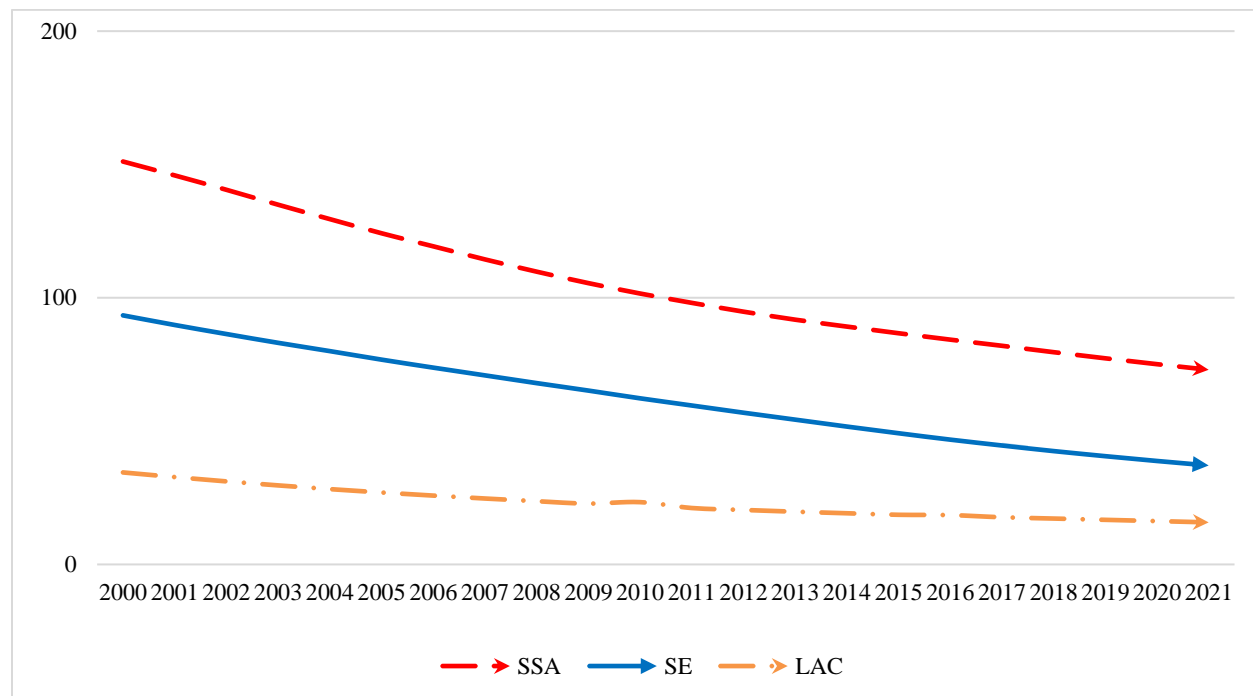
Figure 1 shows that the Maternal Mortality Rate (MMR) in sub-Saharan Africa (SSA) has reduced by 33% between 2000 (802/100,000) and 2020 (536/100,000). However, a comparison of MMR in SSA with South Asia (SE) (138/100,000), Latin America and the Caribbean (LAC) (88/100,000) in 2020 shows that while huge progress has been made over the past two decades, the level of maternal deaths remains persistently high. A similar trend is evident in the mortality rate for children below 5 years (see Figure 2 below). Specifically, while the infant mortality rate declined significantly by 52% between 2000 (151/1000) and 2001 (73/1000), it remains at a level that is twice the mortality rate recorded in LAC (15/1000) and SE (37/1000) for 2021.

Figure 1: Trends in Maternal Mortality Ratio (2000-2020)



Source: World Bank Development Indicators (WDI, 2023); Notes: Maternal Mortality Ratio is defined as the number of deaths per 100,000 live births (modelled estimates).

Figure 2: Trends in Under 5-Mortality (2000-2021)



Source: World Bank Development Indicators (WDI, 2023); Notes: Under-5 Mortality Rate is defined as the number of deaths per 1,000 live births.

## 2.4 Maternal and Child Health in Tanzania

The SMMRP Appraisal Report (AfDB, 2006), found that the Tanzanian health sector was suffering from a severe shortage of skilled personnel, which limited the ability of health facilities to offer quality health services. The lack of staff housing close to the facility was found to be a major barrier to the recruitment of skilled personnel in rural areas. Moreover, lack of maintenance led to the physical deterioration of many health facilities. As a result, the percentage of institutional deliveries was less than 50% although over 90% of pregnant women attended ANC in health facilities. As a direct result, maternal and infant mortality were found to be very high. Indeed, in 2006, when the SMMRP was approved, the maternal mortality ratio in Tanzania was 703/100,000 compared to 692/100,000 in SSA, while the under-5 mortality rate was 89/1,000 relative to the SSA average of 119.3/1000<sup>3</sup>.

At the time, the leading causes of maternal mortality in both Mainland Tanzania and Zanzibar were found to be haemorrhage (antepartum and postpartum), anaemia, and eclampsia, which was mainly due to poor access to emergency obstetric services. Furthermore, the poor quality of care, which was exemplified by a shortage of qualified staff, low staff morale, lack of quality control, and patient management contributed to a low rate of child delivery at health facilities.<sup>4</sup> Data from the Demographic and Health Survey (DHS) demonstrated that the rate of caesarean sections in the country was also low, indicating that mothers that required specific maternal healthcare services for complicated deliveries had insufficient access.

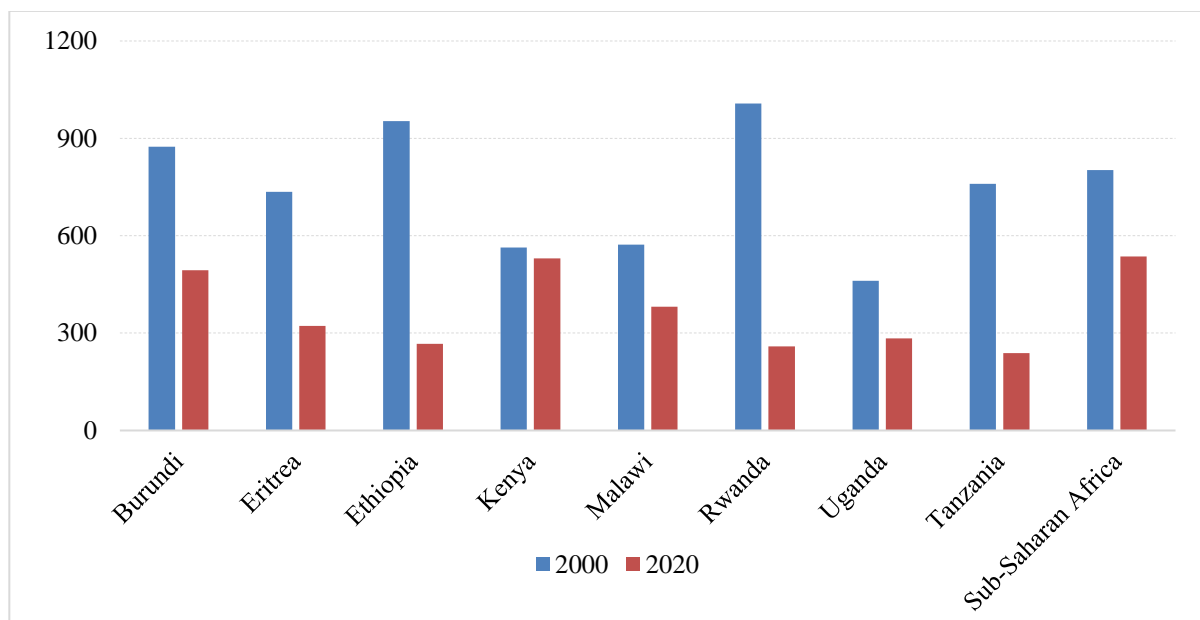
<sup>3</sup> World Development Indicators (2023).

<sup>4</sup> Other factors that could cause maternal mortality were the lack of electricity for lighting the theatres, sterilising equipment, making phone calls to emergency services, and refrigerating medication and blood products, and lack of clean water.



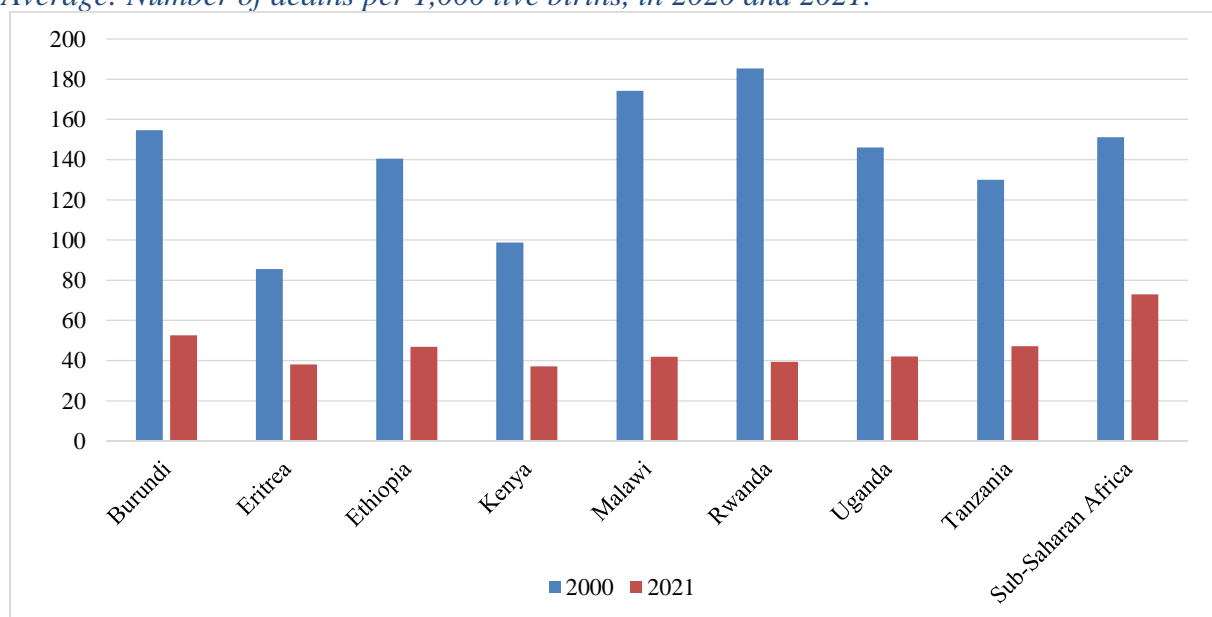
Since then, Tanzania and other East African Countries followed the regional trend and made significant progress in reducing both maternal and infant mortality (see Figures 3 and 4 below). Much of the advances in maternal and child health in Tanzania were achieved in the past decade, with both maternal mortality ratio and infant mortality rate reaching their lowest levels in 2020 (238/100,000) and 2021 (47.1/1000), respectively. However, despite these improvements, maternal and under-5 mortality in Tanzania and SSA is still high relative to the averages for LAC and SE shown in Figures 1 and 2 above.

*Figure 3: Maternal Mortality Ratio, Modelled Estimate, in Tanzania, Regional Comparators and Sub-Saharan Africa Average: Number of deaths per 100,000 live births in 2020 and 2020.*



Source: World Bank Development Indicators

*Figure 4: Under 5-Mortality Rate in Tanzania, Regional Comparators and Sub-Saharan Africa Average: Number of deaths per 1,000 live births, in 2020 and 2021.*



Source: World Bank Development Indicators

## **2.5 Rationale for a Health Infrastructure Impact Evaluation**

The evaluation will provide the Bank with an evidence base of what works in the health sector, what does not work, and why. Importantly, it will provide insights to the Bank on the ways to re-engage and develop expertise in the sector after decades of absence. Altogether, the findings from the evaluation are expected to support the design and implementation of new projects under the SQHIA, to help them become more effective.

Since 1999, IDEV has conducted several evaluations of the Bank's support in the health sector. These evaluations include i) Review of the Bank's Experience in the Financing of Rural Health Projects (1999), ii) Ghana: Evaluation of Bank Assistance to the Health Sector, 1984-2004 (2005), iii) Morocco: Review of the Bank's Assistance to the Health Sector, 1994-2004 (2005), iv) Tanzania: Evaluation of the Bank's Assistance to the Health Sector, 1998-2004 (2005), and v) Review of Bank Assistance Effectiveness to the Health Sector, 1987-2005 (2006). The following evidence and knowledge gaps were identified after a review of the above evaluations: i) limited evidence on the quality of healthcare services provided by health facilities, including the perspective of users/beneficiaries, ii) evidence of health outcomes at the individual and household level, with a focus on women (prenatal, perinatal, and postnatal) and children (prenatal development, infancy, and early childhood). iii) evidence on the affordability of maternal and child health, especially out-of-pocket health spending, and constraints faced by women in accessing healthcare, and iv) evidence on the demand side of the health sector such as health insurance coverage, which plays an outsized role in healthcare affordability, a key issue in resource-constrained environments. These gaps are also evident in IDEV's Country Strategy and Program Evaluations (CSPEs) that examine the Bank's support to the health sector. The current evaluation contributes to the body of existing evidence available to support the design, implementation, and development effectiveness of projects under the SQHIA by the Bank.

## **3. The Support to Maternal Mortality Reduction Project in Tanzania**

### **3.1 Project Selection**

In selecting a suitable project for the impact evaluation, the evaluation team focused on health infrastructure projects that closed and completed between 2012 and 2020. It is expected that the longer-term impact of projects completed within this period would have manifested at the individual, household, and health facility levels. Emphasis was placed on the Bank's health operations that focused on Pillar 1 of the SQHIA, namely primary healthcare infrastructure, and within that, public primary-level health clinical infrastructure (hospitals, district hospitals, health centres, and dispensaries) that provides last-mile access to quality healthcare for underserved areas and vulnerable populations. Also, health projects with supporting infrastructure investments such as clean water and sanitation, energy, and ICT were prioritised for selection.

An overview of the health projects financed by the Bank shows that a total of fifty-four (54) operations were completed and closed in the sample period (2012-2020). Of these, six (6) multinational projects and thirty-five (35) standalone projects provided technical assistance, emergency support for diseases (i.e., Ebola, Zika, Rabies), Regional Economic Communities (RECs), sector budget support, and other forms of capacity building for health systems strengthening were removed from the full sample. The remaining thirteen (13) projects had components that developed or reconstructed health infrastructure, and they were selected for consideration for the final impact evaluation. Table 1, below, presents the list of potentially evaluable health infrastructure projects that were examined in collaboration with the Bank's Agriculture, Human and Social Development Vice Presidency (AHVP).

*Table 1: List of Bank-financed health infrastructure projects considered for the IE*

	Country	SAP Code	Project Title	Approval	Completion	Total Cost (UA)
1	Uganda	P-UG-IB0-006	Support to Mulago Hospital	6 July 2011	31 December 2019	61,000,000
2	Tanzania	P-TZ-IB0-001	Support to Maternal Mortality Reduction	11 October 2006	30 April 2015	44,440,000
3	Benin	P-BJ-IB0-006	Developpement du Systeme de Sante	22 April 2005	31 December 2014	24,470,000
4	Guinea-Bissau	P-GW-IB0-003	Appui Supplementaire Sante II	7 January 2009	31 December 2014	6,000,000
5	Burkina Faso	P-BF-IBZ-003	Appui au dev Sanit Reg Cen -Est Et Nord	27 July 2005	30 September 2014	28,000,000
6	Madagascar	P-MG-IBE-001	Lutte Contre Maladies Transmissibles	8 December 2004	31 May 2014	25,000,000
7	Dem Rep Congo	P-CD-IBD-001	Sante I Appui Au Pdds En Prov.Orientale	17 March 2004	31 March 2013	27,490,000
8	Malawi	P-MW-IB0-005	Support to the Health Sector Programme	24 November 2005	31 December 2012	483,600,000
9	Uganda	P-UG-IB0-003	Support To Health Sector Strategic Plan II	11 August 2006	31 December 2012	22,220,000
10	Guinea-Bissau	P-GW-IB0-002	Projet D'appui Au Pnds - Sante II	19 November 1997	31 December 2012	11,110,000
11	Sierra Leone	P-SL-IB0-003	Strengthening District Health Services	7 September 2005	31 December 2012	18,900,000
12	Ghana	P-GH-IBD-001	Health Services Rehabilitation III	30 October 2002	30 October 2012	29,730,000
13	Kenya	P-KE-IB0-001	Rural Health Project III	17 June 2004, 7 July 2004	30 June 2012	32,120,000

*Source: Evaluation Team, 2022. Notes: The shortlisted projects in Table 1 were generated from a global database of health projects financed by the Bank between 1975 and 2020.*

Following consultations with AHVP's management, the selection of a project for the impact evaluation was based on the following criteria:

- i. A strong focus on health infrastructure to reflect the Bank's area of comparative advantage.
- ii. The size of the investment to show the extent of the Bank's involvement and engagement in the Country's health sector.
- iii. The presence of rural components and focus on Primary Health Care (PHC) to indicate the focus on underserved areas.
- iv. A clear identification of beneficiaries and potential outcomes to improve the evaluation's ability to measure development impact at the beneficiary level.
- v. The presence of similar donor interventions in project areas to understand the complementarity of the Bank's support with other development partners.

- vi. Health projects with mixed investments (Water, Sanitation, and Hygiene (WASH) and electricity) to show the vital role of related interventions in the delivery of quality healthcare service.
- vii. The availability of country-level secondary datasets such as DHS and MCIS to provide data on households and health facilities in program areas before and after the Bank's intervention.

Of the thirteen (13) health projects in Table 1, the Bank's Support to the Maternal Mortality Project (SMMRP) in Tanzania was selected having met the most criteria for an Impact Evaluation after meeting all the criteria. The outcome of this process was validated by the AHVP Complex through the Focal Person appointed for the evaluation. Specifically, the SMMRP was selected based on corresponding reasons below.:

1. The project was heavily focused on health infrastructure. In addition, the project was supported by other investments in water and sanitation, energy, transportation, and communication. Indeed, the following activities were implemented as part of the project: (i) construction of new Maternal and Child Health (MCH) units at identified dispensaries and rehabilitation of some dispensaries; (ii) construction of new obstetric theatres at health centres, including full rehabilitation of some health centres; and (iii) construction of new obstetric theatres at district hospitals including full rehabilitation of two (2) district hospitals in Mara and Tabora. Each health centre was provided with a newly constructed staff house for medical staff. The civil works also included the provision of WASH facilities, diesel generators, furniture, ambulance, radio communication, and electricity at selected facilities.
2. In terms of size, among the short-listed projects, the project had the third highest project cost of UA 44.44 million.
4. Rural component: The project aimed at improving access to quality health care for rural populations in Tanzania. The targeted areas of the project are rural in the targeted regions of Mara, Tabora and Mtwara on the mainland and the Islands of Zanzibar (Unguja and Pemba). The GoT identified these three regions in the Mainland as well as Unguja and Pemba in Zanzibar as the worst performing in health outcomes in Tanzania, especially on measures of MCH. The SMMRP aimed to address the findings of the Three Regions Health Study conducted in the Mainland and the Health Development Requirements Study in Zanzibar financed by the Bank through an ADF grant.
5. The beneficiaries of the project are clear: The primary beneficiaries of the project are predominantly women and children in the targeted regions.
6. The expected outcomes of the project are clear: (i) reduction in Maternal Mortality Ratio; (ii) reduction in Infant Mortality Rate; (iii) increase in Skilled Delivery Attendance; (iv) decrease in Home Delivery Rate.
7. In terms of mixed investments, the project planned for all new and existing facilities that do not have appropriate water and sanitation facilities to be provided with boreholes, VIP latrines and placenta pits. In addition, a diesel generator, and solar panels to provide electricity were planned for selected facilities.
8. The limited presence of similar donor interventions in SMMRP project area. The assumption is that in rural areas, the likelihood of having more than one health facility in the same area is low due to the construction costs for the government and the low number of potential beneficiaries. However, the health facility survey and the data collected from the ministry of health will provide information on support received from other donors such as the World

Bank, United States Agency for International Development (USAID) and other development partners in Tanzania.

9. The existence of alternative datasets was also key. Fortunately, there are available georeferenced datasets from the Demographic and Health Surveys (DHS) covering the years 2004, 2010, 2015 and 2017 and the ongoing data collection for 2023. The DHS Program routinely collects geographic and location information on health facilities in all surveyed countries.

### **3.2 Description of the Project**

The SMMRP aimed to accelerate the reduction of maternal and newborn deaths in Tabora, Mara, and Mtwara Regions on Tanzania Mainland and Zanzibar Central/South, Pemba South, and Pemba North Regions in Zanzibar (Unguja and Pemba Islands), with a focus on remote and underserved areas. While the project's medium-term expected outcome was to reduce maternal and neonatal morbidity and mortality, its longer-term expected outcome was to improve the health and well-being of Tanzanians. The project area on the Mainland and Zanzibar comprises 17 districts with a population of 3.1 million or 12% of Tanzania's population at the time of approval (2006). At project approval, the percentage of births supported by skilled health attendants stood at 47% for Mainland (Mara <35%, Mtwara: 35-41%, Tabora >55%) and 50.8% for Zanzibar (AfDB, 2006). Likewise, the percentage of births at home was around 50% for both the Mainland and Zanzibar while the unmet need for family planning services was 21.6% and 31.3% on the Mainland and Zanzibar, respectively.

The SMMRP was approved in December 2006 with an original completion date of December 2012. However, it recorded significant delays and was extended three times over 28 months. The Project Completion Report Evaluation Note (PCREN) shows that the first extension was 18 months (to 30 June 2014) while the second extension was 6 months (to 31 December 2014). The third and final extension was 4 months (to 30 April 2015) (IDEV, 2006). Several factors led to delays in the project implementation. Notably, the initial Project Implementation Unit (PIU) was replaced without the Bank's prior approval as required in the procurement rules and regulations. According to the PCR and PCREN, this led to poor project management and contract administration, as well as cost overruns. The poor project management was especially pronounced on the Mainland in the first five years of the project (2007-2012) and led to completion delays, non-delivery of planned outputs, and poor quality of civil works in some project areas. Other delays were caused by the late provision of counterpart funding by the Government of Tanzania (GoT).

The project comprised the following components: Component I - Strengthened Delivery of Maternal Health Services (Mainland), Component II – Strengthened Delivery of Health Care Services (Zanzibar), and Component III – Management and Coordination. The SMMRP was financed at a total amount of UA 44.44 million (or US\$65.75 million), with the African Development Fund (ADF) loan accounting for 90% (UA 40 million), and the Government of Tanzania (GoT) contributing 10% (UA 4.44 million), as counterpart funding. Of the approved amount, a total of UA 823,097 was cancelled. The summary of the project cost by component is presented in Annex C.

In general, the SMMRP financed two types of activities (or treatments) on the Mainland and Zanzibar. On one hand, it rehabilitated, constructed, and equipped health infrastructure (dispensaries, 2nd line dispensaries, health centres, and district hospitals), including Maternal and Child Health (MCH) Units at dispensaries and obstetric theatres at health centres and some

selected district hospitals. The project also constructed new Obstetrics and Gynaecology (OBYS) theatres in selected health facilities, and constructed, rehabilitated, and equipped training institutes on the Mainland (Tabora and Mtwara). Similar activities were undertaken at the College of Health Sciences (CHS) in Zanzibar. Other activities include the rehabilitation of the Project Management Unit (PMU) Office in Zanzibar, the procurement and installation of biomedical equipment, furniture, and radio for all SMMRP-supported health facilities, and the procurement of ambulances for district hospitals on the Mainland. Additionally, all new and existing facilities that did not have appropriate water and sanitation facilities were provided with machine-dug boreholes, VIP latrines and placenta pits. For Zanzibar, this comprised constructing incinerators for 3 Primary Health Centres (PHC) for the proper disposal of medical waste in Pemba.

The other activity financed by the SMMRP on both the Mainland and Zanzibar was the in-service training of health workers (clinical officers, midwives, nurses etc.) through workshops to update their knowledge and skills in the provision of services on maternal and newborn health care. The SMMRP was informed by findings from the Three Regions Health Study (Mainland) and the Health Development Requirements Study (Zanzibar), financed by the Bank through an ADF grant. Both studies revealed the inadequate number of health facilities especially obstetric theatres and maternity wards and shortages in the number of trained health personnel as key gaps in Tanzania's health system. Consequently, the SMMRP was anchored on Tanzania's Health Sector Strategic Plan (HSSP) and Zanzibar's Health Sector Reform Strategic Plan (HSRSP).

The activities of the SMMRP on the Mainland and Zanzibar at approval and completion are presented in Annexes D and E, respectively. The project's Component III (Strengthened Management and Coordination) to manage project activities was left out of the Table intentionally since its outcomes are not evaluable. However, its role in the performance of the SMMRP will be examined during the evaluation. A review of the Annexes shows that the scope of activities was the key difference between the Mainland and Zanzibar. Other notable differences are i) the type of training received by health workers, ii) the installation of biomedical equipment in health facilities, and iii) the construction, renovating, and equipping of the PIU Office in Zanzibar. Furthermore, a review of the project documents, PAR, PCR, and PCREN, shows that project activities were implemented separately on the Mainland and in Zanzibar<sup>5</sup>. For instance, while the two training institutes in Tabora and Mtwara provided RMNCH skills training to health workers on the Mainland, the CHS provided similar training in Zanzibar, albeit with some differences that reflect the differences in health training needs. Indeed, trained health workers were deployed to underserved communities within the region of the intervention. The project benefits also accrued to targeted areas. Specifically, health workers trained in Zanzibar were deployed in Unguja and Pemba while students trained in Tabora and Mtwara were deployed on the Mainland. In the latter, however, we cannot rule out that some skilled health workers were deployed to other regions on the Mainland. Moreover, each Component was implemented separately by a Project Implementation Unit (PMU).

A project performance evaluation will be conducted as part of the impact evaluation to provide more insights into the implementation challenges experienced by the SMMRP, including the success factors in Zanzibar. The assessment will shed more light on other aspects of health system strengthening that are key to quality healthcare delivery. Importantly, the evaluation will test the

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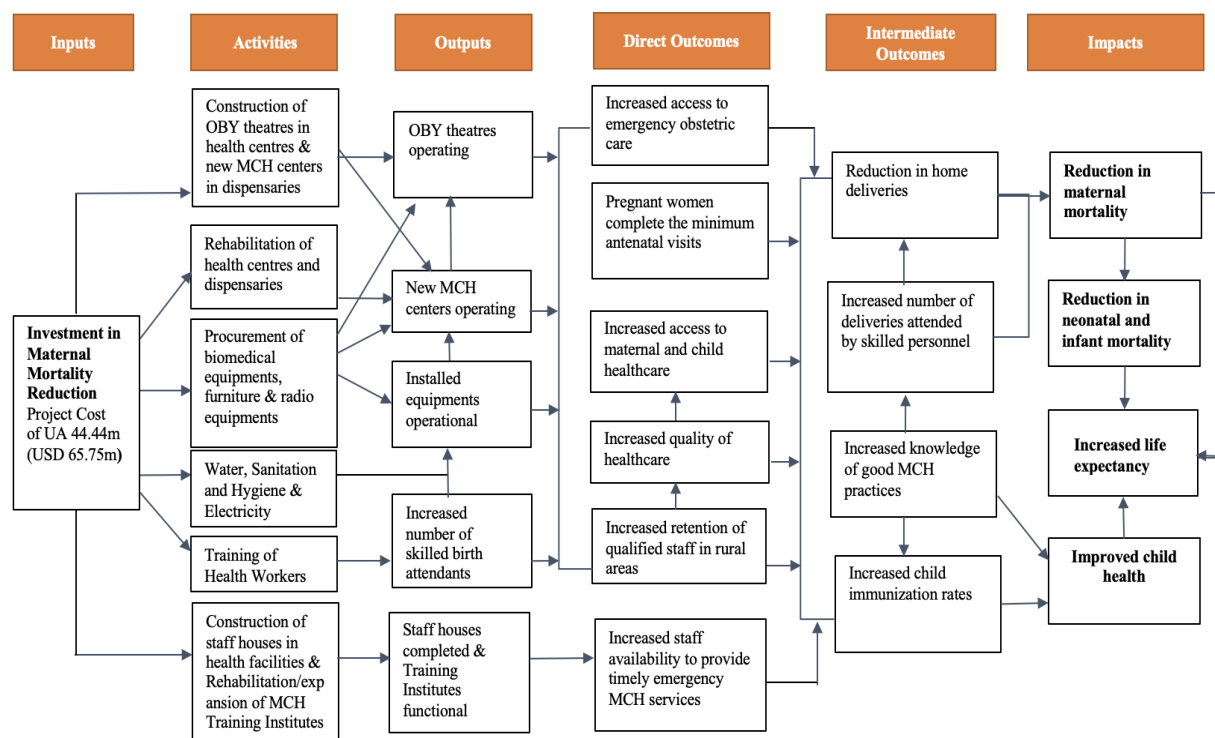
<sup>5</sup> While reference was made at PAR that 'Scholarships will be provided to enable students from Zanzibar, in particular those from Pemba, to undergo health training programs on the Mainland', no mention was made of the students that received scholarships by the Project Completion Evaluation Note. Also, it was not clear whether the scholarships were eventually financed by the SMMRP.

set of assumptions (see Section 3.3 below) that are critical for the causal pathways for longer term project outcomes/impact to manifest.

### 3.3 Theory of Change

Figure 3 illustrates the SMMRP theory of change starting from the activities and outputs financed by the project to their expected direct outcomes, intermediate outcomes, and final impacts. The project direct outcomes can be broadly summarised as increased access to higher quality healthcare, while the expected intermediate outcomes are related to an increase in the utilisation of the healthcare services provided. Finally, the project’s expected impacts are related to improvements in general well-being, reduction in maternal mortality, and reductions in infant mortality and morbidity.

Figure 3: Reconstructed Theory of Change (Mainland and Zanzibar)



The expected benefits that accrued to project beneficiaries from the SMMRP are conditional on the following assumptions: i) targeted project beneficiaries use MCH services provided by SMMRP-supported health facilities, ii) project contractors meet all the performance requirements for all SMMRP components, including avoiding implementation delays, iii) health workers in AfDB-supported health facilities are well-trained and technically competent to provide quality MCH services for beneficiaries, iv) AfDB-supported health facilities provide adequate and reliable MCH services in project areas, v) targeted beneficiaries are aware and knowledgeable about MCH services provided in AfDB-supported health facilities, vi) training of health workers on the Mainland and Zanzibar would increase intake of students to enable deployment of full-time, qualified staff, vii) provision of staff-housing at SMMRP-supported facilities ensures that communities have access to a health provider at all times, especially during emergencies such as complicated deliveries. In addition, the provision of staff housing contributes to staff retention in remote and underserved areas supported by the project.

### 3.4 Evaluation Objective and Questions

The objective of the evaluation is to inform the implementation of the Bank's Strategy for Quality Health Infrastructure in Africa (SQHIA, 2022-2030), which aims to achieve a high-quality health system in Regional Member Countries (RMCs) by increasing access to quality health services for Africans by 2030 with a focus on equity, quality care, efficiency, and the resilience of health systems. By examining in-depth the impacts that a completed Bank-financed health infrastructure project had vis-à-vis its intended outcomes, identifying the factors that affected its performance and development outcomes, and generating lessons and recommendations for increasing the impact of future projects, the evaluation will contribute to the Bank's body of knowledge in the health infrastructure area. This body of knowledge can subsequently inform the design and implementation of projects under the SQHIA, thereby making them more effective.

The main themes to be explored by the evaluation are:

1. Access, quality, and utilisation of health services (affordability of health services will be explored).
2. Maternal health outcomes (mortality, facility delivery, antenatal care, caesarean delivery, and women's health knowledge).
3. Child health outcomes (neonatal and infant mortality, Immunization of under-five children, malnutrition).
4. Demand-side challenges such as the quality of care available for beneficiaries (user experience, health needs, affordability of health services and expectations).
5. Issues related to mixed investments and complementarity of the Bank's support with other donors.

The specific evaluation questions are:

1. To what extent was the project and its design relevant to Tanzania's health sector at the time of implementation?
2. What was the impact of the selected project on the direct, intermediate, and final outcomes foreseen at the time of project approval?
3. Which factors have affected the project performance and development outcomes?
4. What, if any, were the unintended impacts of the project?
5. Do health facilities with mixed investment have higher development impact than those focused only on health infrastructure? Is there any complementarity with the support provided by other donors and the government?
6. How did the project's design and implementation contribute to the operational sustainability of the facilities and results? Was the project's impact sustainable?
7. Which lessons and recommendations can we draw to increase the impact of ongoing and future health infrastructure projects financed by the Bank?

## 4. Literature Review: Access to and Utilization of Quality Maternal and Child Health Care Services

Access to quality healthcare is considered a human right and ensuring it through the provision of adequate infrastructure is one of the most critical roles of the state. Mothers and children are a critical sub-group of beneficiaries, and maternal and child health is a significant area of healthcare investment (see for example 3ie's [work](#) on the topic). Given the importance of the issue, there is still a significant need for rigorous impact evaluations aimed at measuring the impact of health infrastructure projects.



The literature on interventions or projects related to maternal and child health focuses mainly on demand and supply-side interventions. Conditional cash transfer schemes for the socio-economically disadvantaged and SMS text messages with appointment reminders and educational contents designed to stimulate Antenatal Care (ANC) visits and childbirth in health facilities (institutional deliveries) are examples of demand-side interventions while nurse midwife training and supplies for obstetric emergencies and neonatal resuscitation in health facilities are notable examples of supply-side interventions (Amudhan, Rai, Pandav, Krishnan, & Mani, 2013; Hirai et al., 2020). Supply-side interventions that construct or improve health infrastructure have received less attention in the literature since they target areas with low health outcomes. The disproportionate construction of health-related infrastructure in geographical areas with the most health needs compared to locations with better health outcomes creates difficulties in comparing both groups of project beneficiaries. Indeed, most studies rely on quasi-experimental methods to estimate the impact of healthcare infrastructure. Contrary to the demand-side literature that mainly adopts randomised control trials to evaluate the impacts of interventions, supply-side interventions mainly use instrumental variable methods, difference-in-difference, and propensity score matching because, as argued above, most supply-side interventions are done on a needs basis (Croke, Mengistu, O'Connell, & Tafere, 2020; Grépin et al., 2022; Hanson et al., 2017).

The demand-side literature mainly examines the impacts of projects that aim to increase demand for maternal and child health services. The most evaluated demand-side interventions include expanding health insurance (Wagstaff and Yu, 2007), cash transfers (Okeke et al., 2020; Okeke and Abubakar, 2019; Grépin et al., 2019; Lim et al., 2010), vouchers (Grépin et al.; 2019), user-fee exemption (Ridde et al., 2012), and financial incentives to traditional birth attendants for referrals to health facilities (Chukwuma et al., 2019).

Demand-side interventions are found to improve maternal and child health outcomes successfully. For instance, Okeke et al., (2020) and Okeke and Abubakar (2019) evaluate the impact of a conditional cash transfer in Nigeria that paid pregnant women to deliver in a health facility in Nigeria. They found that the intervention was effective in raising facility deliveries, overall satisfaction and in increasing child survival. However, no impact was found on the reduction of preventable complications that are related to maternal deaths. Along those lines, Grépin et al. (2019) evaluated the impacts of vouchers and cash transfers on facility deliveries in Kenya. They found that vouchers and cash transfers increase deliveries at health facilities and the use of maternal health services. Some cash transfer interventions go beyond and target traditional birth attendants. For instance, Chukwuma et al., (2019) evaluate the impacts of a cash transfer program on traditional birth attendants on the condition they direct their clients to health facilities for post-natal care. Their results show a significant increase in the proportion of women attending postnatal care within 48 hours of giving birth. Although cash transfers were found effective in increasing the use of maternal health services, some studies highlight that deliveries at health facilities do not necessarily translate into health improvements. Indeed, Lim et al, (2010) found that a national cash transfer in India successfully increased institutional deliveries but was not associated with health improvements. A meta-analysis conducted in 2021 (Neelsen and al., 2021) shows that vouchers and conditional cash transfers are the most effective in improving maternal and child health outcomes among demand-side interventions.

On the other hand, supply-side interventions aim to improve access to maternal and child health services and the quality of care provided through the upgrading or construction of health facilities (Admassiea et al., 2009; Wagstaff and Yu, 2007; Grépin et al., 2022; Croke et al., 2020), provision of equipment and supplies, training (Diaz and Jaramillo, 2009; Grépin et al., 2022) and results-based financing (Engineer et al., 2016; Lawson and Acharya, 2020; Ahmed et al., 2023).

Among supply-side interventions, the provision of maternal and child health infrastructure was found to improve maternal and child health outcomes. Admassiea et al. (2009) evaluated the impact of a pro-poor health services extension program in Ethiopia that expanded the construction of health posts and provided health extension workers. They found that the program significantly increased the proportion of children fully vaccinated but found limited evidence on mother utilisation of antenatal and postnatal care services. Similarly, Croke et al. (2020) evaluated the impacts of health facility construction in Ethiopia on maternal health service utilisation and birth outcomes. They found that constructing new health facilities within 5 km increases facility delivery and antenatal care. However, no impact was found on caesarean section births or neonatal mortality.

Physical access to healthcare facilities measured by distance is considered one of the main determinants of service utilisation. A recent meta-analysis conducted by Wong et al. (2017) found a significant relationship between distance and utilisation of skilled birth attendants for childbirth in SSA. In Tanzania, Sato et al. (2019) use DHS and primary data collected in the Arusha region and find that access to health facilities contributed significantly to healthcare utilization. Along those lines, Okwaraji and Edmond (2012) conducted a meta-analysis on the distance to health facilities and child survival and showed that children living within 5 km or 30 minutes travel time from a health centre had a decreased perinatal and neonatal mortality risk compared with children who lived beyond this distance. Their results also indicate that proximity to health facilities was associated with stronger effects in richer countries with well-functioning health systems than in poorer countries. In Tanzania, Hanson et al. (2017) examined the association between the straight-line distances to the nearest primary health facility or hospital and the uptake of maternity care. Their results indicate that for women who sought maternity care, access to primary facilities appeared to improve, however, access to hospital care and caesarean sections remained low.

Giaz and Jaramillo (2009) evaluated the impact of an intervention aimed to reduce maternal mortality in Peru through the training of health workers. Their results suggest a positive impact of the training provided on the number of deliveries, including deliveries using oxytocin, caesarean deliveries, and complicated deliveries. Their results also show that the programme reduced the incidence of postpartum haemorrhage, the main cause of maternal mortality. The impact evaluation of a large-scale programme that trained midwives in 2012 found that it significantly increased the proportion of women giving birth in a health facility (Grépin et al., 2022)

On results-based financing, some studies find mixed results. Indeed, Engineer et al. (2016) found that performance-based financing for health services in Afghanistan had minimal effect, possibly due to difficulties communicating with health workers and inattention to demand-side factors. The mixed results are corroborated by an impact evaluation of performance-based financing in Tajikistan that did not find statistically significant impacts on the timing and number of antenatal consultations or coverage rates of child growth monitoring and vaccination.

However, according to Kurk et al. (2018), the main challenge for governments in low-income countries is no longer providing universal access to healthcare but ensuring that the healthcare services provided have sufficient quality. Therefore, some interventions specifically aim to improve the quality of care delivered. Audo et al. (2005) argue that high-quality facility-based care, with good access to emergency obstetric care, can reduce preventable maternal and newborn mortality and morbidity. Larson et al. (2019) evaluated a programme in Tanzania that focused on quality improvement. The intervention included three components to improve facility quality: infrastructure improvement (facility upgrades and ensuring basic equipment and supplies), provider training and supervision (continuing medical education, supportive supervision, and

mentoring), and peer outreach to promote facility utilisation for childbirth within the official catchment communities. Their results indicate that the intervention led to an increase in facility births and antenatal care.

In this context, this IE will examine the health outcomes of mothers and children in the targeted regions of Mara, Mtwara and Tabora, and Zanzibar. It will also examine whether health infrastructure improvements and staff training increased the quality of MCH healthcare services provided in rural communities.

## **5. Impact Evaluation Design and Methodology**

The main goal of this study is to investigate the impact of the SMMRP project on maternal and infant mortality. Since focusing on direct measures of maternal and infant mortality using primary survey data will require a very large sample (see power calculations), we propose a dual approach. First, we will collect primary data on outcomes that are closely related to maternal and infant mortality such as access and utilisation of health services and health outcomes, and conduct a rigorous IE focused on estimating the impact of the program on these outcomes. Second, we will attempt to gather secondary data (admin records or DHS survey data) to estimate the impact of this program on mortality indicators and assess the robustness of our main results.

### **5.1. Sampling Strategy**

#### **5.1.1 Identification Strategy**

To answer the question of how investments in health infrastructure impact health and economic outcomes, the ideal experiment would be to randomise such investment at the regional level across the whole economy. Moreover, to avoid generating spillovers, beneficiaries should not be allowed to access health care in regions other than the one in which they are residing. The randomization would ensure that beneficiaries and non-beneficiaries would be “identical” in absence of the program and that any differences between the two groups could be attributed only to the impact of the program. However, randomising the location of infrastructure, especially health facilities, is often infeasible for logistical and equity reasons. Also, requiring beneficiaries to only access health care in their own region is unrealistic. Therefore, studies that evaluate this type of program usually rely on quasi-experimental methods, which compare outcomes for program beneficiaries (treatment group) with those of a carefully selected control group that is as similar as possible to the treatment group, relying on some identifying assumptions.

In the case of the SMMRP, because baseline data is not available, we would need to assume that, absent the program, outcomes for the treatment group would be identical to those of a control group and that any differences observed between the two groups were caused by the program. Therefore, the selection of a valid control group is critical for the impact evaluation.

Healthcare facilities that receive the program might be in underdeveloped areas, or the facility itself is less equipped than other facilities. The selection bias arises because beneficiaries of these facilities might have on average a lower socio-economic status or less access to resources, which in turn affects their health outcomes negatively. In this setting, the omission of these important variables may influence the reliability of results from the study).

To minimise this bias, we would like to identify a treatment and a control group that were (i) very similar before the program, and therefore equally likely to be treated if the program could have had larger coverage, and (ii) did not receive systematically different shocks that might affect the

outcomes of interest, such as another program that built maternity wards in the majority of the places that did not have improved health facilities.

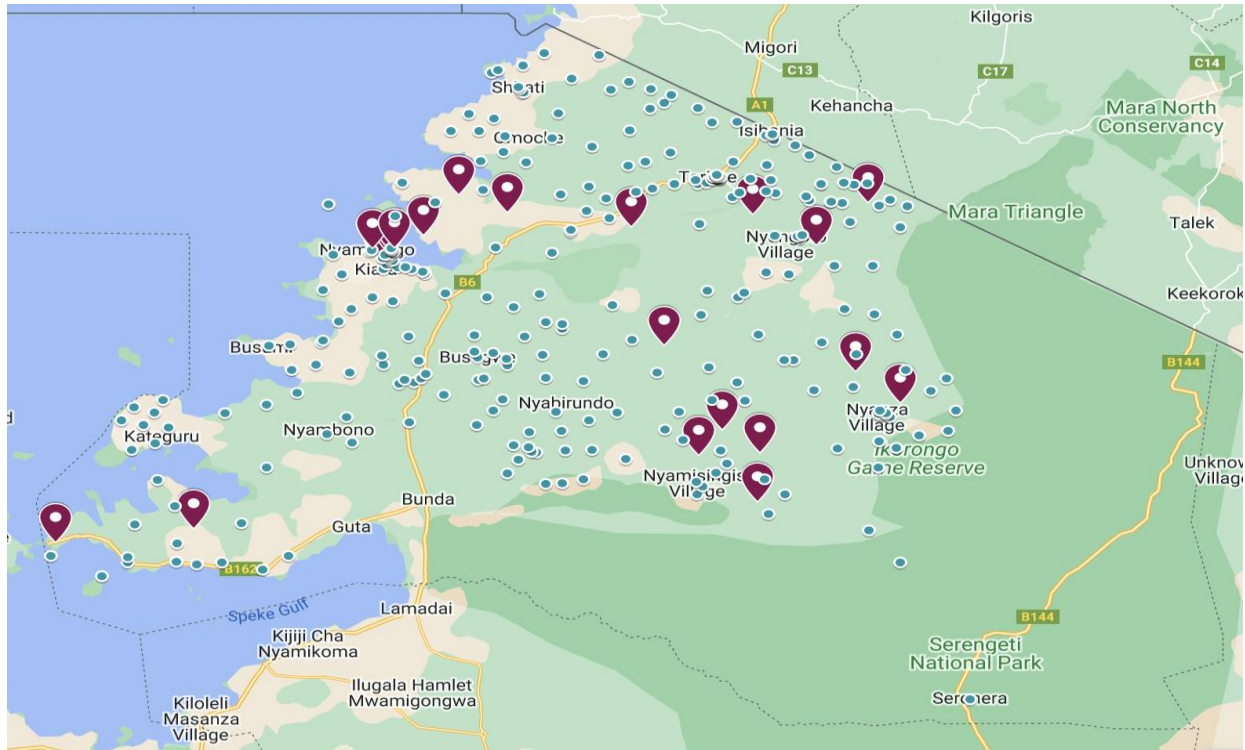
Since the program took place at the health facility level, the first step is to match treated facilities with facilities that did not participate in the program but were similar before the program took place. For example, a rural dispensary that was rehabilitated by the program could be matched with other rural dispensaries in the same region that existed before the program and were in a similar condition but were not selected for the program. To do so, we would use administrative data on the characteristics of the health facilities as well as data from population and demographic census to ensure that local socio-demographic characteristics in the areas served by the facilities were similar before the program took place.

Once treatment and control facilities have been identified, we will sample households from their respective catchment areas. To reduce the risk of potential bias caused by the treatment and control groups being systematically different because of factors unrelated to the program, we will apply a Propensity Score Matching (PSM) approach to the final sample using variables that are unlikely to be related to the program but could be systematically different across treatment and control group.

### **5.1.2 Selection of Treatment and Control facilities and Sampling**

We have received a complete list of medical facilities in the three mainland regions in which the program took place in the Mara, Mtwara, and Tabora Regions in Tanzania Mainland and Zanzibar Central/South, Pemba South, and Pemba North Regions in Zanzibar (Unguja and Pemba Islands). Figure 4 presents the map for the Mara region, where the treated facilities are represented by red dots, and the blue dots represent the facilities that did not participate in the program. Figures B1 and B2 in the Annex show the location of treated and untreated facilities in Tabora and Mtwara regions, respectively. To ensure an appropriate comparison between treatment and control households, we plan to sample control facilities that are similar to treatment facilities in terms of the socio-economic characteristics of the villages where they are located and facility characteristics (type, size, amenities, etc.).

*Figure 4: Map of facilities in Mara Region*



Source: Evaluation Team (2023 using Google Earth).

With the help of the survey firm, a sampling protocol consisting of the following steps will be prepared:

1. Matching health facilities with their corresponding catchment areas as of today, based on distance, type of facility, and presence of other facilities in the area.
2. Mapping today's catchment areas into villages that can be matched with the Population of Housing Census of 2002, before the program took place.
3. Matching treatment and control facilities based on observable characteristics from the available administrative data (or facility level collected for this purpose) and socio-demographic characteristics that the village(s) in their catchment area had before the program took place.
4. Sampling households from the two closest villages to each facility in the treatment and control group based on the distance to the facility and demographic characteristics (we want to survey households with at least one mother with a child between 0-5 years). If possible, households could also be selected so that the treatment and control group would be balanced on a set of socio-demographic characteristics that should not be affected by the program.
5. In each household, a woman who has at least one child between 0-5 years will be chosen as a respondent. If a household has multiple eligible women, one will be randomly chosen.

### 5.1.3 Propensity Score Matching (PSM)

Once the primary data is collected, we will implement a PSM approach to reduce confounding<sup>6</sup> biases to ensure that households in the treatment group are as comparable as possible to

<sup>6</sup> Confounding variables are those that affect other variables in a way that produces spurious or distorted associations between two variables, Therefore, reduce confounding biases is critical as this evaluation matched treatment and control groups based on observable characteristics from administrative and socio-demographic characteristics of the

households in the control group. This approach in the context of the SMMRP interventions will strengthen the credibility of our analysis by ensuring that treatment and control households present similar observable characteristics on a set of variables that should not be affected by the program such as age, education level, assets availability, housing quality, etc.

The rationale behind this approach is that it is reasonable to assume that households that are similar on a set of characteristics that are not affected by the program but are correlated to the outcomes of the program, would present similar outcomes in absence of the program. This assumption is known as the Conditional Independence Assumption (CIA) and it implies that conditional on observable characteristics, outcomes are assumed to be independent of treatment status (in absence of the program). If the CIA is satisfied, then controlling for the relevant observable characteristics or implementing a PSM approach would provide an unbiased causal estimate of the impact of the program. Compared with a simple regression with controls, the PSM approach has the further advantage of increasing the precision of the estimate (Imbens and Rubin, 2015).

Assuming that  $y_{ij}$  is one of the outcomes of interest, defined in section 7.6 (Primary Data) and in the attached Pre-analysis Plan (PAP), for household  $i$  located in the catchment area of facility  $j$ , the equation of interest is the following:

$$y_{ij} = \alpha + \beta * Treated_j + \epsilon_{ij} \quad (1)$$

where  $Treated_j$  is a dummy variable indicating whether facility  $j$  benefited from the SMMRP program and the coefficient  $\beta$  represents the effect of the program. Following the PSM approach, we can obtain an unbiased estimate of  $\beta$  using the following formula:

$$\hat{\tau} = \frac{1}{N} \sum_{ij:Treated_j=1} \lambda_{ij} y_{ij} + \frac{1}{N} \sum_{ij:Treated_j=0} \lambda_{ij} y_{ij} \quad (2)$$

Where  $\lambda_{ij}$  is a function of the propensity score estimated for household  $i$  located in the catchment area of facility  $j$ . Specifically:

$$\lambda_{ij} = \frac{1}{\hat{e}(X_{ij})} \text{ if } Treated_j = 1 \text{ or } \lambda_{ij} = \frac{1}{1-\hat{e}(X_{ij})} \text{ if } Treated_j = 0 \quad (3)$$

where  $\hat{e}(X_{ij})$  is the propensity score for household  $i$  located in the catchment area of facility  $j$  with observable characteristics  $X_{ij}$ . That is  $\hat{e}(X_{ij}) = Pr(Treated_j = 1|X_{ij})$

In practice, implementing the PSM approach requires two steps. First, the probability of being treated given certain household characteristics is estimated by fitting a logistic regression with the dummy  $Treated_j$  as the dependent variable and a set of covariates  $X_{ij}$  as independent variables. This allows us to predict the propensity score,  $\hat{e}(X_{ij})$  for each household in the sample and use it to compute their respective  $\lambda_{ij}$ . At this point, the propensity scores obtained for households in the treatment and control groups are compared and, in case some extreme scores are observed for one or both the groups, some observations are dropped to ensure the presence of a “common support”. Second, the equation of interest, equation (1), can be estimated using the  $\lambda_{ij}$  as inverse probability weights.

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village(s) that existed at baseline (before 2006). Today’s catchment areas were mapped into villages and hamlets from the Population of Housing Census of 2002 obtained from the National Bureau of Statistics.

Once the questionnaire is approved, we will submit a pre-analysis plan that details the methodology to be utilised to choose the variables to be included and to restrict the sample to the observations that have common support.

To explore heterogeneity by facility size, we would conduct heterogeneity analysis by facility size if possible, as follows:

$$y_{ij} = \alpha + \beta * Treated_j * Large_j + Large_j + \epsilon_{ij} \quad (4)$$

Where  $Large_j$  is an indicator variable for whether the facility is large.

### 5.1.4 Power Calculations

The sample size for the evaluation (n=7000) was determined from previous research on the impact of health facilities on maternal and child health outcomes (see Okwaraji & Edmond, 2012, Table 2), and the Evaluation’s Team normative choice based on previous evaluations. The power calculation was conducted before the fieldwork to estimate the sample size required to detect the smallest effect size from the Bank’s intervention in Tanzania Mainland and Zanzibar. Based on the sample size, the Minimum Detectable Effect (MDE) for the main outcomes of interest was calculated.

The MDE is the minimum value of the true effect of the program that ensures that the probability of rejecting the null hypothesis of zero average effect is high enough (usually 80%). Table 2 presents the planned distribution of the 7000 households across 120 facilities on the Mainland and 20 in Zanzibar.

Table 3 shows the MDE for the data collection. We use data estimates from DHS 2015-2016 for our pre-treatment values. We assume a level of intra-cluster correlation equal to 20%. In general, power calculations show that increasing the number of facilities while keeping the sample size the same improves power. Simulations show that the loss of power due to sample trimming in propensity score matching is minimal, therefore, these estimates are omitted from the table.

*Table 3: Power Calculations: Effect sizes based on the DHS 2015-2016 survey results.*

Outcome	Average before intervention	Sampling Method	Location	Number of facilities	Number of households	MDE (difference b/w treatment and control)	Treatment Mean	MDE to detect difference for Zanzibar from Mainland
Infant Mortality 61 per 1000 (2005-2010)		Women aged 15-49 with a child under 5	Mainland	120	6000	0.045	16 per 1000	
		Women aged 15-49 with a child under 5	Zanzibar	20	1000	0.08	< 0	
Antenatal care in the	15% (2010)	Women aged 15-49 with a child under 5	Mainland	120	6000	9.4p.p.	24.4%	

first trimester		Women aged 15-49 with a child under 5	Zanzibar	20	1000	26.4p.p.	41.4%	
Institutional deliveries	47% (2010)	Women aged 15-49 with a child under 5	Mainland	120	6000	11.8 p.p.	58.8%	
		Women aged 15-49 with a child under 5	Zanzibar	20	1000	28.6 p.p.	75.6 %	24.2 p.p.
Caesarean Section	5% (2010)	Women aged 15-49 with a child under 5	Mainland	120	6000	6.6 p.p.	11.6%	
		Women aged 15-49 with a child under 5	Zanzibar	20	1000	21.3 p.p.	26.3 %	24.8%
Percentage of children aged 12-23 who received basic vaccination	75% (2010)	Women aged 15-49 with a child under 5	Mainland	120	6000	9.5 p.p.	84.5%	
		Women aged 15-49 with a child under 5	Zanzibar	20	1000	20.7 p.p.	95.7%	25.7%

Source: Computed by the Evaluation Team using data from Tanzania DHS 2015-2016 Note: Assumed intra-cluster correlation = 0.2. Assumed sample size is 7000 households distributed equally across facilities and between treatment and control group in Tanzania Mainland and Zanzibar.

### 5.1.5 Secondary Identification Strategy: Two-Stage-Least-Squares

As a secondary identification strategy, we propose a Two-Stage-Least-Squares (2SLS) using *distance to the closest facility with a working operating theatre in 2006* as an instrumental variable for the health outcomes. The idea is that the program aimed at increasing access to health services (such as operating theatres) by prioritising areas that were underserved in 2006. Therefore, households located far from facilities that already had such services, were more likely to receive the program.

The identification assumption of this 2SLS approach would be that, conditional on a number of controls such as distance to the closest hospital or health centre, distance to main urban centre, distance to main road, and pre-program population density, the distance to *the closest facility with a working operating theatre in 2006* only affects the health outcomes of beneficiaries through its effect on the probability of benefitting from the program. As this is a strong assumption, we will view the evidence generated from this strategy with caution and consider it as complementary to our primary identification strategy of PSM. Moreover, this analysis will only provide information of the effect of benefitting from a subset of program outputs (improvements to hospitals or health centres involving the construction of operating theatres).

The 2SLS model has two stages:

First stage:

$$Treated_j = \alpha + \beta * d_{ij} + X_{ij} * \gamma' + \epsilon_{ij}$$

Second stage:



$$y_{ij} = \alpha + \beta^{iv} \widehat{Treated}_j + X_{ij} * \gamma' + \epsilon_{ij}$$

Reduced form:

$$y_{ij} = \alpha + \beta^{rf} d_{ij} + \epsilon_{ij}$$

Where  $Treated_j$  is a dummy variable equal to 1 if facility j benefitted from the program,  $d_{ij}$  is the distance of household i (matched to facility j) the closest facility that had an operating theatre in 2006, and  $X_{ij}$  is a matrix of controls for individual i, which includes distance to facility j, distance to closest hospital or health centre, distance to closest urban centre, distance to main road, and population density before the program.

### 5.1.6 Difference - in - Difference approach using secondary data

Given the impossibility to estimate the impact of the program on important outcomes such as maternal and child mortality, we are exploring the possibility of complementing the analysis with secondary data from two sources: administrative records and the Demographic and Health Survey (DHS). If this information becomes available, we would be able to compare treated and control villages before and after the program using a Difference in Difference (DiD) approach.

Specifically, administrative records on mother and child deaths at the village level will allow us to estimate whether the program achieved its objective of reducing maternal and infant mortality.

Moreover, DHS data was collected in Tanzania before and after the project: in 2004/05, 2011/12, and 2015/16. We will explore whether it is possible to match the sample included in this survey with facilities in the treatment and control group to replicate our results using a DiD approach and, if the sample is large enough, estimate the impact of the project on maternal and child mortality.

## 5.2 Data collection and analysis

### 5.2.1 Primary Data

Three quantitative instruments have been prepared for the impact evaluation: a household questionnaire, a health facility questionnaire, and a community questionnaire.

The household questionnaire is mostly based on the module of the DHS on women and is designed to capture the impact of the program on women's utilisation of healthcare services during their pregnancy and birth and for their children. The survey will also collect information on a set of household-level and woman-level characteristics, which will be used to implement the PSM. The survey should take 40 minutes on average, and it would be conducted through Computer-Assisted Personal Interviews (CAPI) with respondents.

The health facility survey will collect detailed information on the characteristics of the facility, its staff, and the services provided. We will also ask questions about the improvements that were made at the facility as part of the project or other programs supported by either the government or other donors. These data, together with the administrative records that will be provided to us by the local health authorities, will allow us to determine whether the matched treatment and control facility is indeed comparable and should be expected to be similar in absence of the program. In case the administrative records that will be provided are incomplete or insufficient to select treatment and control facilities, this instrument could be used to determine the eligibility of the facility for the study. In this case, it will be administered before the beginning of the household-level data collection on a larger number of facilities that are preselected as potential

candidates for the study. The data will then be analysed to select the final list of facilities to be included in the study. This survey should be 20 minutes on average, and it should be conducted in person at the health facility. However, if necessary, we could consider conducting it over the phone.

The community survey will aim at understanding whether we successfully matched communities and healthcare facilities “correctly” for the impact evaluation and whether treatment and control communities have similar characteristics.

The health facility survey and the community survey will also include open-ended questions, which will inform the qualitative part of the impact evaluation. In this sense, they can also be considered Key Informant Interviews (KIIs) as they will be conducted with informed people at the facility and the community level, and they will collect qualitative information on the quality of the services provided and, on the challenges, faced by both users and service providers.

All surveys will be translated into Swahili, pre-tested in the field, and adjusted before the beginning of data collection.

**The links to the survey instruments can be found here:**

- [Household survey](#) (V9)
- [Health facility survey](#) (V5)
- [Community survey](#) (V3)

**Measurement of key outcomes**

Once the questionnaire is approved, we will submit a pre-analysis plan that details how each outcome will be measured. In this section, we provide an initial description of how we plan to measure each of the key outcomes of this IE using the household survey data.

Main IE indicators:

- Skilled Delivery Attendance
  - Question C16 “*Who assisted the delivery of [NAME]?*” - Option 1 “*Medical practitioner (Doctor, Nurse/midwife)*”
- Home Delivery Rate
  - Question C19 “*Where did you give birth to [NAME]?*” - Option 2 “*My home*”
- Caesarean delivery
  - Question C27 “*Did you deliver through the caesarean section?*” - Option 1 “*Yes*”
- Women’s general knowledge of health practices
  - Index based on questions F1-F6
- Under-five malnutrition
  - Height-for-age, weight-for-height and mid-upper arm circumference: Questions D6-D8

Access and utilisation of health services:

- Facility delivery:
  - Question C19 “*Where did you give birth to [NAME]?*”- Option 1 “*Health facility*”
- Antenatal care:
  - Extensive margin: Question C28 “*Did you see anyone for antenatal care for this pregnancy?*” - Option 1 “*Yes*”; and Question C31: “*Where did you receive antenatal care for this pregnancy?*” Option 1 - “*Health facility*”

- Intensive margin: Question C39 “*How many times did you receive antenatal care for this pregnancy?*” (at least 4 visits)
- Postpartum care
  - Question C73 “*Where did they check your health 3-7 days after giving birth?*”- Option 1 “*Health facility*”
- Immunisation of under-five children
  - Question D3 “*Which vaccinations did [NAME] receive?*”

#### Affordability of health services:

- Cost of giving birth
  - Question C26: “*How much did you pay to give birth at the health facility?*”
- Cost of ANC
  - Question C55: “*How much did you pay to get ANC?*”
- Reason the reason not using services is distance and cost
  - Question C25, C36, C40, C82 - Options 1 and 2

#### Quality of health services:

- Timing of first ANC visit
  - Question C38 “*How many months pregnant were you when you first received antenatal care for this pregnancy?*” (less than 12 weeks)
- Quality of ANC:
  - Index based on questions C41-C43, C46, C49, C50, C53
- Time spent at the facility after giving birth
  - Question C19 “*How long did you stay at the place of giving birth?*” (at least 24 hours)
- Services provided at the facility (bed and water)
  - Index based on questions C63 and C64
- Breastfeeding within one hour
  - Question C88 - “*How long after birth did you breastfeed?*” (less or equal to one hour)

#### Maternal health:

- Pregnancy and postnatal care
  - Section C.3, (see questions C28-C94)
- Complications after birth for the mother
  - Question C84

#### Newborn health:

- Birthweight
  - Question C70
- Complications after birth for baby - neonatal morbidity
  - Question C71 - “*During the first 28 days after birth, did [NAME] have any complications or illnesses?*” - Option 1 “*Yes*”

### 5.2.2 Secondary Data

The impact evaluation will be complemented with secondary data as a cost-effective approach to allow the evaluation to get more information that may not be collected in surveys. We will explore the availability and use of the following data sources:

1. Administrative data at the facility level. If available, this data will allow us not only to improve the selection of facilities to be included in the sample (as treatment and control group) but also estimate the impact of the program on the quality and utilisation of health services.

2. Administrative data on maternal and child mortality at the village level. This data would allow us to estimate the impact of the program on key outcomes such as service maternal and infant mortality.
3. DHS collected in 2004/05, 2011/12, and 2015/16. We will explore whether it is possible to match the sample included in this survey with facilities in the treatment and control group to (i) validate our empirical strategy by checking whether villages in the treatment and control groups had similar characteristics before the project; (ii) replicate our results using a Difference in Difference approaches, made possible by the existence of data both before and after the project, and (iii) consider additional outcomes that we cannot include in our main analysis because of characteristics of our sampling strategy (these include maternal and infant mortality).

### 5.2.3 Qualitative Analysis

The qualitative analysis to be conducted for this impact evaluation will rely on two sources of information: (i) desk a review of existing documents, ii) health facility surveys, and (ii) primary data collection from FGDs conducted on Tanzania Mainland and Zanzibar.

**Desk review of existing documents:** The Evaluation Team completed a Scoping Mission in November 2022 during which the project was discussed with several stakeholders at the National and Regional level. The results of these meetings were reported in the mission's Aide-Memoire. Moreover, since the project closed in 2015, the (PCR and PCREN) is already available and contains relevant information on the implementation of the project and lessons learned. The team will carefully review these documents to understand to what extent the project implementation was successful.

**Qualitative data collection:** Since the high-level stakeholders of the project have already been consulted during the Scoping Mission, the qualitative data collection will focus on local stakeholders. In particular, Key Informant Interviews (KII) will be conducted with the medical doctors in charge of the health facilities and community leaders. Focus Group Discussions (FGDs) will be conducted with women using the health facilities as well as others identified as potential users of the facilities.

The objective of the KII will be to answer the following questions:

- a. What improvements to the facility were financed by the project?
- b. What is the perceived impact of the project on the quality of health services provided to the community?
- c. What could have made the program more effective?
- d. What are the main challenges faced by the facility in terms of the provision of high-quality RMCH services to women and children?
- e. What are the main challenges faced by women in the community that prevent them from accessing high-quality health services?
- f. What could the Bank do to address such challenges?

The KII questionnaires (health facility survey and community survey) are designed to also collect quantitative data necessary for the impact evaluation.

The objective of the FGD will be to understand the impact of the intervention on beneficiaries, specifically, the women and children with access to these facilities, as well as potential beneficiaries. Specifically, we would like to measure the quality of the care that these beneficiaries received, including *perceived* quality and level of satisfaction.

The link can be found here:

- [FGD guide](#) (V1)

#### **5.2.4 Project performance review**

The project performance evaluation of the project will be conducted by interviewing stakeholders across the three regions on the Mainland (Mara, Mtwara, and Tabora) and two regions in Zanzibar (Unguja and Pemba) and reviewing documents such as the project completion report (PCR) and the project completion report evaluation note (PCREN.) We complement this analysis with data from KIIs at the community level and FGDs conducted in the study area as well as with lessons from the impact evaluation. The project performance evaluation will examine the international evaluation criteria which are the relevance of the project, the coherence with the Bank's support to Tanzania and other development partners, and the effectiveness, the efficiency and the sustainability of the results achieved.

## 6. Users of the Evaluation, Work Plan and Evaluation Management

### 6.1 Target Audience

The priority audience for the impact evaluation of the SMMRP includes the Board of Directors of the Bank, Bank Management as well as staff in the Bank’s Agriculture, Human and Social Development Vice Presidency (AHVP) and other Bank departments and offices who will be involved in designing and implementing interventions under the Bank’s SQHIA, 2022-2030. Within the RMCs, the findings of the evaluation will be of interest to Government agencies including Ministries of Health, beneficiaries, other development partners active in the health space, Civil Society Organizations (CSOs) and private sector actors. The findings of the evaluation will also be of interest to many organisations that are or will be directly or indirectly involved in the development and implementation of the Bank’s SQHIA and related programmes in RMCs.

### 6.2 Work Plan

The impact evaluation will be undertaken in the first half of 2023. The work plan will involve the steps and timelines below.

*Table 4: Timelines for Key Deliverables*

Key Milestone	Timeline
Draft Approach Paper	15 February 2023
Final Approach Paper	28 April 2023
Survey Pilot and Final Revision of Programmed Instruments Primary datasets/GIS/Health Facility Data/Census completion	31 May 2023
Data Collection Completed (Mainland)	August 2023
Data Collection Completed (Zanzibar)	September 2023
Draft Technical Report (TR) (for Peer Review)	4 October 2023
Draft TR (for IDEV Management Review)	15 October 2023
Draft TR (for Evaluation Reference Group)	25 October 2023
Draft Summary Report (SR) for Peer Review	6 November 2023
Draft Summary Report for IDEV Management Review	15 November 2023
Draft SR for ERG review	25 November 2023
Final SR for IDEV Management Clearance	6 December 2023
<b>Final SR submitted for Management Response</b>	<b>11 December 2023</b>

### 6.3 Evaluation Management and Quality Assurance

The evaluation will integrate effective quality assurance processes and measures through the establishment of an Evaluation Reference Group (ERG) comprising staff representing relevant Bank complexes and departments. The evaluation will also be peer-reviewed by other IDEV staff with expertise and experience in undertaking similar evaluations. IDEV will also recruit an External Peer Reviewer to provide quality assurance support during the evaluation and peer review of the background documents and evaluation reports. The evaluation team will be led by Eustace Uzor (Evaluation Officer, IDEV.1) and Racky Balde (Evaluation officer, IDEV.1). The internal peer review comprises Andrew Anguko Ajuang (Chief Quality and Methods

Advisor, IDEV.0), Joseph Mouanda (Chief Evaluation Officer, IDEV.1) and Eric Kere (Senior Evaluation Officer, IDEV.2). Lina Zekri (Knowledge Management Consultant, IDEV.3), and Marc Bappa Se (Knowledge Management Officer, IDEV.3) will lead knowledge and communications, while overall guidance will be provided by Rufael Fassil (Division Manager, IDEV.1) and Karen Rot-Münstermann (Evaluator General, IDEV).

#### **6.4 Communication and Dissemination Strategy**

A mix of engagement, communication and dissemination activities will be targeted at the stakeholders engaged in this evaluation throughout the evaluation process in Section 7.1. The Evaluation Team will work closely from the Approach paper stage with the Knowledge Management and Communication Team to ensure that the findings, lessons, and recommendations from the evaluation are presented in custom formats to meet the needs of each stakeholder group, and therefore, ensure optimal uptake of the findings and recommendations from the impact evaluation. A stakeholder mapping was prepared within the Dissemination and Communication Plan to ensure that the stakeholders' knowledge needs are met throughout the evaluation process (from the preparatory, and inception phases to dissemination). The preliminary dissemination and communication plan is annexed to this document. The detailed dissemination plan will be developed and executed during and after at the end of the evaluation process.

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## Annex A: Additional Figures

Figure A1: Map of facilities in Tabora region.

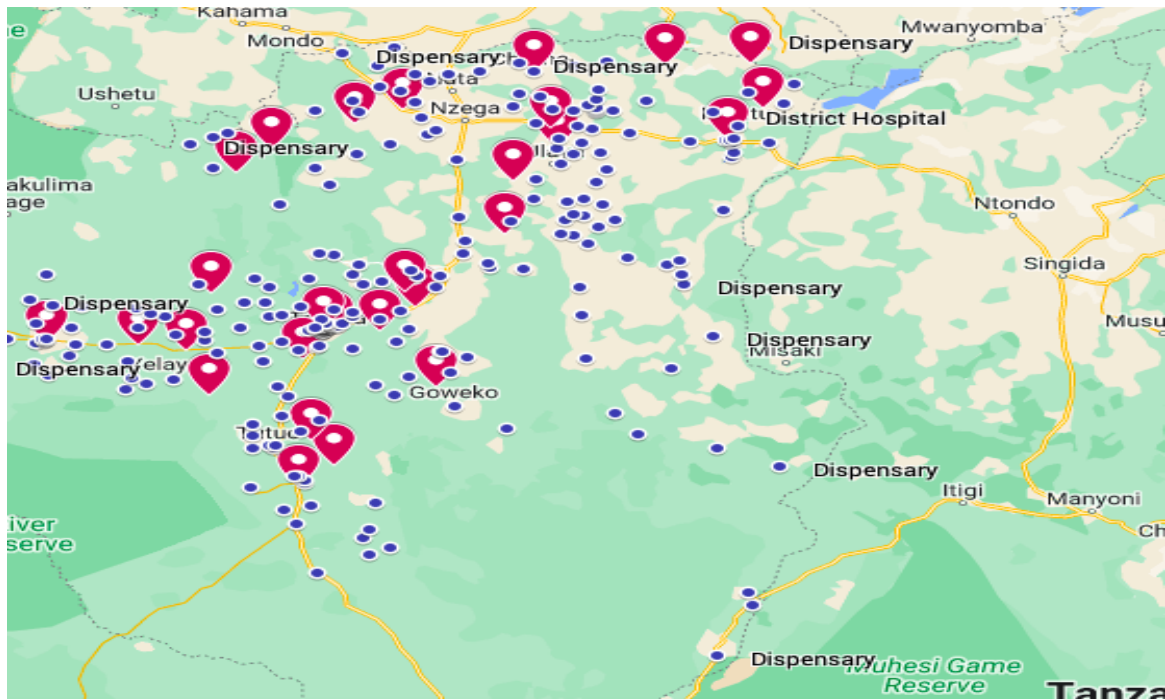
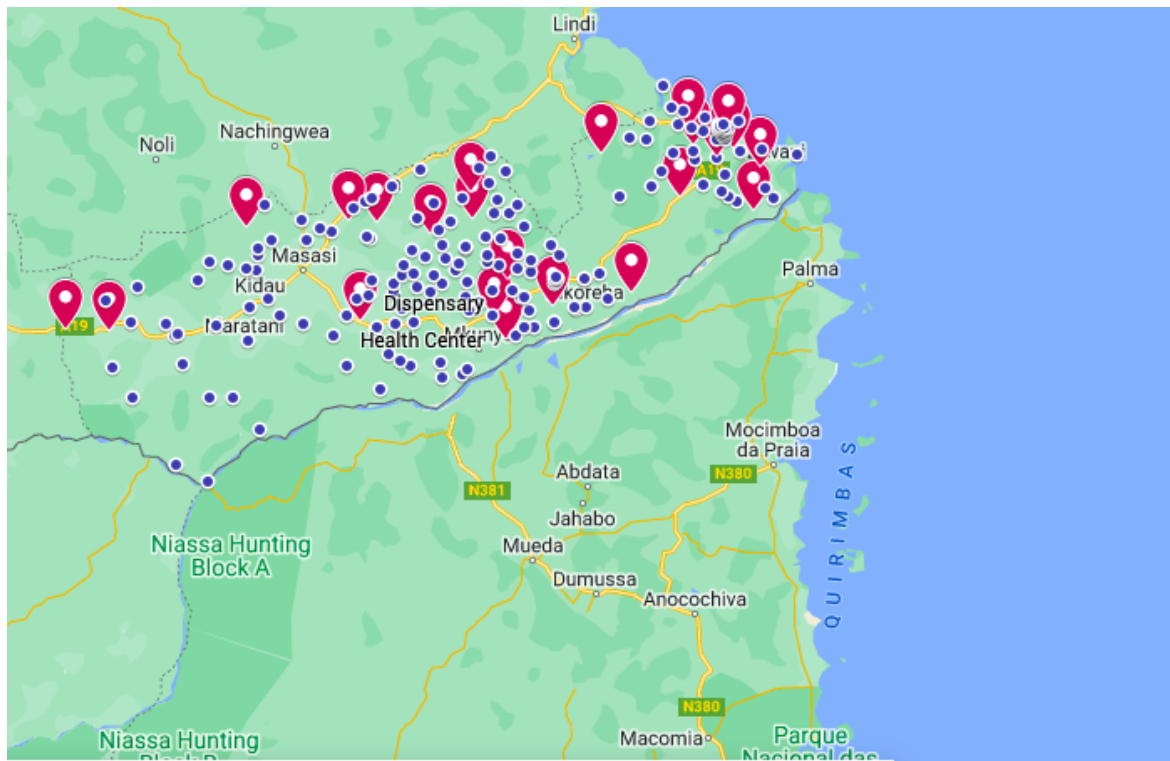


Figure A2: Map of facilities in Mtwara region.



Source: Evaluation Team (2023)

## Annex B: Evaluation Matrix

Evaluation Question	Information Required	Source	Data Collection Method	Data Analysis Method	Strengths and Limitations
<i><b>EQ.1:</b> To what extent was the project and its design relevant to Tanzania's health sector at the time of implementation?</i>					
Was the project relevant to Tanzania's health sector (Mainland and Zanzibar) and was the focus on MCH appropriate?	Information on Tanzania's health sector, project design and implementation	<ul style="list-style-type: none"> <li>Literature and policy documents on Tanzania's health sector</li> <li>Project Documents</li> <li>Qualitative Data</li> </ul>	Desk review Project documents KIIs FGDs	Qualitative analysis	
Did the project include the required components to achieve the planned development outcomes?	Information on Tanzania's health sector, project design and implementation	<ul style="list-style-type: none"> <li>Literature and policy documents on Tanzania's health sector</li> <li>Project Documents</li> <li>Qualitative Data</li> </ul>	Desk review Project documents KIIs FGDs	Qualitative analysis	
<i><b>EQ.2:</b> What was the impact of the selected project on the direct, intermediate, and final outcomes foreseen at the time of project approval?</i>					
Did the project reduce maternal deaths and infant mortality?	Maternal deaths	<ul style="list-style-type: none"> <li>Secondary Data (DHS)</li> </ul>	DHS	DiD	Limitation: We cannot compare mortality at the facility level (because of endogenous choice of the facility in case of complication) Our sampling strategy does not allow answering this question with primary data.
	Infant mortality	<ul style="list-style-type: none"> <li>Secondary Data (DHS)</li> </ul>	DHS	DiD	

					Strength: The DHS data can provide a baseline
Did the project increase skilled birth attendance?	Skilled birth attendances	<ul style="list-style-type: none"> <li>• Primary Data</li> <li>• Qualitative Data</li> </ul>	Household Survey FGDs KIIs	PSM Qualitative analysis	Limitation: We will need to account for spillovers from treated facilities to the control group.
Did the project reduce home deliveries?	Home deliveries/deliveries at the health facility	<ul style="list-style-type: none"> <li>• Primary Data</li> <li>• Qualitative Data</li> </ul>	Household Survey FGDs KIIs	PSM Qualitative analysis	
What is the impact of the project on the access and utilisation of maternal health services?	Outcomes such as ANC, postnatal care number of visits, c-sections	<ul style="list-style-type: none"> <li>• Primary Data</li> <li>• Qualitative Data</li> </ul>	Household Survey FGDs KIIs	PSM Qualitative analysis	Limitation: By focusing on the community located near the facility we might overestimate access and utilisation
Did the project improve the quality and affordability of health services?	Quality of maternal health services	<ul style="list-style-type: none"> <li>• Primary Data</li> <li>• Qualitative Data</li> </ul>	Household Survey FGDs KIIs	PSM Qualitative analysis	Limitation: Subjective measures
	Affordability of maternal health services	<ul style="list-style-type: none"> <li>• Primary Data</li> <li>• Qualitative Data</li> </ul>	Household Survey FGDs KIIs	PSM Qualitative analysis	Limitation: By focusing on the community located near the facility we might underestimate costs
What was the impact of the project on maternal health?	Women's health after giving birth (complications after birth)	<ul style="list-style-type: none"> <li>• Primary Data</li> <li>• Qualitative Data</li> </ul>	Household Survey FGDs KIIs	PSM Qualitative analysis	Limitation: Women might not feel comfortable reporting this information

What was the impact of the project on newborn-health?	New-born health (health and weight of new-born)	<ul style="list-style-type: none"> <li>• Primary Data</li> <li>• Qualitative Data</li> </ul>	Household Survey FGDs KIIs	PSM Qualitative analysis	Limitation: Recall data might not be accurate
What was the impact of the project on under-five immunisation and malnutrition?	Children fully vaccinated against	<ul style="list-style-type: none"> <li>• Primary Data</li> <li>• Qualitative Data</li> </ul>	Household Survey FGDs KIIs	PSM Qualitative analysis	Limitation: Recall data might not be accurate if the vaccination card cannot be presented
	Malnutrition of children (anthropometric measures)	<ul style="list-style-type: none"> <li>• Primary Data</li> <li>• Qualitative Data</li> </ul>	Household Survey FGDs KIIs	PSM Qualitative analysis	Strength: Anthropometric measurement is objective
Did the program improve women's general knowledge of health practices?	Knowledge level	<ul style="list-style-type: none"> <li>• Primary Data</li> </ul>	Household Survey	PSM	Strength: Knowledge can be measured objectively
<b>EQ.3: Which factors have affected the project performance and development outcomes?</b>					
Which factors contributed to the observed impacts of the project?	Outcomes related to the distance to the facilities, functional equipment at facilities, water sanitation and electricity at the facilities	<ul style="list-style-type: none"> <li>• Primary Data</li> <li>• Qualitative Data</li> </ul>	Household Survey FGDs KIIs	PSM (heterogeneous effects) Qualitative analysis	
<b>EQ.4: What, if any, were the unintended consequences impacts of the project?</b>					
Did the project led to any unanticipated positive or negative impacts?	Project outcomes	<ul style="list-style-type: none"> <li>• Primary Data</li> <li>• Qualitative Data</li> </ul>	Household Survey FGDs KIIs	PSM Qualitative analysis	
<b>EQ.5. Do health facilities with mixed investment have higher development impact than those focused only on health infrastructure? Is there any complementarity with the support provided by other donors and the government?</b>					

**EQ.6:** How did the project’s design and implementation contribute to the operational sustainability of the facilities and results? Was the project’s impact sustainable?

Was the design of the project appropriate and aligned with its development objectives?	Objectives of the project Bank strategies Context Design of the project	<ul style="list-style-type: none"> <li>• Project Documents</li> <li>• Qualitative Data</li> </ul>	Desk review Key informant interviews (AfDB and local stakeholders (ministry of health, regional medical officers and))	Qualitative analysis	
Did the project meet its objectives?	Objectives of the project  Performance indicators	<ul style="list-style-type: none"> <li>• Project Documents</li> <li>• Qualitative Data</li> </ul>	Projects documents KIIs FGDs The impact evaluation results	Qualitative analysis	
To what extent are the benefits of the project expected to continue in the future?	Maintenance of the facilities and equipment	<ul style="list-style-type: none"> <li>• Project Documents</li> <li>• Qualitative Data</li> </ul>	Desk review Key informant interviews (AfDB and local stakeholders (ministry of health, regional medical officers and))	Qualitative analysis Quantitative analysis from the impact evaluation	

**EQ.7:** Which lessons and recommendations can we draw to increase the impact of ongoing and future health infrastructure projects financed by the Bank?

What lessons and recommendations can be drawn for future similar, or health infrastructure projects and future health infrastructure projects financed by the Bank?	Information on project design and implementation	<ul style="list-style-type: none"> <li>• Project Documents</li> <li>• Qualitative Data</li> </ul>	Desk review Key informant interviews (AfDB and local stakeholders (ministry of health, regional medical officers and))	Qualitative analysis Quantitative analysis from the impact evaluation	
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Source: Evaluation Team (2023)



## Annex C: Project Costs by SMMRP Components

Components	USD Million	Million	Percentage of Total Cost
Component I	43.66	29.51	66.4%
Component II	9.31	6.29	14.2%
Component III	3.14	2.12	4.8%
Physical Contingencies	4.78	3.23	7.3%
Price Contingencies	4.85	3.28	7.4%
<b>Total Costs</b>	<b>65.75</b>	<b>44.44</b>	<b>100%</b>

Source: Project Appraisal Report (AfDB, 2006)

## Annex D: Activities at Project Appraisal Report

<b>Component I.</b> Strengthened Delivery of Maternal Health Care Services (Mainland)	<b>Component II:</b> Strengthened Delivery of Health Care Services (Zanzibar)
<b>Health Facility Infrastructure (Treatment Arm A)</b>	
Rehabilitation of selected hospitals health centres and dispensaries	Upgrade selected 2nd line dispensaries.
Construction of new MCH units at selected dispensaries	Construct Incinerators at health facilities in Pemba
Construction of new OBYS theatre at all health centres	Construct staff houses at selected dispensaries
Construction of staff houses at health centres	Extend College of Health Sciences (CHS)
Rehabilitate and expand selected training institutes	Provide furniture and equipment for CHS.
Procure biomedical equipment and furniture for selected health facilities.	Procure furniture and equipment for second-line dispensaries
Procure and install radio equipment in all health facilities.	
Procure ambulances for selected hospitals	
<b>MCH Skills Training (Treatment Arm B)</b>	
Orientation of RHMTs and CHMTs on evidence-based planning of MCH intervention	Training of health cadres
Update and distribute job Aids on the management of obstetric care	Recruit TA tutors for CHS

Training TOTs to train community resource persons	Training of CHS staff
Train health workers in life-saving skills, FANC, PAC and FP.	
Rehabilitate and expand selected training institutes	
Provide teaching and learning materials, equipment and furniture for training institutes	
Training of tutors	

Source: Project Appraisal Report (AfDB, 2006)

### Annex E: SMMRP Output Delivery at Completion

Outputs in Mainland (Component I)	Planned (Project Approval)	Delivered (Project Completion)	Performance (%)
Dispensaries rehabilitated	36	11	31%
Health Centres (HCs) rehabilitated	8	5	63%
District hospitals rehabilitated	3	2	67%
MCH units constructed at selected dispensaries	104	65	63%
New OBYS theatres constructed at selected HCs	36	26	72%
New OBYS theatres constructed in district hospitals	10	7	70%
New staff houses constructed at health centres	36	26	72%
Health training institutions constructed & equipped	2	2	100%
Biomedical equipment and furniture supplied to dispensaries, health centres and hospitals	352 (dispensaries) 36 (Health Centres) 10 (Hospitals)	68(dispensaries) 30 (Health Centres) 6 (Hospitals)	19% 83% 60%
Radio equipment supplied to dispensaries, health centres and hospitals	352 (dispensaries) 36 (Health	0	0%

	Centres) 10 (Hospitals)		
Number of ambulances procured for districts	8	8	100%
Zonal training on maintenance	3	0	0%
Number of RHMTs training on MCH interventions undertake	3	3	100%
Number of CHMTs training on MCH interventions undertake	17	17	100%
Number of Job Aids updated & distributed	1200	1200	100%
Number of TOTs trained	36	34	94%
Number of community resource persons trained	250	800	320%
Health workers trained in LSS	300	316	305%
Health workers trained in FANC	600	100	17%
Health workers trained in PAC	120	135	113%
Health workers trained in Family Planning	450	443	98%
Health workers trained in community mobilization.	352	0	0%
Tutors trained	2	2	100%
<b>Outputs in Zanzibar (Component II)</b>	<b>Planned (Project Approval)</b>	<b>Delivered (Project Completion)</b>	<b>Performance (%)</b>
CHS construct & equip: Academic Blocks, Dormitories, Staff Houses	2 Academic Blocks 2 Dormitories 2 Staff Houses	2 Academic Blocks 2 Dormitories 2 Staff Houses	100%
Construct & furnish Staff houses ( <b>Additional 4 completed with project savings</b> )	40	44	110%
Construct, equip & furnish 2nd Line Dispensaries ( <b>Additional 2 completed with project savings</b> )	6	8	133%

Construct Incinerators at health facilities in Pemba	3	3	100%
Refurbish, construct & equip PIU offices at MOH Unguja	1	1	100%
Construct, equip & furnish 10-bed wards, occupational therapy room, OPD and offices at Wete hospital Output	2 10-bed wards 1 Occupational Therapy Room 1 OPD 1 Office	2 10-bed wards 1 Occupational Therapy Room 1 OPD 1 Office	100%
Rehabilitate, construct & equip maternity and paediatric wards at Wete Hospital ( <b>with project savings</b> )	0	2	100%
Staff trained in EHP	100	100	100%
Staff trained in CP	450	200	44%
Training of staff trained at CHS - Clinical Officers	50	42	84%
Training of staff trained at CHS - AMOs	10	9	90%
Training of staff trained at CHS - ADOs	10	10	100%
Training of staff trained at CHS - Planning Officers	5	5	100%
Training of staff trained at CHS - Professional Officers	5	2	40%
Training of staff trained at CHS - maintenance for PHCs	5	5	100%
Number of Tutors from CHS recruited - Tutors	15	15	100%
Number of Tutors from CHS recruited - Non-academic staff	3	3	100%
Number of Tutors from CHS recruited - on short courses	15	15	100%
TA tutors recruited	4	4	100%
Procure of vehicles	2	2	100%

Source: PCREN (IDEV, 2006)

## Annex F: Dissemination and Communication Plan

### 1. Stakeholders and Target Audiences

High influence	<p><b>Category B: Keep satisfied / meet knowledge needs:</b></p> <ul style="list-style-type: none"> <li>• The Board</li> <li>• Bank Senior Management</li> <li>• Bank Regional hubs, Country Managers and Country Teams</li> <li>• Economic Governance and Knowledge Management (ECVP)</li> <li>• Regional Development, Integration and Business Delivery (RDVP)</li> <li>• Private Sector, Infrastructure and Industrialization (PIVP)</li> <li>• Power, Energy, Climate and Green Growth (PEVP), and Finance (FIVP)</li> <li>• Bank staff in the following departments:             <ul style="list-style-type: none"> <li>• Water Development and Sanitation Department (AHWS)</li> <li>- Infrastructure and Urban Development Department (PICU)</li> <li>- Safeguards and Compliance Department (SNSC)</li> <li>- Non-Sovereign Operations and Private Sector Support Department (PINS)</li> <li>- Strategy and Operational Policies (SNSP)</li> <li>- Performance Management and Results (SNDR)</li> <li>- The Transition States Coordination Office (RDTS)</li> </ul> </li> <li>• Bank staff in the following divisions:             <ul style="list-style-type: none"> <li>- Public Health, Nutrition and Social Protection Division</li> <li>- ICT Operations Division (PITD.3)</li> </ul> </li> </ul>	<p><b>Category A: Key partner / champion / manage closely / knowledge partnership:</b></p> <ul style="list-style-type: none"> <li>• CODE</li> <li>• Government of Tanzania (GoT)</li> <li>• Revolutionary Government of Zanzibar (RGoZ)</li> <li>• Bank complexes:             <ul style="list-style-type: none"> <li>- Agriculture, Human and Social Development (AHVP)</li> <li>- Human Capital, Youth and Skills Development Department (AHHD) / Gender advisors</li> </ul> </li> <li>• Members of the Evaluation Reference Group</li> <li>• International Development partners in the health sector/infrastructure, gender and migration (potential national or regional working group)</li> </ul>
Low influence	<p><b>Category D: Monitor / least importance:</b></p> <ul style="list-style-type: none"> <li>• Project coordinators (external)</li> <li>• Evaluation networks (OECD/DAC EvalNet, APNODE, AFREA, etc.)</li> <li>• Research organizations</li> </ul>	<p><b>Category C: Low influence but relevant and interested: Keep informed:</b></p> <ul style="list-style-type: none"> <li>• RMC government officials and experts in the health sector at central and local levels</li> <li>• Civil society</li> <li>• Tanzanian Order (doctors, nurses, etc.)</li> <li>• General Bank Staff (all staff not specified as key knowledge partners)</li> <li>• Development Partners</li> <li>• Private sector</li> <li>• Project beneficiaries</li> </ul>
	Lower interest	High interest

## 2. Stakeholder Role and Knowledge Needs

Stakeholder Category	Stakeholder Group	Strategy for engagement / communication of knowledge from evaluation	What is their role in the evaluation	What are the Information needs/interests in the evaluation	How will they use the findings and lessons?	How could the stakeholder impede the final completion of the evaluation
<b>Category A: Key partner / champion / manage closely / knowledge partnership</b>	Bank staff in relevant sectors	<p>Early engagement and throughout the evaluation process. Engagement should focus on sense of ownership of the evaluation by relevant Bank staff. Follow up engagement focus on useful actionable knowledge.</p> <p>Engagement in knowledge sharing activity.</p> <p>Engagement means could be through emails, active participation in learning events, dissemination activities (podcasts, debriefs, etc.) and knowledge sharing events</p>	<p>Providing source material and documentation for review.</p> <p>Participation in a limited number of interviews.</p>	<p>Key findings, strategic and operational lessons from the implementation of health infrastructure projects in RMCs.</p> <p>Drivers behind the performance and attainment of development outcomes from public primary health care infrastructure.</p> <p>Recommendations for success/sustainability of health infrastructure projects.</p> <p>Possible success stories of human interest pulled out from the SMMRP</p>	<p>Inform the design and implementation of projects under the SQHIA.</p> <p>Draw lessons for new initiatives and other sector specific interventions in water and sanitation, energy, transport and ICTs.</p> <p>Ways to story tell future successes of human interest on such impactful projects</p>	<p>Delay in proving of key documents and not divulging important lessons and information.</p> <p>This can be caused by misunderstanding of the objectives of evaluation.</p>
	Members of Evaluation Reference Group (ERG)	<p>Early engagement and throughout as reference group member, part of decision-making process in evaluation.</p> <p>Sharing documentation</p>	<p>Provide input to enhance the quality, credibility, and usefulness of the evaluation.</p> <p>Collate and provide necessary</p>	<p>Draft reports at each step of the evaluation (Concept notes, Approach paper, draft technical reports, draft summary reports.)</p>	<p>Review documentation to guide the evaluation.</p> <p>Provide input for evaluation, including knowledge gaps.</p> <p>Provide timely</p>	<p>Unwillingness to participate in evaluation exercise or provide key information</p>

		Engagement in workshops/knowledge sharing activities.	input from respective departments for the evaluation's key deliverables.  Keep respective departments informed about the evaluation.		feedback on reports; participate in ERG meetings	
Category B: Keep satisfied / meet knowledge needs	The Board / CODE	Inform about the ongoing process through emails and publication on website.  Presentation of completed report to the Board.	Review and approval of evaluation.  Discussion of salient points and oversight on Management's response to report.	Strategic and operational factors affecting performance and outcomes of health infrastructure projects.	To inform the new SQHIA and insight into projects targeting the High 5 priority area on improving the quality of life for the people of Africa.	Non-approval of final report, comments asking for edits.
	Senior Management	Dissemination of report and arising key knowledge.	Use of report for strategic planning for the SQHIA.	Strategic and operational lessons for achieving the intended project objectives, and increasing the impact of health infrastructure projects.	To inform assessment of new SQHIA and ongoing programs.	Not using report
	Bank Regional hubs, Country Managers and Country Teams.	Dissemination of report and Knowledge products  Engagement in workshops /knowledge sharing activities	Use of knowledge to participate in design and implementation of country programs and the SQHIA.	Working approaches necessary for the attainment of intended project objectives, and high-quality health systems.	To inform the design and implementation of infrastructure interventions.	Not using report
Category C: Low influence but relevant and interested: Keep informed	RMC government officials and experts in the health sector	Dissemination of report and Knowledge products  Engagement in workshops /knowledge sharing activities	Use of knowledge to improve country policies and strategies for achieving inclusive primary	Working approaches necessary for the attainment of intended project objectives and high-quality health systems.	Improve working with Bank  Improve national health polices and strategies	Minimal

			health care services.			
	General Bank Staff (not mentioned above)	Dissemination of report and Knowledge products Engagement in workshops	Use of knowledge to improve work.	Lessons to inform the SQHIA and other related programs. Constraints and challenges of financing high-quality health systems. Recommendations for success/sustainability of health infrastructure projects. Adaptability of the Bank's approach to country reality.	Development of new programs and strategies in line with the SQHIA	Not using report
	Development Partners	Early engagement, source for comparator approach to inclusivity	Provide documentation.	Strategic and operational lessons to inform the financing of health-related interventions. Constraints and challenges of financing high-quality health systems. Factors for the success/sustainability of infrastructure projects.	Inform own strategies and approaches to financing health infrastructure.	Limiting access to documentation Not using report
	Civil Society	Dissemination of report and Knowledge products Engagement in workshops/knowledge sharing activity	Use of knowledge	Lessons and findings related to their health-related roles within the civic space.	Inform their own policies	None
	Private sector	Dissemination of report and Knowledge products Engagement in workshops/knowledge	Use of knowledge	Strategic lessons and findings to inform areas for private sector engagement in health service delivery.	Inform their own policies	



		sharing activities				
	Project beneficiaries	Early engagement and throughout the evaluation process. Engagement should focus on sense of ownership of the evaluation by relevant Bank staff.	Use of knowledge	Expected outcomes from investments in health infrastructure.	Use of knowledge to increase demand for better health service delivery.	
<b>Category D: Monitor / least importance</b>	Project coordinators (external)	Dissemination of report and Knowledge products.	Provide documentation if needed	General lessons and findings	Use of knowledge to improve work.	Not providing documentation if needed.
	Evaluation networks (OECD/DAC EvalNet, APNODE, Twende Mbele, CLEAR, etc.)	Dissemination of report and Knowledge products. Engagement in workshops/knowledge sharing activities	Use of knowledge on evaluation synthesis approach to inform own evaluations	Lessons for evaluators. Knowledge related to own evaluations	Use of knowledge to inform own evaluations	None
	Research organizations	Engagement in workshops/knowledge sharing activities	Use of knowledge	General lessons and findings	Inform their research	None

### 3. Proposed Knowledge & Communication Products & Events

Stakeholder group	Knowledge Needs	Knowledge Products (NB. To be confirmed after internal discussion & Manager clearance)
<p><b>Category A</b></p>	<ul style="list-style-type: none"> <li>• Lessons to inform the design and implementation of projects under the new SQHIA, as well as and the High 5 priority area on improving the quality of life for the people of Africa, specifically:               <ul style="list-style-type: none"> <li>- Strategic and operational factors affecting the performance and development outcomes of public primary health care infrastructure.</li> <li>- Increasing the impact and sustainability of investments in health infrastructure.</li> <li>- Strengthening high-quality health systems.</li> <li>- Adaptability of the Bank’s approach to country realities.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Evaluation Synthesis Report</li> <li>• PPT Presentations with the key findings, lessons, recommendations &amp; management response</li> <li>• Summary Report</li> <li>• Knowledge Sharing event in collaboration with partners (like WHO and UNFPA) on innovative approaches to health financing in Africa</li> <li>• EVRD database</li> <li>• Lessons Note</li> <li>• Evaluation sectoral and stakeholders recommendations <b>technical note</b> (capitalizing on the results presentation feedback and other planned events at national or international levels).</li> </ul>
<p><b>Category B</b></p>	<ul style="list-style-type: none"> <li>• Working approaches necessary for the attainment of intended project objectives and building of high-quality health systems.</li> <li>• Human-centric achievements and Impact</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluation Synthesis Report</li> <li>• Summary Report</li> <li>• Lesson note</li> <li>• Knowledge Sharing workshop (virtual) in collaboration with partners (like WHO and UNFPA) on innovative approaches to health financing in Africa</li> <li>• Success stories (article and/or video)</li> <li>• News article based on pronounced emerging theme(s)</li> <li>• EVRD database</li> <li>• Methodological workshop highlighting the IE approach and lessons learned from the evaluation process/&amp; the field</li> <li>• Evaluation sectoral and stakeholders recommendations <b>technical note</b> (capitalizing on the results presentation feedback).</li> </ul>
<p><b>Category C</b></p>	<ul style="list-style-type: none"> <li>- Lessons for evaluators.</li> <li>- Knowledge related to own evaluations</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluation Synthesis Report</li> <li>• Summary Report</li> <li>• Adapted PPT Presentations with the key findings, lessons, recommendations &amp; management response</li> <li>• Knowledge Sharing workshop (virtual) in collaboration with partners (like WHO and UNFPA) on innovative approaches to health financing in Africa</li> <li>• Reports of each step of the evaluation (Concept notes, Approach paper, technical reports, summary reports.)</li> <li>• Evaluation sectoral and stakeholders recommendations <b>technical note</b> (capitalizing on the results presentation</li> </ul>

		feedback and other planned events at national or international levels).
<b>Category D</b>	- General knowledge of evaluation, its lessons and findings, and success stories	<ul style="list-style-type: none"> <li>• Evaluation Synthesis Report</li> <li>• Summary Report</li> <li>• Adapted PPT Presentations with the key findings, lessons, recommendations &amp; management response</li> <li>• Virtual event/<b>Webinar</b> (could be co-organized): sensitizing on IE specific approach, main results from sectoral Governance &amp; Gender perspective towards relevant Continental and international Dev. Agenda (SDGs, AU 2063)</li> <li>• Webpages on evaluation</li> <li>• Success stories (article and/or video)</li> <li>• Social media posts</li> <li>• Evaluation sectoral and stakeholders' recommendations <b>technical note</b> (capitalizing on the results presentation feedback).</li> </ul>