

City of Mbabane Eswatini: Comprehensive Sustainable Development Goals

Voluntary Local Review Report 2025



SUSTAINABLE DEVELOPMENT GOALS



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1. Executive Summary

The City of Mbabane, as the capital city of Eswatini, stands as a vital center for administrative, commercial, and social activities within the Kingdom. This comprehensive Voluntary Local Review (VLR) report presents an extensive analysis of the city's progress toward achieving the United Nations Sustainable Development Goals (SDGs) at the local level. The report encompasses detailed assessments across all relevant SDGs, organized into four strategic clusters: Poverty, Social, Economic, and Environmental.



Mbabane's commitment to sustainable development is demonstrated through its systematic approach to localizing the SDGs, adapting global targets to address specific urban challenges and opportunities. The city serves approximately 61,940 residents across diverse communities, with varying levels of development and infrastructure access. This review provides both quantitative data and qualitative insights into the city's achievements, challenges, and strategic pathways forward.

The report's structure follows the best international practices for VLR reporting while maintaining a focus on practical implementation strategies that can guide policy makers, development partners, and community stakeholders. Each cluster analysis includes status assessments, ongoing initiatives, identified challenges, and forward-looking recommendations that align with both national priorities and global commitments.

2. Introduction and Methodology

2.1 Background and Context

The City of Mbabane's journey toward sustainable development reflects broader national commitments to the 2030 Agenda for Sustainable Development. As Eswatini's capital, Mbabane plays a crucial role in demonstrating how urban centers can effectively contribute to national SDG achievement while addressing local development priorities. The city's unique position as both an administrative hub and a growing urban center presents both opportunities and challenges in sustainable development implementation.

The Municipal Council of Mbabane (MCM) has embraced the SDG framework as a comprehensive tool for urban planning and development coordination. This approach recognizes that sustainable development requires integrated solutions that address economic growth, social inclusion, and environmental protection simultaneously. The city's commitment extends beyond mere reporting to active implementation of policies and programs that directly contribute to SDG targets.

The Mbabane approach to the Voluntary Local Review

The MEPD collaborating with MHUD and UNDESA invited local authorities to participate in the SDG Voluntary Local Review (VLR). The objective of the SDG/VLR was to build capacity and facilitate the mainstreaming of the SDGs at Local Level. Government and its partners facilitated capacity building workshops under the theme **“Improved Local and National Government Capacities for Localising SDGs through Voluntary Local reviews in Eswatini”**. The Municipal council of Mbabane did not hesitate to be part of the Voluntary Review, an important initiative to monitor implementation of AGENDA 2030 for SDGs and ensuring aligning to National and global programmes.

2.2 Methodological Approach

This VLR employs a comprehensive methodology that combines quantitative data analysis with qualitative assessment of local initiatives and programs. The data sources include national surveys such as the Eswatini Household Income and Expenditure Survey (EHIES), Multiple Indicator Cluster Survey (MICS), Labour Force Survey (LFS), and various municipal records and reports. This multi-source approach ensures robust data triangulation and comprehensive coverage of all relevant indicators.

The MCM populated the SDGS/VLR data collection tool developed by MEPD and was presented to UN/MHUD/MEPD for discussion. A stakeholder mapping was undertaken to identify stakeholders for the Mbabane SDGs/VLR process. The process of developing the SDGs / VLR report involved sensitisation of staff internally and external stakeholders on the global and national SDG programme, SDGs/VLR process, data collection, stakeholder engagement and desktop reviews. The MCM technical team was provided a data collection tool with baselines of localised indicators to guide data collection. strategies, key programmes and projects to the SDGs, after which SDGs and related projects were prioritised for inclusion in the report. This report details the prioritised SDGs for Mbabane as guided by the local UN/MEPD technical team,

The report utilizes a cluster-based organization that groups related SDGs to facilitate integrated analysis and identify cross-cutting themes. This methodology enables better understanding of interconnections between different development dimensions and supports more effective policy coordination.

Stakeholder Mapping and Engagement

Managers from departments populated the data sheet on the localised indicators and provided qualitative data on the outcomes and trends observed. A validation workshop was held with stakeholders mapped as key informants to the process, the included government, public enterprises, NGOs, Financial institutions, residents, private sector, and other partners.

Data disaggregation by gender, age, and geographic location has been prioritized wherever possible to ensure that the analysis captures differential impacts and experiences across different population groups. This approach aligns with the SDG principle of "leaving

no one behind" and supports evidence-based targeting of interventions to reach the most vulnerable populations.

3. Poverty Cluster Analysis

3.1 Introduction to Poverty Challenges

The Poverty Cluster encompasses SDG 1 (No Poverty) and SDG 2 (Zero Hunger), which address fundamental challenges related to economic deprivation and food security within Mbabane. These goals represent foundational elements of sustainable development, as poverty reduction and food security create enabling conditions for progress across all other development dimensions. The cluster analysis reveals complex patterns of urban poverty that require nuanced understanding and targeted interventions^[1].

Mbabane's poverty profile reflects broader urbanization dynamics, with concentrations of vulnerable populations in specific geographic areas, particularly informal settlements and low-income neighborhoods. According to the Eswatini Household and Demographic Survey 2017, the city's poverty rate of 7.85% is below the national poverty line, while lower than some other urban centers like Nhlanguano (40.03%) and Siteki (20.50%), still represent significant challenges for thousands of residents. More concerning is the finding that 57.7% of residents live below the international poverty line, indicating widespread economic vulnerability despite relatively better performance on national measures.

The multidimensional nature of poverty in Mbabane affects 15.9% of residents, reflecting deficiencies across health, education, and living standards dimensions. This multidimensional perspective reveals that poverty extends beyond income to encompass access to basic services, quality housing, and opportunities for human development. Understanding these interconnected deprivations is essential for designing comprehensive anti-poverty strategies that address root causes rather than symptoms.

Goal 1: No Poverty - Comprehensive Analysis

Current Poverty Status and Distribution

The current poverty landscape in Mbabane presents a complex picture that requires careful analysis to understand both achievements and ongoing challenges. With 7.85% of residents living below the national poverty line, Mbabane performs better than several other urban centers in Eswatini, including Nhlanguano at 40.03% and Siteki at 20.50%. However,

this relative success masks significant challenges when viewed through international poverty measures, as 57.7% of residents live below the international poverty line^{[1][2]}.

The geographic distribution of poverty within Mbabane reveals important patterns that inform targeted intervention strategies. The communities of Msunduza, Manzana, and Fonteyn emerge as areas with higher concentrations of poverty, correlating strongly with infrastructure development levels. This relationship between infrastructure access and poverty outcomes highlights the importance of integrated development approaches that combine social protection with infrastructure investment^[1].

Multidimensional poverty affects 15.9% of Mbabane's population, indicating that poverty extends beyond income to encompass various deprivations in health, education, and living standards. This multidimensional approach provides a more comprehensive understanding of poverty experiences and helps identify households that may not be captured by income-based measures alone. The analysis reveals that approximately 15% of those living below the poverty line experience all dimensions of poverty, including economic, political, social, environmental, and psychological aspects^{[1][2]}.

Social Protection Systems and Coverage

The social protection landscape in Mbabane reflects both existing strengths and significant gaps in coverage and effectiveness. Current data indicates limited systematic coverage of social protection programs, with specific coverage rates for various vulnerable groups not comprehensively documented. This represents a critical information gap that hampers effective program design and resource allocation.



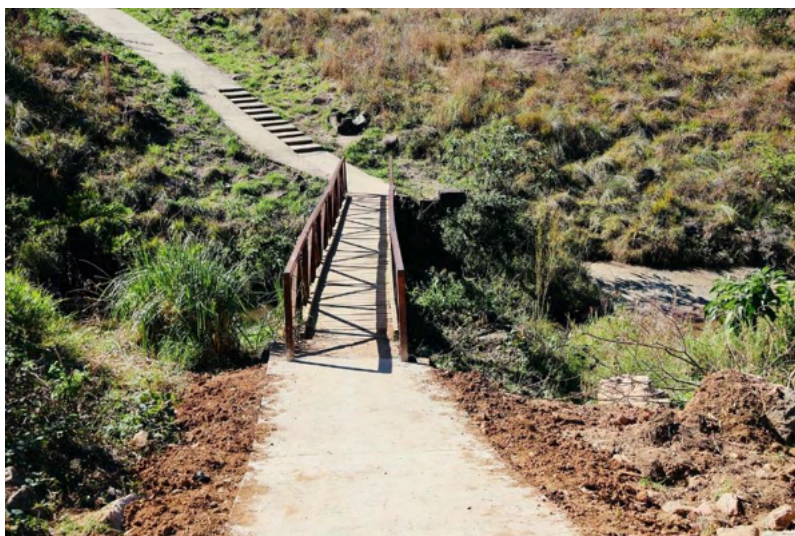
The Municipal Council of Mbabane has implemented several targeted social protection initiatives that demonstrate commitment to supporting vulnerable populations. These include assistance to Orphans and Vulnerable Children (OVCs) and indigent families, with approximately 500 beneficiaries receiving support through backyard gardens that feed nine

social centers daily, serving about 1,300 people per day. Additionally, the council provides food parcels for individuals and families in acute need, representing an important safety net during crisis periods.

Training programs on income-generating projects and livelihood skills, including savings schemes, form part of the council's broader social protection strategy. These programs aim to build sustainable livelihoods rather than providing only temporary relief. Other municipal initiatives include construction of houses for indigent families, provision of start-up capital, vocational training, and payment of tuition fees for poor households. A framework to empower young people is currently under development, which will outsource services to communities and create additional employment opportunities.

Access to Basic Services in Informal Settlements

Informal settlements represent a significant challenge for sustainable development in Mbabane, housing approximately 32% of the city's population. These settlements, including Magwaneni, Malagwane, Zone6c, Mandzana, Sidwashini, Old Makhokholo, Sitibeni, and Fonteyn, have been identified for upgrading through the Urban Development Programme. The concentration of population in informal settlements reflects rapid urbanization pressures and housing demand that exceed formal sector capacity-



Access to basic services in informal settlements remains significantly constrained, with an estimated 19,490 people living in informal settlements having limited access to adequate water, sanitation, electricity, and waste management services. This represents approximately 31%

of Mbabane's total population, highlighting the scale of the challenge. The eastern and southern parts of the city are predominantly characterized by low-cost housing and informal settlements, creating geographic concentrations of service access challenges.

The rapid urbanization driving informal settlement growth creates ongoing pressures for service provision and urban planning. The Municipal Council faces significant challenges in extending basic services to these areas due to irregular settlement patterns, unclear land tenure arrangements, and limited financial resources. However, the identification of specific settlements for upgrading represents an important step toward systematic improvement of living conditions for informal settlement residents.

Goal 2: Zero Hunger - Comprehensive Analysis

Nutritional Status and Food Security

The nutritional status of children in Mbabane reveals concerning patterns that require immediate attention and sustained intervention. Current data indicates that 20% of children under five years' experience undernourishment, which is significantly higher than the rate in Manzini (5.6%). This disparity suggests that specific factors in Mbabane's urban environment may be contributing to higher rates of child undernourishment despite the city's status as the capital.

Stunting affects 20% of children under five in Mbabane, indicating chronic malnutrition that has long-term implications for physical and cognitive development. Wasting occurs in 3.3%

of children, while 10% are overweight, revealing a complex nutritional landscape that includes both undernutrition and emerging problems of overnutrition. This dual burden of malnutrition requires sophisticated programmatic responses that address different nutritional needs simultaneously.

Food security analysis based on the Dietary Diversity Score reveals that 94.7% of households have acceptable dietary diversity, suggesting that most families have access to varied food sources. However, 4.2% of households experience moderate food insecurity, while 1.1% face severe food insecurity. These figures indicate that while acute food insecurity affects a relatively small proportion of households, the underlying nutritional outcomes suggest more complex challenges in achieving adequate nutrition for all family members, particularly children.

Maternal and Child Nutrition Programs

Maternal nutrition programs in Mbabane demonstrate strong coverage in some areas while revealing gaps in others. Iron supplementation reaches 87.5% of pregnant women, while folic acid supplementation achieves the same coverage rate. This high coverage represents significant progress in addressing micronutrient deficiencies that can affect both maternal and child health outcomes. However, zinc supplementation data is not comprehensively available, indicating a potential gap in comprehensive micronutrient support.

The Municipal Council provides monthly supplements to an average of 100 women of childbearing age and lactating mothers, representing a direct municipal contribution to maternal nutrition. This program complements national health system efforts and demonstrates local commitment to addressing nutritional needs. The coordination between municipal and national programs is essential for ensuring comprehensive coverage and avoiding duplication of efforts.

Urban Agriculture and Food Production

Urban agriculture in Mbabane operates within a regulatory framework established by the Urban Government Act 1968 and Town Planning Scheme, which promotes backyard

gardens for food security and livelihood purposes. As Mbabane is not primarily an agricultural town, only backyard gardens are permitted within the urban boundary. This regulatory approach recognizes the importance of urban food production while maintaining urban planning integrity.

Approximately 80% of registered Orphans and Vulnerable Children (OVCs) have access to backyard gardens, either at social centers or their places of residence. This high coverage rate among a vulnerable population demonstrates the potential for urban agriculture to contribute to food security and nutrition outcomes. The integration of urban agriculture with social protection programs creates synergies that enhance overall program effectiveness.

The council also provides immunization services for children under five, primary health care services, weekly food hampers for the most vulnerable OVCs, and daily breakfast and lunch at ten feeding points serving 1,300 children daily. Seedling distribution for backyard gardens among needy households completes a comprehensive approach to addressing food security and nutrition.

3.2 Strategic Initiatives and Programs

Backyard Gardens and Food Production

The backyard gardens initiative represents a cornerstone to addressing food security and nutrition challenges at the household level. This program recognizes that urban agriculture can make significant contributions to dietary diversity, household food security, and income generation even within the constraints of urban land use planning.

The integration of backyard gardens with social centers creates institutional support structures that enhance program sustainability and effectiveness. Social centers serve as hubs for technical assistance, seed distribution, and knowledge sharing among participants. This institutional approach helps build community capacity for urban agriculture while ensuring that programs reach intended beneficiaries effectively.

Food Assistance and Safety Nets

Food assistance programs for vulnerable families during crises provide essential safety nets that prevent acute food insecurity from developing into more severe nutritional problems. This emergency response capability is particularly important in urban contexts where families may have limited alternative food sources during economic shocks.

The daily feeding program serving 1,300 children across ten feeding points represents a significant municipal investment in child nutrition. This program provides both breakfast and lunch, ensuring that children receive adequate nutrition to support learning and development. The scale of this program demonstrates substantial municipal commitment to addressing child nutrition, complementing national school feeding initiatives^[1].

Weekly food hampers for the most vulnerable OVCs provide targeted support for children facing the greatest nutritional risks. This targeted approach recognizes that some children require additional support beyond general feeding programs. The combination of daily feeding at centers with targeted household support creates a comprehensive safety net for vulnerable children^[1].

3.3 Challenges and Constraints

High Living Costs and Service Access

Mbabane being a capital city attracts price pressures that affect the affordability of basic goods and services for low-income households. High living costs in create significant barriers to poverty reduction and food security achievement. These cost pressures are particularly acute for housing, transportation, and food, which represent major components of household budgets for poor families¹.

An estimated thirty-two percent (32%) of residents living in informal settlements face particular challenges in accessing quality services at affordable prices. Informal service providers often charge premium prices for water delivery, waste collection, and other services that are provided through formal systems in other parts of the city. These service access challenges perpetuate poverty by consuming larger proportions of household income for basic needs.

Data Gaps and Monitoring Challenges

Current data does not provide comprehensive coverage for various vulnerable groups, making it difficult to assess program effectiveness or identify gaps in service delivery. Limited disaggregated data by gender, age, and geographic location constrains the ability to understand differential impacts of poverty and food insecurity across different population groups. Strengthening data collection systems represents a critical priority for improving program effectiveness.

3.4 Forward-Looking Strategies

Expanding Social Safety Nets

The expansion of social safety nets for targeted vulnerable groups represents a critical priority for poverty reduction in Mbabane. This expansion should focus on Integration of social safety nets with livelihood development programs to enhance long-term poverty reduction outcomes increasing coverage of existing programs while developing new mechanisms to reach currently unserved populations.

Promoting Small and Medium Enterprises

Small and Medium Enterprise (SME) promotion through financing and training represents an important pathway for sustainable poverty reduction in Mbabane. SME development can create employment opportunities, generate income for entrepreneurs, and contribute

to local economic growth.



Investment in Affordable Housing

Affordable housing investment represents both a poverty reduction strategy and an essential component of urban development planning. Housing costs consume significant proportions of household income for poor families, and housing quality affects health, education, and economic outcomes. Settlement formalization programs for identified informal settlements should combine infrastructure investment with tenure security improvements

4. Social Cluster Analysis

4.1 Introduction to Social Development

The Social Cluster encompasses SDGs 3 (Good Health and Well-being), 4 (Quality Education), 5 (Gender Equality), and 16 (Peace, Justice and Strong Institutions), representing core dimensions of human development and social cohesion. These goals address fundamental aspects of quality of life, human capital development, and social stability that create foundations for sustainable development across all other dimensions^[1].

Mbabane's social development landscape reflects both significant achievements and persistent challenges that require sustained attention and strategic intervention. The city's role as the national capital provides certain advantages in terms of service availability and infrastructure development but also creates unique pressures and expectations for service quality and accessibility. Understanding these dynamics is essential for designing effective social development strategies^[1].

The interconnected nature of social development goals means that progress in one area can reinforce advances in others, while weaknesses in any dimension can undermine overall social development outcomes. This cluster analysis examines these



interconnections while providing detailed assessment of progress, challenges, and opportunities within each goal area^[1].

Goal 3: Good Health and Well-being

Health System Performance and Outcomes

The city hosts the National referral hospital in the country, attracting health clients from across the country. The health system in Mbabane faces significant challenges in delivering quality health services to all residents, as evidenced by concerning maternal and child health indicators. The national maternal mortality ratio of 240 deaths per 100,000 live births represents a substantial public health challenge that requires immediate attention and systematic intervention. This ratio indicates systemic issues in maternal health care delivery that affect the most fundamental health outcomes.

Particularly concerning is the finding that only 17.97% (Multi Cluster Indicator Survey 2017) of births are attended by skilled health personnel, which appears inconsistent with national data indicating that approximately 88.3% of births in urban areas were attended by skilled personnel in 2014. This discrepancy suggests either significant deterioration in service access or data quality issues that require investigation and resolution. Understanding the actual status of skilled birth attendance is critical for maternal health program planning.

Under-five mortality rates in Hhohho stand at 41 per 1,000 live births, which is higher than the regional average of 14 per 1,000 live births for the Hhohho region. This elevated child mortality rate indicates challenges in child health service delivery, including both preventive and curative services. The city's status as the capital makes these outcomes particularly concerning and highlights the need for targeted interventions^{[1][2]}.

Disease Prevention and Control

Communicable disease control in Mbabane requires sustained attention across multiple disease categories. HIV incidence is estimated at 4.2 new infections per 1,000 uninfected population, with approximately 4,000 new cases annually among 15–49-year-olds. This represents a significant public health challenge that requires comprehensive prevention and treatment programs addressing both biomedical and social determinants of HIV

transmission. TB control is particularly challenging in urban settings where overcrowding and air pollution can facilitate transmission. Effective TB control requires coordination between health services, social services, and urban planning initiatives.

Non-Communicable Disease Burden

Non-communicable diseases represent an emerging challenge for Mbabane's health system, with mortality rates of 1,254 per 100,000 for males and 754 per 100,000 for females attributed to cardiovascular disease, cancer, diabetes, and chronic respiratory disease. These elevated rates reflect the growing burden of lifestyle-related diseases associated with urbanization and changing dietary and physical activity patterns.

Tobacco use patterns show that 11.92% of females and 12.69% of males in Mbabane smoke tobacco products daily. While these rates are not exceptionally high compared to other settings, tobacco control remains important for preventing future non-communicable disease burden. The Municipal Council has implemented smoking regulations in public spaces and designated smoking areas in the central business district^{[1][2]}.

Health Service Infrastructure and Access

Mbabane's health infrastructure includes 30 health facilities combining both private and public providers, indicating reasonable facility density for the urban population. The Municipal Council provides free basic health services to the public, complementing national health system service provision. This combination of public and private provision creates opportunities for comprehensive service coverage while requiring effective coordination^[1].

The Municipal Council offers free maternal health services for pregnant women at civic offices and provides antenatal and postnatal services. This municipal commitment to maternal health service provision demonstrates local recognition of maternal health as a priority area requiring special attention and resource allocation^[1].

Access to health services varies significantly across different parts of the city, with informal settlements and low-income areas facing particular challenges in service access. Geographic and financial barriers to health service access contribute to health outcome disparities across different population groups within the city^[1].

Goal 4: Quality Education

Educational Infrastructure and Access

Mbabane's education system demonstrates strong infrastructure development with all schools having access to electricity and water, as required by the Urban Act of 1969 and Building Act of 1969. This universal access to basic infrastructure creates enabling conditions for quality education delivery and represents a significant achievement in educational facility development.



The city hosts twenty-three (23) primary schools enrolling sixteen thousand and forty two16,042 learners (51% girls and 49% boys - Office of the REO)) and fifth15 secondary schools enrolling six thousand and two hundred (6,200) learners (54% girls and 46% boys). The higher proportion of girls in secondary education indicates positive trends in gender parity, though the significant drop in total enrollment between primary and secondary levels suggests challenges in educational transition that require attention.

Teacher-pupil ratios of 1:48 in primary schools and 1:54 in secondary schools exceed the recommended ratio of 40 pupils per class. These elevated ratios reflect urbanization pressures as families migrate to Mbabane seeking better employment opportunities and educational options for their children. While higher ratios can strain educational quality, they also reflect Mbabane's attractiveness as an educational destination.

The lack of comprehensive disability data across all educational levels indicates a significant gap in inclusive education monitoring and planning. Strengthening partnerships with disability organizations is essential for improving data collection and service provision.

Goal 5: Gender Equality

Legal Framework and Policy Environment

Mbabane operates within a comprehensive legal and policy framework for gender equality that includes municipal policies and national legislation. The Municipal Council has established a gender policy and sexual harassment policy, demonstrating local commitment to gender equality. National frameworks include the Sexual Offences and Domestic Violence Act 2018, the revised National Gender Policy (2023), and the National Strategy on Ending Violence in Eswatini (2023).

The existence of legal frameworks represents important progress in establishing normative foundations for gender equality. However, implementation and enforcement of these frameworks require sustained attention and adequate resource allocation. The Municipal Council works closely with the Deputy Prime Minister's Office Gender Unit in running campaigns on gender issues, indicating good coordination between local and national levels.

Policy implementation requires translation of legal commitments into practical programs and services that address gender inequality in daily life. This translation involves building institutional capacity, allocating adequate resources, and developing monitoring systems that track progress in gender equality outcomes.

Gender-Based Violence and Safety

Gender-based violence represents a critical challenge in Mbabane, Reports from the Royal Eswatini Police state that 48% of women reporting having experienced some form of sexual violence in their lifetime. This high prevalence indicates systemic issues that require comprehensive prevention and response strategies addressing both immediate safety and underlying social norms that perpetuate violence against women.

Safety perceptions reveal gender differences in public space access, with 57.81% of females and 60.81% of males feeling safe walking alone in their area. While these rates are relatively similar between genders, they are lower than safety perceptions in other towns, indicating particular safety challenges in Mbabane that affect quality of life and mobility for all residents^{[1][2]}.

The Municipal Council has implemented security measures including cameras and community policing to improve public safety. These infrastructure and programmatic interventions represent important steps toward creating safer public spaces. However, addressing gender-based violence requires comprehensive approaches that combine prevention, response, and support services^[1].

Women's Economic Participation and Leadership

Women's representation in managerial positions in the city is reported to be 24.7%, indicating significant underrepresentation in leadership roles. This level of representation, while concerning, varies significantly across different urban centers in Eswatini, with Manzini showing 68% women in managerial positions. The proportion of women in employment appears relatively balanced, with 12,061 women employed compared to 11,749 men. However, women experience slightly higher unemployment rates at 12.8% compared to 10.4% for men, indicating gender-specific barriers to employment access.

Decision-making autonomy represents another dimension of women's empowerment, with 79.67% of women aged 15-49 in Mbabane making their own informed decisions regarding sexual relations, contraceptive use, and reproductive health care. This relatively high level of autonomy indicates progress in women's empowerment, though the remaining 20% who lack decision-making autonomy require attention.

Goal 16: Peace, Justice and Strong Institutions

Public Safety and Security

Public safety in Mbabane presents mixed outcomes that require sustained attention to improvement strategies. Current data shows that 57.81% of females and 60.81% of males feel safe walking alone in their area, indicating that significant proportions of residents have safety concerns that affect their quality of life and mobility. These safety perceptions are lower than in some other urban areas, suggesting particular challenges in Mbabane.

The Municipal Council has implemented various security measures to address safety concerns, including deployment of security personnel in public open spaces and recreational facilities where most residents visit. Community policing initiatives involve community members in maintaining order and security, creating partnerships between formal security services and local communities.

Technology-based security improvements include the installation of cameras across the city through collaboration between the government, Municipal Council, and the Republic of Taiwan. These cameras serve both security and data collection purposes, representing investment in smart city infrastructure that can enhance both safety and urban management capabilities^[1].

4.2 Strategic Health Initiatives

Maternal and Child Health Programs

Maternal and child health programs in Mbabane require significant strengthening to address concerning health outcomes. Current programs include free maternal health services provided by the Municipal Council, antenatal and postnatal care, and basic health services for the general public. However, the low rates of skilled birth attendance and high maternal mortality suggest that these programs require expansion and quality improvement. Integration of maternal and child health services with nutrition and social protection programs creates opportunities for comprehensive family support. This integration can improve program effectiveness while reducing administrative costs and service delivery complexity for families.

Disease Prevention and Health Promotion

Health promotion initiatives include public awareness campaigns and community engagement programs that address lifestyle factors contributing to disease burden. These programs require community participation and behavior change support to achieve sustainable health improvements.

4.3 Educational Development Strategies

Infrastructure and Quality Improvement

Educational infrastructure development in Mbabane has achieved universal access to electricity and water in schools, creating enabling conditions for quality education delivery. However, addressing high teacher-pupil ratios requires additional classroom construction and teacher recruitment to meet recommended standards. Quality improvement initiatives should focus on teacher training and professional development, curriculum development that meets local needs, and integration of information and communication technology in education delivery. Early childhood education expansion represents an important opportunity for improving educational outcomes and reducing inequality. Current data on early childhood education participation is limited, indicating the need for program development and data collection improvement in this critical area.

4.4 Gender Equality Advancement

Violence Prevention and Response

Gender-based violence prevention requires comprehensive strategies that address both immediate safety and underlying social norms. Prevention programs should include community education, bystander intervention training, and youth programs that promote healthy relationships and gender equality. Community engagement in violence prevention can leverage traditional and religious leadership, men's organizations, and youth groups to promote gender equality and violence prevention. These community-based approaches complement formal service provision and address social norms that perpetuate violence.

Economic Empowerment and Leadership

Women's economic empowerment requires addressing barriers to employment, entrepreneurship, and career advancement. These barriers include skills gaps, access to finance, market access, and workplace discrimination. Comprehensive empowerment programs should address multiple barriers simultaneously. Leadership development programs for women can build capacity for political, economic, and social leadership while creating networks and mentorship opportunities. Workplace equality initiatives require cooperation between municipal government, private sector employers, and worker organizations.

5. Economic Cluster Analysis

5.1 Introduction to Economic Development

The Economic Cluster encompasses SDGs 8 (Decent Work and Economic Growth), 9 (Industry, Innovation and Infrastructure), 10 (Reduced Inequalities), and 17 (Partnerships for the Goals), representing critical dimensions of sustainable economic development and inclusive growth. These goals address fundamental aspects of economic opportunity, technological advancement, and partnership development that enable sustainable development across all other dimensions.

Mbabane's economic development occurs within the context of its role as Eswatini's capital city, creating both opportunities and challenges for sustainable economic growth. The city serves as an administrative and commercial hub, attracting businesses, workers, and investment while also experiencing pressures associated with urbanization and economic transition. Understanding these dynamics is essential for promoting inclusive and sustainable economic development.

The estimated economic output for Mbabane is approximately \$204 million, calculated based on the city's 5% share of national population and assumption that economic output is proportional to population distribution. While this represents a significant economic contribution, the city's potential for economic growth and diversification requires strategic development to ensure that economic benefits reach all residents.

Goal 8: Decent Work and Economic Growth

Employment Landscape and Labor Market Dynamics

Mbabane's labor market demonstrates both achievements and significant challenges in providing decent work opportunities for all residents. The city employs 23,810 people with a relatively balanced gender distribution, including 12,061 women (51%) and 11,749 men (49%). This gender balance in employment represents progress toward gender equality in economic participation, though quality and type of employment require further analysis.

The unemployment rate of 11.7% in Mbabane, while concerning, is lower than unemployment rates in some other urban areas. However, gender disparities in unemployment are evident, with women experiencing a 12.8% unemployment rate compared to 10.4% for men. These disparities indicate gender-specific barriers to employment that require targeted interventions to achieve full employment and gender equality objectives.

Youth unemployment presents particularly acute challenges, with 44.9% of youth aged 15-24 not in education, employment, or training (NEET). This high NEET rate represents significant human capital underutilization and creates risks for social cohesion and economic development. The breakdown shows 46.1% of young men and 43.8% of young women in NEET status, indicating that youth unemployment affects both genders substantially.

Informal Economy and Micro-Enterprise Development

The informal economy in Mbabane plays a crucial role in providing livelihood opportunities, particularly for residents with limited access to formal employment. The city has five designated marketplaces accommodating 708 vendors with renewable annual permits, while an additional 434 vendors operate with approved short-term leases. This formalized approach to informal trade represents good practice in supporting micro-enterprise development while maintaining urban planning standards.

The types of informal businesses vary widely, including spaza shops, car wash services, fruit and vegetable sales, and mobile money services. This diversity indicates entrepreneurial creativity and market responsiveness among informal traders. However, the sustainability and growth potential of these enterprises depend on access to skills training, financial services, and market development support.

Micro, Small, and Medium Enterprises (MSMEs) represent significant potential for economic growth and employment creation in Mbabane. The Hhohho region, which includes Mbabane, hosts approximately 17,000 MSMEs representing 25% of national MSME activity. Given Mbabane's role as administrative and commercial hub, the city hosts an estimated 2,000 - 3,000 MSMEs, indicating substantial entrepreneurial activity.

Tourism Industry Development

Tourism contributes significantly to Mbabane's economy, benefiting from the city's administrative role and strategic location for transportation to neighboring countries. The proximity to Mozambique and South Africa supports tourism development through both transit and destination tourism. The city recorded 276,581 bed nights (ETA Statistical bulletin) in tourist accommodation establishments, indicating substantial tourism activity.

Mbabane hosts twenty-five (25) historical sites that represent important cultural and heritage tourism assets. However, the bed occupancy rate of 28.03% suggests significant potential for tourism growth through improved marketing, service quality enhancement, and product development. Tourism development requires coordination between public and private sectors to realize this potential. The Municipal Council has developed several tourism-related initiatives including a tourism policy, Memorandum of Understanding with Eswatini Tourism Authority, International Leadership Academy program, and Umsebe Accord cultural exchange program.

Economic Infrastructure and Productivity

Economic infrastructure in Mbabane provides a foundation for business development and economic growth. The road network totals one hundred and seventy-seven (177) kilometers, with one hundred and sixty (160) kilometers paved and seventeen (17) kilometers unpaved, indicating well-developed transportation infrastructure. Approximately 56% of streets are classified as access roads, while 44% carry industrial and commuter traffic, supporting both residential and economic activities.

Manufacturing employment represents 5.2% of the workforce, indicating limited industrial development compared to service sector activities. The composition of manufacturing

includes food and beverage processing, printing and stationery, industrial and medical gases, metal and tool manufacturing, and artisanal crafts.

Information and Communication Technology (ICT) infrastructure development represents a priority for economic modernization. The Municipal Council has allocated 4.4% of its total budget **FY2024 - 2025** to ICT development, demonstrating commitment to technological advancement. Recent installation of security cameras infrastructure for business partners and the public supports data collection, service delivery enhancement, and security improvement.

Goal 9: Industry, Innovation and Infrastructure

Infrastructure Development and Maintenance

Infrastructure development in Mbabane has achieved significant progress in basic connectivity and service provision. The road network's high proportion of paved roads (90%) provides good foundations for economic activity and mobility. However, infrastructure maintenance requires ongoing attention, with approximately 74% of access roads and 52% of collector roads needing upgrading in terms of sidewalks, streetlights, and paved shoulders.

Public transport infrastructure includes two state light bus ranks designed to ease traffic congestion in the central business district. Bus terminals and bus stops along public transport routes support mobility for residents who depend on public transportation. However, public transport access and quality require improvement to meet growing urban mobility needs.

The Municipal Council recognizes the need for walkway and cycle path construction either on street shoulders or through dedicated rights of way in public open spaces and parks. This infrastructure development would support sustainable transportation, physical activity, and environmental objectives while improving urban livability.

Industrial Development and Innovation

Industrial development in Mbabane faces challenges related to land availability, infrastructure capacity, and market access. While the city hosts various manufacturing activities, industrial growth requires strategic planning that addresses zoning, infrastructure development, and skills availability. The current industrial base provides foundations for expansion but requires targeted support for growth.

Innovation and technology adoption remain limited, though recent ICT infrastructure investment indicates growing recognition of technology's importance for economic development. Innovation support requires partnerships between municipal government, educational institutions, private sector, and development partners to create enabling environments for technological advancement.

Research and development activities are limited, with budget allocation for research conducted on an as-needed basis rather than through systematic investment. Enhancing research and development capacity requires institutional development, human resource capacity building, and partnership development with research institutions.

Digital Infrastructure and Connectivity

Digital infrastructure development represents a critical priority for economic modernization and competitiveness. The Municipal Council's investment in IT infrastructure for business partners and the public creates foundations for digital service delivery, e-governance, and digital economy development. However, comprehensive digital connectivity requires sustained investment and strategic planning.

Internet access and digital literacy affect both economic opportunities and service access for residents. While specific data on internet penetration is limited, general patterns indicate that digital divides based on income, education, and age affect access to digital opportunities. Addressing these divides requires both infrastructure development and digital skills programs.

Smart city initiatives, including camera installation for security and data collection, represent early steps toward comprehensive smart city development. However, realizing

smart city potential requires integrated planning that combines technology deployment with urban planning, service delivery improvement, and citizen engagement.

Goal 10: Reduced Inequalities

Social Inclusion and Service Access

Social inclusion in Mbabane requires addressing multiple dimensions of inequality including income, gender, age, disability, and geographic location. The city operates nine social centers that serve vulnerable groups, providing important safety nets and support services. However, the coverage and effectiveness of these services require regular assessment and expansion to meet growing needs.

Geographic inequalities within Mbabane affect access to services, economic opportunities, and quality of life. Informal settlements and low-income areas face challenges in service access, requiring targeted interventions that address both immediate needs and underlying development constraints.

Disability inclusion requires strengthening across all sectors and services. Current data on disability prevalence and service access is limited, indicating need for improved data collection and program development. Disability inclusion requires both improvements and specialized services that address specific needs.

Economic Inequality and Redistribution

Economic inequality in Mbabane reflects broader national patterns while presenting specific urban challenges. Income disparities affect access to housing, education, health services, and economic opportunities, creating intergenerational transmission of inequality. Addressing economic inequality requires both redistributive policies and strategies that enhance economic opportunities for low-income residents.

Access to financial services varies significantly across different population groups, with informal traders and low-income residents facing particular challenges in accessing credit, savings services, and insurance. Financial inclusion requires both formal sector development and alternative financial service models that serve excluded populations.

Property ownership patterns contribute to wealth inequality and affect long-term economic security for residents. Land and property access requires attention to ensure that urban development benefits all residents rather than exacerbating inequality through displacement or gentrification.

Discrimination and Social Cohesion

Discrimination monitoring reveals varied experiences across different groups, with 12.21% of women in Mbabane reporting discrimination compared to 0% of men, though these figures require verification. Understanding discrimination patterns requires comprehensive data collection that captures experiences across different identity categories and contexts.

Social cohesion requires attention to prevent discrimination and promote inclusion across all population groups. This includes addressing ethnic, religious, economic, and other forms of discrimination that can undermine social stability and sustainable development. Social cohesion programming should involve community engagement and dialogue facilitation.

Conflict prevention and resolution mechanisms at the community level can address tensions before they escalate into more serious problems. These mechanisms require community participation and coordination with formal justice and security systems.

Goal 17: Partnerships for the Goals

Resource Mobilization and Financial Partnerships

Resource mobilization for sustainable development in Mbabane involves both domestic revenue generation and partnership development with external actors. Total local

government revenue of E177 million includes E150 million from property rates and E14 million from other income sources. This revenue base provides foundations for municipal service delivery but requires expansion to meet growing development needs.

The proportion of municipal budget funded by locally collected rates demonstrates fiscal autonomy, though government subventions of E7 million have been discontinued over the past three financial years. This reduction in national government support requires enhanced local revenue generation and alternative financing mechanisms.

Partnership development with international organizations represents an important strategy for resource mobilization. Current partnerships include collaboration with UN-Habitat and National Disaster Management Agency platforms, providing access to technical assistance and funding for specific development priorities.

Multi-Stakeholder Partnerships

Public-private partnerships represent opportunities for infrastructure development, service delivery improvement, and economic development. However, partnership development requires careful attention to risk allocation, performance monitoring, and public interest protection to ensure that partnerships serve development objectives.

Civil society partnerships provide opportunities for community engagement, service delivery complementarity, and advocacy for development priorities. Strengthening civil society partnerships requires recognition of civil society roles, capacity building support, and institutional mechanisms for collaboration^[1].

Economic Development Strategies

Employment Creation and Skills Development

Employment creation in Mbabane requires coordinated strategies that address both job creation and skills development to ensure that residents can access available opportunities. Youth employment programs represent particular priorities given the high NEET rates among young people. These programs should combine technical skills, training with job placement support and entrepreneurship development.

Entrepreneurship development requires comprehensive support that includes business training, access to finance, market development, and ongoing mentorship. Women's entrepreneurship and youth entrepreneurship require specialized support that addresses specific barriers and opportunities faced by these groups^[1].

MSME Support and Development

MSME support in Mbabane should address multiple constraints that limit enterprise growth and sustainability. Access to finance remains a critical constraint, requiring development of both formal financial services and alternative financing mechanisms such as micro-credit, group lending, and crowdfunding platforms.

Market access support involves helping MSMEs connect with customers, suppliers, and partners while building capacity for market research, product development, and marketing. Digital platforms and e-commerce development can expand market access, particularly for service providers and retailers.

Business development services including accounting, legal advice, marketing support, and technology adoption can enhance MSME competitiveness and sustainability. These services require delivery mechanisms that are accessible and affordable for small enterprises.

Tourism Development and Promotion

Tourism development in Mbabane requires integrated approaches that combine heritage preservation, service quality improvement, marketing, and infrastructure development. The city's 25 historical sites represent significant assets that require preservation and interpretation to attract visitors while preserving cultural heritage.

Service quality improvement in accommodation, restaurants, transportation, and tour services requires both training and standards development. Tourism service providers need support in developing skills, improving facilities, and meeting international service standards.

Marketing and promotion should leverage Mbabane's unique assets including cultural heritage, administrative significance, and geographic location. Digital marketing, partnership with tour operators, and participation in tourism fairs can expand market reach and visitor numbers.

6.Environmental Cluster Analysis

6.1 Introduction to Environmental Sustainability

The Environmental Cluster encompasses SDGs 6 (Clean Water and Sanitation), 7 (Affordable and Clean Energy), 11 (Sustainable Cities and Communities), 12 (Responsible Consumption and Production), 13 (Climate Action), 14 (Life Below Water), and 15 (Life on Land). These goals address fundamental aspects of environmental sustainability, resource management, and climate resilience that provide foundations for all other dimensions of sustainable development.



Mbabane's environmental challenges and opportunities reflect typical urban sustainability issues including water and sanitation access, energy provision, waste management, climate change adaptation and mitigation, and biodiversity conservation. The city's role as national capital creates both additional responsibilities for environmental leadership and access to resources and partnerships that can support environmental initiatives.

Environmental sustainability in Mbabane requires integrated approaches that address interconnections between different environmental systems while considering social and economic implications of environmental policies and programs. This cluster analysis examines progress, challenges, and opportunities across all environmental dimensions while identifying priorities for future action.

Goal 6: Clean Water and Sanitation

Water Service Provision and Access

Water service provision in Mbabane demonstrates significant achievements in expanding access while revealing ongoing challenges in service quality and equity. Currently, seventeen thousand nine hundred and fifty five (17,955) properties have water connections, indicating substantial coverage of formal water infrastructure. However, access patterns vary significantly across different parts of the city, with informal settlements facing challenges in accessing reliable, affordable water services^{[1][2]}.

The Municipal Council of Mbabane does not operate its own water treatment facilities but relies on the Eswatini Water Services Corporation (EWSC) for water treatment and distribution. This arrangement requires coordination between municipal and national levels to ensure adequate service provision and quality control. The dependency on EWSC also affects municipal capacity to address local water challenges independently.

Water quality monitoring represents an important municipal function, with quarterly water quality tests conducted at various water sources including rivers that traverse Mbabane. These tests focus on microbial contamination, chemical pollutants, and physical properties such as turbidity and pH levels. Regular monitoring helps ensure that potable water meets health and safety standards.

Sanitation Infrastructure and Services

Sanitation service provision faces significant challenges in ensuring universal access to adequate sanitation facilities. While data on the proportion of properties with equitable sanitation connections is not comprehensively available, building approval processes

require applicants to specify sanitation connection types, whether septic tanks or sewer reticulation systems.

Hand-washing facilities with soap are available in 30.63% of properties in Mbabane, indicating substantial gaps in basic hygiene infrastructure. The Municipal Council promotes good hygiene through public awareness campaigns, school programs, and community engagement while providing hand-wash stations with soap in all food outlets and municipal offices.

Open defecation prevention represents a priority for public health and environmental protection. The Municipal Council advises using toilets, septic tanks, or sewer reticulation systems while prohibiting open defecation. However, enforcement and monitoring of sanitation practices require strengthening, particularly in informal settlements where access to formal sanitation facilities may be limited.

Wastewater Treatment and Water Resource Protection

Wastewater treatment in Mbabane depends entirely on EWSC facilities, with the Municipal Council coordinating to ensure appropriate wastewater management according to health and environmental standards. The proportion of wastewater safely treated depends on EWSC capacity and treatment processes, highlighting the importance of inter-governmental coordination for environmental protection.



In the 2022/23 financial year, the Municipal Council processed 195 wastewater collection applications and treated 285 loads of wastewater, contributing to reduced risk of water source contamination. These activities represent direct municipal contributions to environmental protection while supporting public health objectives.

Water resource protection requires comprehensive approaches that address both point and non-point sources of pollution. River cleanup and pollution monitoring activities help

protect water quality, though limited data on aquatic ecosystems constrains understanding of environmental impacts and effectiveness of protection measures.

Goal 7: Affordable and Clean Energy

Energy Access and Affordability

Energy access in Mbabane shows substantial progress with 87.54% of households having access to electricity, indicating near-universal electrification in the urban area. This high level of electricity access creates foundations for economic development, education, health service delivery, and quality of life improvements. However, affordability and reliability of electricity supply require ongoing attention.

Clean cooking fuel adoption remains limited, with only 50.71% of households using clean fuels and technology for cooking. This limited adoption indicates continued reliance on traditional biomass and other polluting cooking fuels that affect indoor air quality and contribute to deforestation pressures. Promoting clean cooking requires addressing both affordability and availability constraints.

Energy efficiency and conservation receive attention through public awareness campaigns and municipal facility management, though systematic energy efficiency programs require development. The Municipal Council encourages energy conservation through community engagement and demonstration projects in municipal facilities.

Renewable Energy and Sustainability

Renewable energy development in Mbabane remains limited, though growing recognition of renewable energy benefits creates opportunities for future development. Solar energy potential exists given Eswatini's climate, though systematic assessment and development of renewable energy resources requires technical and financial support.

Energy policy coordination between municipal and national levels affects renewable energy development opportunities. Municipal capacity for energy planning and project development requires strengthening to participate effectively in renewable energy initiatives and advocate for local energy needs.

Clean energy promotion requires addressing both supply-side and demand-side factors including technology availability, financing mechanisms, technical capacity, and consumer awareness. Integrated approaches that combine energy access, affordability, and sustainability objectives can optimize energy sector contributions to sustainable development.

Goal 11: Sustainable Cities and Communities

Urban Planning and Sustainable Development

Urban planning in Mbabane addresses multiple dimensions of sustainable city development including land use planning, infrastructure provision, environmental protection, and social inclusion. The city's land use includes 48% public open space, providing important foundations for environmental sustainability, recreation, and quality of life. However, these spaces lack formal protection status, creating vulnerability to development pressures.

Informal settlement planning represents a critical challenge for sustainable urban development. With 32% of residents living in informal settlements, addressing informal urbanization requires comprehensive approaches that combine infrastructure investment, tenure security, and livelihood development. Nine identified informal settlements are targeted for upgrading through the Urban Development Programme.

Transportation planning requires attention to sustainable mobility options including public transport, walking, and cycling infrastructure. Current planning recognizes the need for walkways and cycle paths, though implementation requires investment in infrastructure and coordination with transportation service providers.

Waste Management and Circular Economy

Waste management in Mbabane demonstrates both achievements and ongoing challenges in creating sustainable waste systems. The city collects 48.4 tonnes of waste daily with 81% coverage, indicating substantial waste collection capacity. Annual landfill incoming waste totaled 15,293 tonnes in the 2024 financial year, representing significant waste generation that requires sustainable management.

Waste management accounts for 17.5% of the municipal budget, indicating substantial resource allocation to waste services. However, landfill capacity constraints and limited waste processing options create challenges for long-term waste management sustainability. Alternative waste management approaches including waste reduction, recycling, and composting require development.

Recycling initiatives include 6,000 tones of recyclable material processed annually through five recycling centers. The European Union provided approximately E4.1 million in 2018 to support waste recycling and composting efforts, demonstrating international partnership potential for waste management improvement. However, recycling awareness and infrastructure require expansion.

Housing and Urban Development

Housing development in Mbabane faces challenges in providing adequate, affordable housing for all residents while managing urban growth sustainably. Housing demand exceeds formal sector supply capacity, contributing to informal settlement growth and overcrowding in existing residential areas.

Title deed access affects housing security and investment incentives for residents. Comprehensive data on property ownership patterns is not available, indicating need for improved property registration and tenure security systems. Secure tenure provides foundations for housing investment and community development.

Urban development coordination between municipal and national levels affects housing policy implementation and resource allocation. Municipal capacity for housing development requires strengthening including technical expertise, financial resources, and regulatory frameworks that support affordable housing provision.

Goal 12: Responsible Consumption and Production

Sustainable Procurement and Resource Management

Sustainable procurement practices in Mbabane operate through established procurement policies and procedures that include annual capacity building workshops for service providers and staff. The Municipal Council maintains a tender board that adjudicates

procurement recommendations according to statutory requirements, ensuring transparency and accountability in procurement processes.

Resource management extends beyond procurement to include energy efficiency, water conservation, and waste reduction in municipal operations. These resource management practices demonstrate municipal leadership in sustainable consumption while reducing operational costs and environmental impacts. Circular economic principles require development in both municipal operations and community engagement. Promoting reuse, recycling, and waste reduction requires education programs, infrastructure development, and partnership with private sector waste management services.

Waste Minimization and Recycling

Waste minimization initiatives in Mbabane include the EU-funded Waste Minimization and Management Project that provided E4.1 million in support for recycling and composting efforts. This project demonstrates potential for international partnership in waste management while building local capacity for sustainable waste systems.

Community engagement in waste recycling includes annual capacity building workshops for target groups focused on waste recycling for economic empowerment. These programs combine environmental objectives with livelihood development, creating incentives for community participation in waste management.

Hazardous waste management requires specialized attention given health and environmental risks. The Municipal Council is constructing a hazardous waste facility to enhance waste management and environmental protection. Current hazardous waste includes 463 fluorescent light bulbs, 6.2kg and 47 liters of chemicals collected from council operations, and 16 tons of healthcare risk waste for incineration.

Goal 13: Climate Action

Climate Change Adaptation and Resilience

Climate change adaptation in Mbabane requires comprehensive planning that addresses both current climate risks and projected future changes. The Municipal Council has developed a Climate Change Strategy that provides strategic direction for climate resilience, urban planning, and risk mitigation. This strategy guides municipal climate action while integrating climate considerations into other planning processes.

Disaster risk reduction strategies address climate-related hazards including floods, droughts, and extreme weather events. The Disaster Risk Management Policy provides frameworks for risk assessment, preparedness, response, and recovery. However, implementation requires adequate resources and coordination between municipal and national disaster management systems^[1].

The Smart City Framework provides opportunities for integrating climate resilience with technological advancement and urban management improvement. Smart city technologies can support climate monitoring, early warning systems, and adaptive management of urban services.

Climate Change Mitigation and Low-Carbon Development

Climate change mitigation requires reducing greenhouse gas emissions from municipal operations and supporting community-level emission reductions. Current mitigation efforts include energy efficiency improvements, waste management optimization, and promotion of sustainable transportation options.

Resource mobilization for climate action includes preparation of concept notes for integrated waste management solutions submitted to UNDP and UN-Habitat. These initiatives demonstrate municipal capacity for climate finance mobilization while building partnerships for climate action implementation.

Budget allocation for climate initiatives totals E1,030,000, representing municipal commitment to climate action. However, climate finance needs exceed current budget allocations, requiring enhanced resource mobilization from national and international sources.

Climate Education and Awareness

Climate education and awareness programs involve community sensitization on climate risks and adaptation strategies. These programs require coordination between municipal government, educational institutions, and community organizations to reach diverse audiences with appropriate messages.

Institutional capacity building for climate action requires training municipal staff, community leaders, and partner organizations in climate science, adaptation planning, and mitigation strategies. Technology transfer and development actions support capacity building while promoting innovation in climate solutions.

Youth engagement in climate action leverages educational institutions and youth organizations to build climate awareness and leadership among young people. School-based environmental programs and eco-clubs provide platforms for youth climate education and action.

Goal 14: Life Below Water

Water Resource Protection and Aquatic Ecosystems

Water resource protection in Mbabane focuses primarily on river systems that traverse the city. Quarterly sampling of Mbabane rivers assesses pollution levels and pH, with current results showing minimal pollution and average pH of 6.5 for Mbabane and Pholinjane rivers. This monitoring provides important baseline information for water resource management.

Aquatic ecosystem conservation requires attention to both pollution prevention and habitat protection. Limited data on aquatic biodiversity and ecosystem health constrains understanding of conservation needs and program effectiveness. Enhanced monitoring and research can support evidence-based aquatic conservation.

Transboundary water resource management involves coordination with downstream water users and regional water management systems. While current pollution levels are minimal, preventing future pollution requires sustained attention to land use planning and pollution control measures.

Pollution Prevention and Water Quality

Pollution prevention in Mbabane's water systems requires integrated approaches that address both point and non-point pollution sources. Municipal wastewater treatment coordination with EWSC helps prevent water pollution while industrial and commercial pollution control requires regulatory enforcement and monitoring-

Stormwater management affects water quality through runoff pollution and erosion control. Urban development planning should incorporate stormwater management systems that reduce pollution while managing flood risks. Green infrastructure approaches can provide multiple benefits for water quality and urban sustainability.

Agricultural pollution prevention requires attention to urban and peri-urban agriculture practices that may affect water quality. Promoting sustainable agricultural practices while supporting urban food production requires technical assistance and farmer education programs-

Goal 15: Life on Land

Biodiversity Conservation and Ecosystem Management

Biodiversity conservation in Mbabane faces challenges related to urban development pressures and limited formal protection mechanisms. Despite representing only 2% of Eswatini's land area, Mbabane hosts 206 plant species representing 6% of national flora, indicating rich biodiversity that requires protection and management.

Public open spaces covering 48% of city land area provide important habitat and ecosystem services, though these areas lack formal protection status. Developing formal protection mechanisms for critical biodiversity areas can ensure long-term conservation while supporting urban sustainability objectives.

Wetland conservation faces particular pressures, with 51% of the city's wetlands (320 hectares) affected by development according to a 2022 survey. Wetland protection requires regulatory mechanisms, restoration programs, and development planning that recognizes wetland values for flood control, water quality, and biodiversity.

Invasive Species Control and Forest Management

Invasive alien plant species (IAPS) represent a significant challenge for biodiversity conservation and ecosystem management in Mbabane. Current estimates indicate that 2,723.70 hectares or 40% of the city's land area is affected by invasive species infestation. This extensive infestation requires systematic control programs and ongoing management.

The Municipal Council allocates approximately E1.2 million annually for invasive species prevention and control, though the Integrated Development Plan (2024-2029) identifies need for approximately E40 million to effectively control IAPS based on 2024 baseline assessments. This funding gap constrains invasive species management effectiveness.

Forest ecosystem management requires attention to both conservation and restoration of degraded areas. While Mbabane lacks significant forest cover, urban tree planting and green space management contribute to ecosystem services and urban sustainability. The Municipal Council has prioritized establishing a botanical garden in the Integrated Development Plan.

Land Degradation and Restoration

Land degradation assessment requires comprehensive evaluation of soil quality, erosion rates, and ecosystem health across different land uses in Mbabane. Current data on land degradation extent is limited, though invasive species infestation can serve as an indicator of ecosystem degradation affecting 40% of city land area.

Land restoration programs should address both ecological restoration and productive land use improvement. Restoration activities might include invasive species removal, native vegetation establishment, soil conservation, and sustainable land management practice promotion.

Urban agriculture and green infrastructure development can contribute to land restoration while providing multiple benefits including food security, livelihood development, and environmental service provision. Integrated land use planning can optimize restoration outcomes while supporting sustainable development objectives.

6.2 Environmental Management Strategies

Integrated Water Resource Management

Integrated water resource management in Mbabane requires coordination between water supply, sanitation, stormwater management, and water resource protection. This integration can optimize water system efficiency while addressing multiple water-related challenges simultaneously.

Demand management strategies including water conservation, efficiency improvement, and alternative water source development can enhance water security while reducing environmental impacts. Rainwater harvesting, greywater recycling, and water-efficient technologies represent opportunities for demand management.

Water governance requires effective coordination between municipal and national water authorities while ensuring community participation in water resource management decisions. Transparent and accountable water governance supports sustainable water resource management and service delivery.

Circular Economy and Waste Management

Circular economy development in Mbabane requires systemic approaches that minimize waste generation while maximizing resource recovery and reuse. Extended producer responsibility programs can shift waste management costs to producers while incentivizing design for durability, repairability, and recyclability. Community-based waste management initiatives can leverage local knowledge and capacity while providing livelihood opportunities for waste workers.

Climate Resilience and Adaptation

Climate resilience building in Mbabane requires comprehensive approaches that address infrastructure resilience, ecosystem-based adaptation, and community preparedness. Resilience building should integrate climate considerations into all municipal planning and investment decisions.

Early warning systems for climate hazards require integration of meteorological monitoring, communication systems, and emergency response procedures. Community-based early warning can enhance system effectiveness while building local preparedness capacity.

Nature-based solutions including green infrastructure, ecosystem restoration, and sustainable land management can provide climate adaptation benefits while supporting biodiversity conservation and community livelihood objectives. These solutions often provide cost-effective alternatives to built infrastructure.

6.3 Strategic Recommendations and Way Forward

- Health system strengthening represents a critical immediate priority given concerning maternal mortality rates and low skilled birth attendance that require emergency attention and systematic intervention.
- Social protection system expansion should prioritize reaching vulnerable groups not currently covered by existing programs while strengthening delivery mechanisms for current beneficiaries.
- Youth employment creation requires immediate attention given the 44.9% NEET rate among youth aged 15-24. Emergency youth employment programs should combine immediate job creation with skills development and entrepreneurship support to address both short-term and long-term youth development needs.
- Institutional capacity building, infrastructure development, and program scaling that supports sustainable development across all goals.
- Informal settlement upgrading represents a critical medium-term investment that can address multiple development challenges simultaneously. Comprehensive upgrading should combine infrastructure development with tenure security, livelihood support, and social service provision.

- Economic diversification through MSME support, tourism development, and industrial growth can enhance employment opportunities while building economic resilience. These investments require coordination between municipal government, private sector, and development partners.
- Strengthen existing partnerships with UN-Habitat, UNDP, and other international organizations to provide technical assistance and financial resources-
- Municipal networks and city-to-city partnerships can facilitate knowledge transfer while building solidarity among cities facing similar development challenges. Public-private partnerships, corporate social responsibility programs, and inclusive business models can leverage private sector resources and expertise for sustainable development.

7. Conclusion

The City of Mbabane's journey toward achieving the Sustainable Development Goals reflects both significant progress and persistent challenges that require sustained commitment, strategic investment, and collaborative action.

The cluster-based analysis reveals important interconnections between different development dimensions that require integrated approaches rather than sectoral interventions. Poverty reduction requires coordination with health, education, and economic development initiatives. Environmental sustainability depends on social inclusion and economic development that provides alternatives to unsustainable practices. Gender equality requires attention across all sectors and development programs.

Mbabane's achievements include substantial infrastructure development, progress in educational access and quality, economic diversification, and institutional development that provides foundations for sustainable development. However, concerning health outcomes, youth unemployment, environmental degradation, and persistent inequalities require urgent attention and strategic intervention-

The forward-looking strategies outlined in this review provide roadmaps for addressing identified challenges while building existing strengths. Implementation of these strategies

requires enhanced resource mobilization, strengthened partnerships, and institutional capacity development that can sustain progress toward SDG achievement.

Ultimately, Mbabane's success in achieving the SDGs will depend on the collective commitment of municipal government, national authorities, civil society, private sector, and citizens working together toward shared vision of sustainable and inclusive urban development. This VLR provides both baseline assessment and strategic guidance for this collaborative effort while demonstrating municipal leadership in global sustainable development commitments.

The experience of developing this VLR also demonstrates the importance of systematic data collection, analysis, and reporting for effective development management. Continued investment in monitoring and evaluation systems will enhance the city's capacity for evidence-based planning while supporting accountability and transparency in development governance.

As Mbabane continues its sustainable development journey, regular assessment and adaptive management will be essential for responding to changing conditions, emerging challenges, and new opportunities. The VLR process should become an institutionalized practice that supports continuous improvement in development planning and implementation while maintaining focus on the goal of sustainable and inclusive development for all residents.