EDI Global

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Final Evaluation Report

Sustainable and Efficient Transport Infrastructure Portfolio Evaluation

On behalf of TradeMark Africa

March 10th, 2025

Executive Summary

This evaluation report presents an independent assessment of the Sustainable and Efficient Transport Infrastructure Portfolio implemented by TradeMark Africa (TMA) between 2017 and 2023 (TMA's Strategy 2 period). The evaluation focuses on four major projects making up the portfolio which was evaluated: the Goli/Mahagi One Stop Border Post (OSBP), the Nimule/Elegu OSBP, the Mombasa Roads project and the Hargeisa Bypass. The report evaluates the portfolio's effectiveness, impact, efficiency, relevance, and sustainability, in line with TMA's goal to reduce barriers to trade and enhance business competitiveness across East Africa.

Key Findings

Relevance

The TMA transport portfolio aligns well with both the strategic objectives of TMA's Strategy 2 and broader regional development goals. TMA's interventions are closely tied to the priorities of the East African Community (EAC), the African Continental Free Trade Agreement (AfCFTA), and the specific needs of the trade corridors in target regions. The Mombasa Roads project, for example, directly supports the Northern Corridor, handling a significant portion of East Africa's trade, while the OSBP projects in Goli/Mahagi and Nimule/Elegu address critical bottlenecks at border crossings. These projects are crucial for enhancing regional economic integration and facilitating smoother trade flows between East African countries. Furthermore, the portfolio demonstrates responsiveness to climate resilience goals, as seen in the improved drainage systems in Mombasa and the environmentally conscious design of the Hargeisa Bypass.

Effectiveness

The transport infrastructure portfolio has successfully reduced transport times and costs, significantly improving trade efficiency and regional integration during the Strategy 2 period. This follows on from impactful transport infrastructure projects that TMA funded in Strategy 1. At the Goli/Mahagi OSBP, the time taken to cross the border was reduced by 58%, while at the Nimule/Elegu OSBP crossing times were cut by 83%. Over the evaluation period, Mombasa Roads saw a 46% reduction in travel time, and the Hargeisa Bypass reduced travel times by 25%. These reductions in time were accompanied by significant cost savings. In Mombasa, transport and clearance costs decreased by 62%, while in Somaliland, the reduction was 40%. At the Goli OSBP, there was also a notable reduction in bribes and facilitation fees, with a reported 96% drop in these informal payments. The improvements in efficiency have had a positive impact on trade flows, market access, and the overall functioning of regional trade corridors.

Efficiency

The transport portfolio was largely delivered on time and within budget, although some projects experienced delays and subsequent cost escalations. For instance, the Mombasa Roads project, while successfully upgrading key roads, faced delays on the Magongo Road section. Similarly, the Goli/Mahagi OSBP was divided into three phases due to budget constraints, with the first phase completed later than planned. Despite these challenges, the projects were found to have generally achieved their intended objectives, such as improving traffic flow and reducing congestion. TMA demonstrated good resource management by prioritising high-impact interventions and leveraging available funding efficiently, though some inefficiencies, particularly in material supply and resource allocation, were noted in a few projects reviewed.

IMPACT

The portfolio has contributed to economic benefits, including increased trade volumes, improved market efficiency, and job creation. In Mombasa, in 2024 the port experienced a 100% growth in cargo volumes compared to 2014, and at the Goli-Mahagi OSBP, trade volumes doubled between 2019 and 2022. These increases in trade have been directly linked to the TMA-supported infrastructure improvements that have streamlined border operations and enhanced regional connectivity. Additionally, the infrastructure projects have had positive social impacts. The reduction in journey times and transport costs has made it easier for small-scale traders, including women, to engage in cross-border trade. The Hargeisa Bypass, for example, has facilitated a 44% growth in Somaliland's livestock exports, while the Mombasa

project has significantly improved local access to goods and services.

Further transport interventions have boosted employment and local economies, with 59% of the Mombasa households surveyed through this evaluation reporting improved job opportunities, though benefits were greater for men (66%) than women (44%).

SUSTAINABILITY

The sustainability of the transport infrastructure portfolio is evident in the long-term benefits it offers for regional trade and economic development. The evaluation found evidence that the infrastructure upgrades have enhanced the efficiency of transport networks, reduced congestion, and lowered costs for businesses, particularly small traders. In Goli-Mahagi OSBP, previous studies reported a reduction in customs clearance times by 40–80%, while in Nimule-Elegu OSBP, studies demonstrated reductions in transport time, congestion, traffic jams, waiting times, and border clearance time.

The integration of climate resilience features, such as drainage systems in Mombasa and the consideration of sustainable road designs in Hargeisa, ensures that these projects will continue to support economic growth in the long term. However, challenges remain, particularly in the form of ongoing resource constraints by partner agencies to fund long-term maintenance and the need for sustained capacity-building among local stakeholders to maintain and manage the infrastructure effectively.

CONCLUSIONS AND RECOMMENDATIONS

The TMA's transport infrastructure portfolio has contributed to reducing transport costs and times, improving trade efficiency, and supporting regional integration. The portfolio has contributed positively to economic growth, job creation, and local economic development, with a particular focus on facilitating small-scale traders and women entrepreneurs.

A summary of our recommendations is that the TMA:

- Should continue aligning its transport infrastructure interventions with national, regional, and continental strategies, such as the EAC and AfCFTA, while strengthening monitoring and evaluation frameworks to better attribute economic, social, and environmental impacts. Enhanced collaboration with regional bodies will refine project objectives and improve long-term effectiveness.
- Adopt more inclusive and sustainable infrastructure approach especially regarding climate resilience. Climate resilience measures should be expanded to support all stakeholders, particularly MSMEs and marginalised groups, with early engagement to ensure infrastructure meets their needs. Inclusive design elements, such as non-motorised transport facilities, signage, parking, and designated bus stops, should

be integrated to improve accessibility. Strengthening local engagement will also create economic opportunities and amplify infrastructure impact.

- Look to collaborate with a wider network of stakeholders. Long-term sustainability requires stronger collaboration with national governments, funding partners, and regional institutions. TMA's evolving funding strategy, including Trade Catalyst Africa, offers an opportunity to address infrastructure maintenance challenges. Exploring user-fee models for selected Strategy 2 investments could provide an alternative funding source, while incorporating maintenance budgets into project plans will ensure smooth transitions to national or local management. Continued training and capacity-building will equip local stakeholders with the skills to maintain infrastructure effectively. TMA is adopting a new model for infrastructure funding in Strategy 3 through Trade Catalyst Africa. Through brokering in sources of external investment alongside its own grant funding the potential for scale-up and improved sustainability prospects for TMA projects are considerable.

For OSBPs, while completing physical infrastructure remains critical, soft infrastructure improvements—such as IT systems, staff training, and institutional capacity-building—should be prioritised to enable functional operations. Integrating long-term traffic projections and phased land allocation will help sustain reductions in border crossing times and prevent congestion as trade volumes grow.

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ABBREVIATIONS AND ACRONYMS

AfCFTA	African Continental Free Trade Agreement
CAPI	Computer Assisted Personal Interview
CBT	Cross Border Traders
CCTO	Central Corridor Transport Observatory
CFS	Container Freight Station
DRC	Democratic Republic of Congo
EAC	East Africa Community
EATN	East Africa Trade Network
EQ	Evaluation Questions
FCDO	Foreign, Commonwealth and Development Office
FGDs	Focus Group Discussions
GHG	Greenhouse Gas
IBM	Integrated Border Management
ICT4T	Information and Communication Technology for Trade
IDIs	In-depth Interviews
IO	Intermediate Outcome
KeNHA	Kenya National Highways Authority
KEPSA	Kenya Private Sector Alliance
KPA	Kenya Ports Authority
KIIs	Key Informant Interviews
MSMEs	Micro, Small and Medium Enterprises
NCTO	Northern Corridor Transport Observatory
NTBs	Non-Tariff Barriers
NTFC	National Trade Facilitation Committee
NOC	National Oversight Committee
OSBPs	One Stop Border Posts
PARS	Project Appraisal Reports
PPD	Public Private Dialogue
STR	Simplified Trade Regime
TMA	TradeMark Africa
ToC	Theory of Change
TOR	Terms of Reference
UK	United Kingdom

1. INTRODUCTION

In July 2024, TradeMark Africa (TMA) contracted EDI Global to undertake an independent evaluation of the organisation's Sustainable and Efficient Transport Infrastructure Portfolio. This draft report presents the key findings from this independent evaluation. The report is structured to answer the main evaluation questions proposed by TMA in the evaluation's terms of reference (TOR) and finalised during the inception phase. The main report focuses on presenting the evidence gathered using the framework of the evaluation questions with additional detail provided as annexes. The report is structured as follows:

- ✓ **Section 2** provides a broad overview of the evaluation approach.
- ✓ **Sections 3 to 7** present the key findings for each evaluation question in the five OECD-DAC categories against which the transport portfolio was evaluated, namely relevance, effectiveness, impact, efficiency, and sustainability.
- ✓ **Section 8** offers draft conclusions and recommendations from the evaluation.
- ✓ **Six annexes** with additional information are presented and referenced in the report.

1.1. *CONTEXT*

TMA is an aid-for-trade organisation that was established with the aim of growing prosperity across Africa through increased trade. TMA's Theory of Change (ToC) is anchored on two strategic outcome areas: (i) Outcome 1 – Reduced Barriers to Trade; and (ii) Outcome 2 – Improved Business Competitiveness. As such, all TMA's interventions sit under one or both broad outcome areas. TMA implemented its Strategy 2 programme from July 2017 to June 2023 with the intermediate impact goal of increasing trade in the countries and regions that it operates.

TMA's approved MEL Strategy[1] outlines the corporate ToC, results chain and nested ToCs for each corporate intermediate outcome (IO).[2] The development of the IO-level ToCs was an intentional step by TMA to understand and account for change that specific portfolios and projects can directly contribute to. The MEL Strategy posited that higher level impact such as *"Sustainable, Inclusive Prosperity"* and outcomes such as *"Reduced Barriers to Trade"* are a multi-generational endeavour in Africa, to which TMA is one of many contributors.

TMA has therefore shifted focus to the parts of the impact pathways over which it believes it has more influence, enabling it to place its activities and outputs in the context of the higher-level changes it seeks to achieve. Sustainable and efficient transport infrastructure was a cornerstone of TMA's overarching Theory of Change (TOC) for Strategy 2, articulated specifically as IO 1.1. This IO covers all TMA's hard infrastructure investments such as the development and upgrading of One Stop Border Posts (OSBPs), small-scale road infrastructure projects, and investing in improvements at East African sea ports and lake ports. In delivering these projects, TMA works in partnership with East African government ministries, departments, agencies (MDAs) to deliver transport infrastructure improvements.

One of the most significant barriers to trade in Africa has been the high cost and long duration of transport, largely caused by congestion and inefficiencies in the transport network. Under TMA, infrastructure

[1] TMA's MEL Strategy was approved by the TMA Council in July 2020.

[2] TMA had six intermediate outcome (IO) areas in Strategy 2: IO1.1 – Sustainable and Efficient Transport Infrastructure; IO1.2 – Improved Trading Standards and SPS Measures; IO1.3 – Effective Trade Systems and Procedures; IO1.4 – Improved Trade Regulatory Environment; IO2.1 – Increased Trade Capacity of East African Businesses; and IO2.2 – More Inclusive Trade.

investments have been strategically distributed across the region, focusing on two main areas: the primary intra-East African Community (EAC) corridors and the border areas between the EAC and neighbouring countries. The Northern Corridor, which connects the Port of Mombasa to the Great Lakes and beyond, facilitates nearly two-thirds of the region's trade and serves as a vital economic development axis. Similarly, substantial support has been directed toward the Central Corridor, extending from Dar Port to the Great Lakes, due to its critical role in East African regional integration and economic growth.

Through its projects under this IO, TMA has delivered a wide array of activities. The transport infrastructure portfolio spans more than 10 countries in East and Central Africa and includes significant improvements in ports, roads, border crossings, and logistics facilities. Designed to tackle one of East Africa's most pressing trade challenges—the high transport costs and extended transport times caused by network congestion and inefficiencies—this portfolio plays a crucial role in enabling regional trade and integration.

Prior to the Strategy 2 period, TMA has been involved in supporting transport infrastructure programmes which have yielded positive impacts. For example, the Busia OSBP (Kenya-Uganda border) completed in 2018, has resulted in dwell time reduction on the Uganda side from over 14 hours (2011) to 220 minutes (2017).[3] Similar effects were seen in the Mirama Hills / Kagitumba OSBP (Uganda-Rwanda border) which was completed in 2017, and experienced increased traffic flows (+157% in Rwanda) but reduced dwell times (72% time saving on the Rwanda side).[4] Other examples of transport infrastructure projects concluded prior to the Strategy 2 period are:

- ✓ Taveta / Holili OSBP (Tanzania-Kenya border);

1.2. *Evaluation Objectives*

The objectives of this portfolio evaluation can be categorised into four broad areas:

1. **Assess the contribution of the portfolio to reducing transport time and costs**: The evaluation aims to determine the extent to which TMA's transport infrastructure portfolio has contributed to reducing high transport costs and time, which are key barriers to trade in the region. The focus will be on the understanding the impact of key interventions such as One Stop Border Posts (OSBPs) and road improvements. The four evaluable projects (two OSBP and two roads) will be the lens through which the evaluation team looks at the transport infrastructure portfolio.

2. **Test key assumptions in the portfolio Theory of Change**: The evaluation will test the extent to which the underpinning assumptions in the portfolio level ToC held true in practice (see Section 3.1). This includes examining the effectiveness of interventions in achieving outcomes such as more efficient transport systems and improved competitiveness. This testing is critical for understanding the mechanisms through which change happens in the portfolio and refining the ToC, using evidence, so that it is fit-for-purpose for Strategy 3.

3. **Evaluate Broader Outcomes and Impacts**: To the extent possible, the evaluation will explore the broader social, economic, and environmental impacts of the transport infrastructure portfolio, including climate change adaptation, gender inclusion, and poverty reduction. It will look beyond the direct results of transport efficiency and to assess the observable effects on these cross-cutting issues.

[3] AUDA-NEPAD, One-Stop Border Post (OSBP): Status Report, November 2024.
[4] AUDA-NEPAD, One-Stop Border Post (OSBP): Status Report, November 2024.

4. **Provide Recommendations for Improvement**: The evaluation will produce practical recommendations to enhance the portfolio's effectiveness in promoting trade and regional integration in Strategy 3. This includes identifying good practices and lessons learned, which will inform future investments and programming.

1.3. *Evaluation Scope*

The evaluation TOR specified the evaluable projects to be included in this evaluation. These were identified by an evaluability assessment commissioned by TMA which was conducted between November 2022 and March 2023. This used a multi-step methodology to develop the shortlist of evaluable projects. The key steps in the assessment included:

- ✓ **Assessment of Plausibility and Relevance** - Each project was evaluated for its relevance to Intermediate Outcome 1.1 (sustainable and efficient transport infrastructure) to determine if it could contribute to the evaluation.
- ✓ **Project Completion Timing** - Projects were reviewed based on their expected completion dates to ensure they would be ready for evaluation. Projects scheduled for completion after 2025 were excluded from immediate evaluation, as stakeholders required more timely results.
- ✓ **Data Availability and Quality** - The availability and quality of quantitative and qualitative data (baseline, midline, and endline data) were assessed. Projects with sufficient and reliable data for evaluation were prioritised. If data was insufficient, the project was either excluded or considered for qualitative assessment.
- ✓ **Stakeholder Consultation** - A preliminary findings workshop in February 2023 gathered input from TMA staff and stakeholders, resulting in the identification of five projects, though one (Kalundu Port) was found to have significant data availability challenges and was therefore excluded from the final evaluation.

Through this process, four fully evaluable projects were shortlisted: **Mahagi OSBP / Goli OSBP; Nimule OSBP / Elegu OSBP; Mombasa Roads; and Hargeisa Bypass**. These projects were deemed to have a mix of relevance, readiness, and available data for evaluation. A brief overview of each of these projects is presented in Table 1.

Table 1: Overview of Evaluable Projects

Project Name	Brief Description
Mahagi OSBP (DRC) / Goli OSBP (Uganda)	The project upgraded One Stop Border Posts (OSBPs) between the Democratic Republic of Congo (DRC) and Uganda, with the objective of facilitating more efficient cross-border trade and transport. The infrastructure, IBM and training activities have all been completed.
Nimule OSBP (South Sudan) / Elegu OSBP (Uganda)	It enhanced the OSBPs between South Sudan and Uganda, with the aim of reducing border crossing times and improving trade flow along this crucial regional corridor. The infrastructure accommodation and warehouses are complete. The integrated border management processes are minimal, but training and capacity building activities have taken place.

Mombasa Roads (Kenya)	This initiative constructed and upgraded key road networks around the Port of Mombasa, Kenya, with a view to improving access and reducing congestion. The project covered approximately 8 km of road upgrades. It includes four distinct road investment projects around key trade routes in Mombasa: ✓ Airport Road / Port Reitz Road; ✓ Magongo Road; ✓ Kipevu Road; and ✓ Mbaraki Road / Bamburi Drainage Outfall.
Hargeisa Bypass (Somaliland)	The construction of a 22 km bypass in Hargeisa, Somaliland, diverted traffic from the city centre with the goal of improving transport efficiency along the Berbera Corridor.

Use the evaluability assessment criteria, a number of project types were deemed as 'unevaluable'. These included projects falling into the following categories:

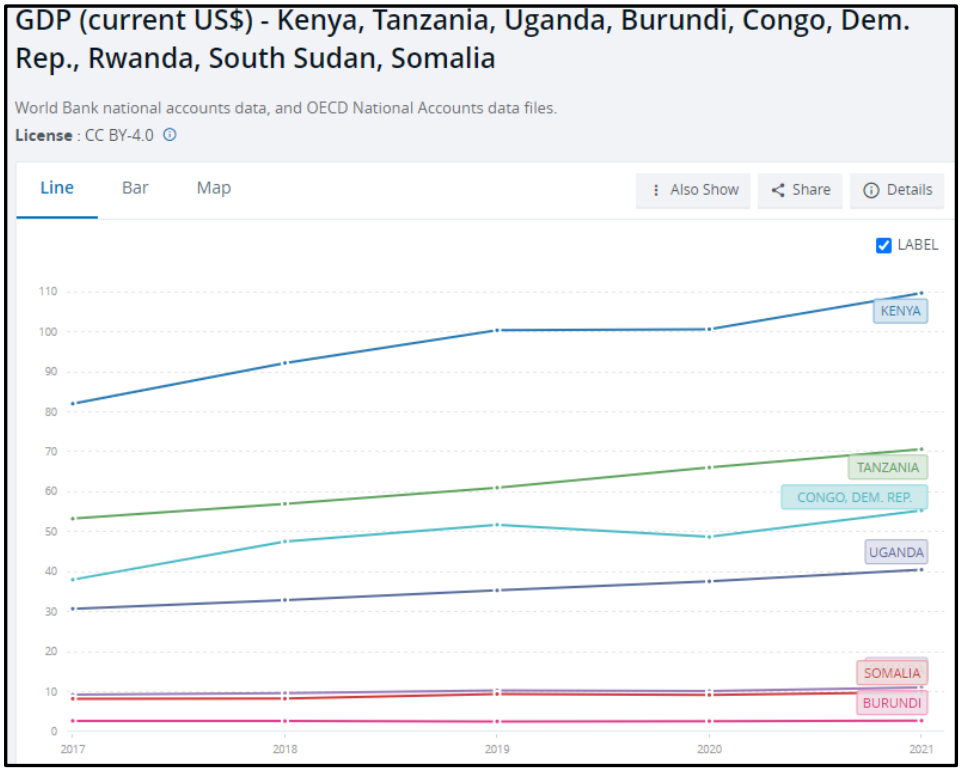
- ✓ **Market Construction** *(Moyale construction work – Ethiopia, Busia OSBP infrastructure works – Kenya, Tog Wajaale OSBP - Somaliland).* These interventions were deemed as less likely to impact on reduced time and cost of cross-border trade and more on improving business competitiveness. Market construction interventions were housed under IO 1.1 as they related to infrastructure rather than softer interventions.
- ✓ **Studies, consultancies / initial design type interventions** *(Mombasa Port Productivity Improvements – Kenya, OSBP Study – Malawi, Lake Kivu Harbour Facilities and Public Private Partnership – Rwanda).* These interventions were deemed as preliminary steps towards reducing the time and cost of trade but were not considered sufficient on their own to make an impact at IO level. This grouping also included interventions that were categorised as "unfinished business", where more substantial phases need to be implemented, but for which funding was uncertain at present (e.g. Jijiga ICD – Ethiopia).
- ✓ **Full cross border benefits cannot be realised due to funding uncertainty/shortages for cross border connected projects** (e.g. *Ntoroko Lake Port Infrastructure Upgrade – Uganda, Rubavu and Ruzisi Ports – Rwanda, Ruzizi OSBP – DRC and Rusizi OSBP – Rwanda*).
- ✓ **Interventions evaluated under Phase 1**, which only had relatively minor additional investments under Phase 2 (*Malaba OSBP – Kenya & Uganda*).

1.4. *Regional Context*

The period of TMA's Strategy 2 (2017-2023) can be characterised as a period of economic and trade growth for countries within the East African Community (EAC). According to the World Bank's Development Indicators, the total GDP (current US$) in real terms for the region grew from $224 billion to $325 billion (+45.5%) from 2017 to 2022 (see Figure 1).[5] Although countries suffered a decline in GDP growth rates in 2020 due to COVID-19, they experienced a bounce back in subsequent years.

[5] GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for the depreciation of fabricated assets or for the depletion and degradation of natural resources. Data are in current USD. Dollar figures for GDP are converted from domestic currencies using single-year official exchange rates. For a few countries where the official exchange rate does not reflect the rate effectively applied to actual foreign exchange transactions, an alternative conversion factor is used.

Figure 1 GDP (Current US$) for EAC Countries.



Source: Word Bank Development Indicators

The growth in GDP for EAC countries was mirrored by average increases in import and export volumes during this period. For the period of 2017 to 2021, imports increased by 9.1% while exports increased by 2.7% for EAC countries. The breakdown of import and export volumes by EAC country are presented in Figure 2 and Figure 3.[6] Although the overall trend shows increases in import and export volumes for EAC countries, the trend for imports and exports in the EAC was more volatile due to COVID-19. Import and export volumes for most EAC countries declined in 2020 and 2021 compared to 2019 levels.

[6] Import / export volume indexes are derived from the United Nations Conference on Trade and Development's (UNCTAD's) volume index series and are the ratio of the import / export value indexes to the corresponding unit value indexes. Unit value indexes are based on data reported by countries that demonstrate consistency under UNCTAD quality controls, supplemented by UNCTAD's estimates using the previous year's trade values at the Standard International Trade Classification three-digit level as weights.

Figure 2 Import Volume Index for EAC Countries (2017-2021).

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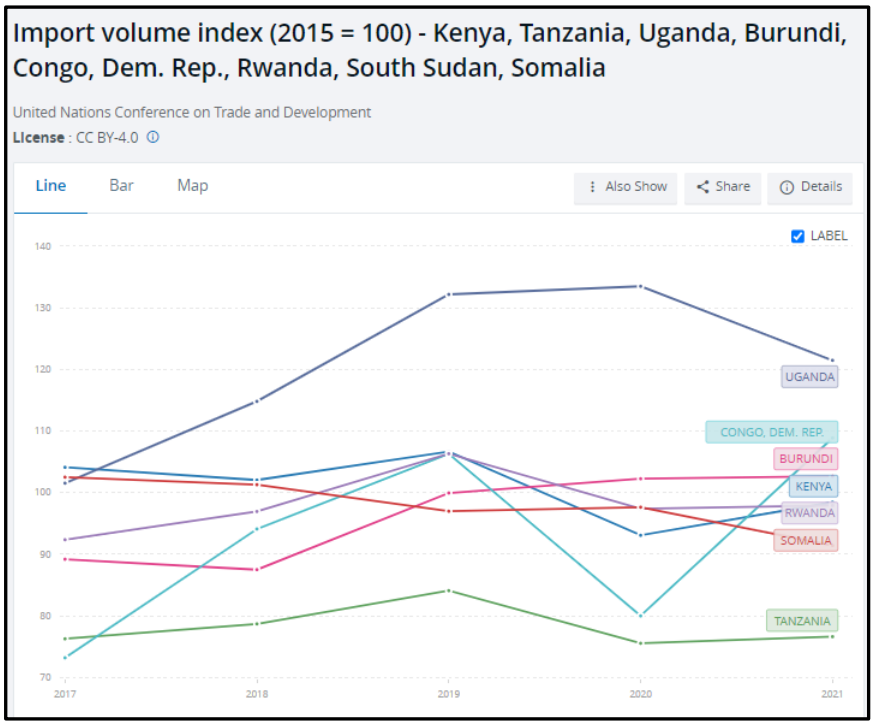
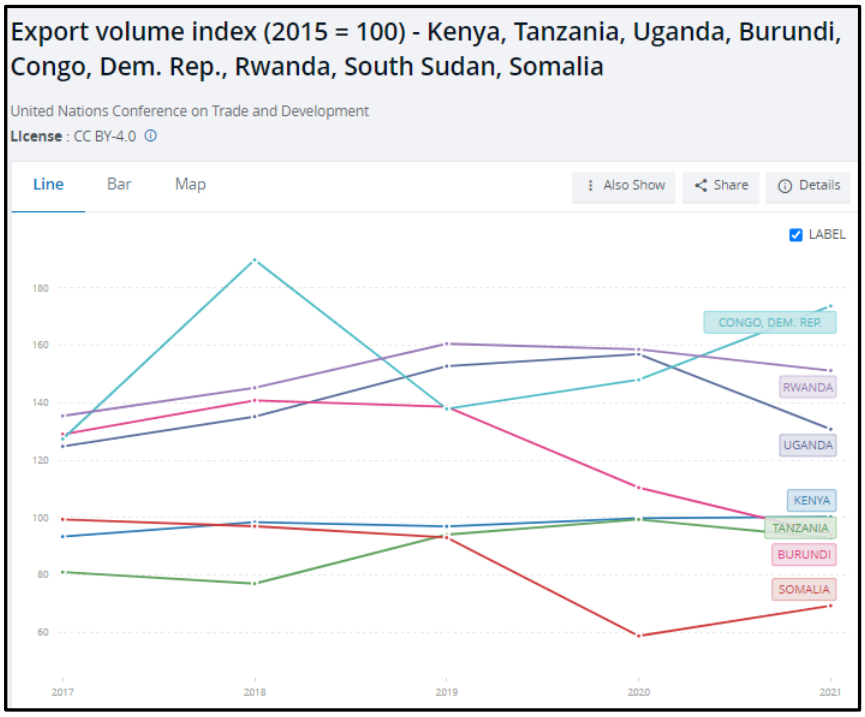


Source: World Bank Development Indicators

Figure 3 Export Volume Index for EAC Countries (2017-2021).



Source: World Bank Development Indicators

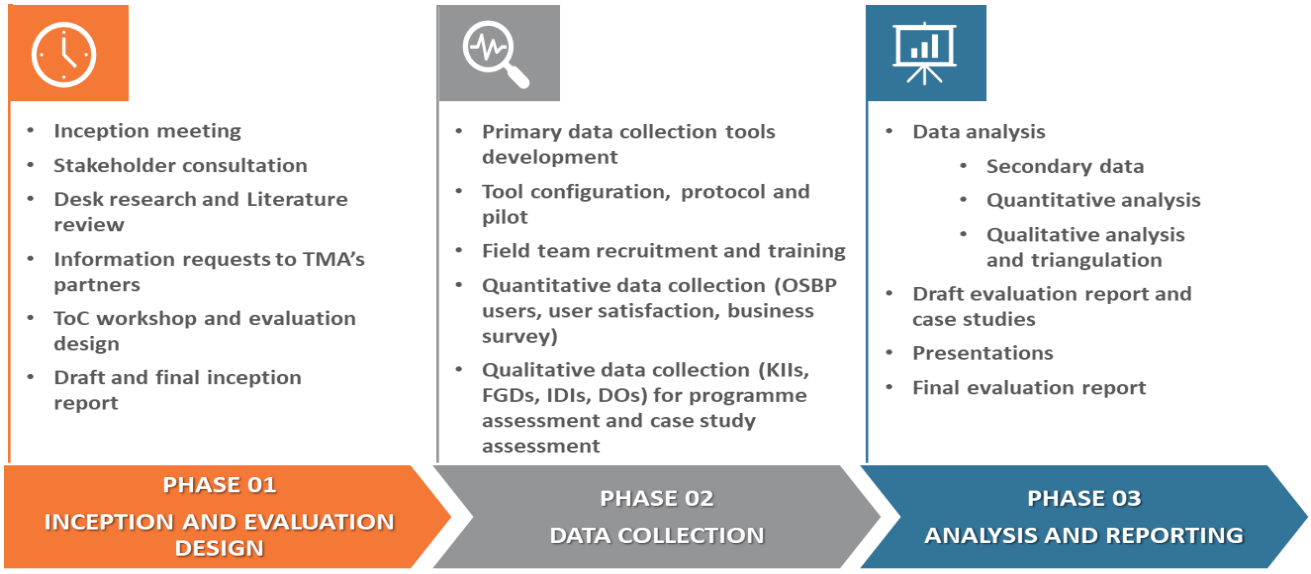
2. Evaluation Approach

Our evaluation methodology is theory-based and evaluates the programme through the lenses of the OECD-DAC criteria. We use a mixture of quantitative and qualitative data from primary and secondary sources from the four evaluable projects in the portfolio to answer the agreed evaluation questions which have been split into the OECD-DAC criteria. We also provide a commentary on the quality and limitations of the evidence provided to ensure our findings are caveated appropriately. The ToC plays a central role in assessing whether the transport infrastructure portfolio has contributed to higher levels of transformation at the outcome and impact levels.

During the inception phase, EDI Global facilitated an interactive ToC workshop with key stakeholders from TMA's transport infrastructure portfolio, including programme implementation and results teams. The workshop involved brainstorming exercises to identify portfolio problems and goals, reviewing and updating the ToC to exclude irrelevant areas, and clarifying causal pathways. We also reviewed the key assumptions during this process. The ToC workshop and revision of the ToC are described further in the following subsection.

Having revised the ToC and reviewed the key assumptions, we reviewed existing evidence (quantitative and qualitative) and collected primary quantitative and qualitative data to assemble our responses to the evaluation questions. Our evaluation approach was delivered across three phases as shown in the Figure 4 below:

Figure 4 Project Phases



2.1. *Review of the Theory of Change*

One of the main tasks in the inception phase was to review the transport infrastructure Theory of Change (ToC) to assess its suitability for the portfolio evaluation. The Theory of Change is a critical tool in theory-based evaluation, as it outlines the assumed causal pathways that link activities, outputs, outcomes, and impacts of an intervention. By clearly mapping out these assumptions and the steps needed to achieve desired outcomes, a ToC helps evaluators test the validity of these pathways, assess the strength of underlying assumptions, and identify factors that may influence success or failure. This approach enables a more structured and transparent

evaluation, allowing stakeholders to understand not just whether an intervention worked, but how and why it did (or did not) succeed.

The initial Intermediate Outcome (IO) 1.1 ToC for TMA's transport infrastructure portfolio, developed as part of TMA's wider Monitoring, Evaluation and Learning (MEL) Strategy in 2020, provided a foundation for this evaluation. The logic within this model states that the construction of targeted infrastructure (outputs) improves efficiency at key transport nodes (short-term outcomes), contributing to a more sustainable and efficient transport infrastructure system (intermediate outcome), which in turn leads to reduced barriers to trade and improved business competitiveness (outcomes). However, the strength of evidence underpinning some of these linkages was variable, as indicated by the red, amber, and green arrow colours.

On 7th August 2024, the evaluation team convened a ToC workshop with TMA stakeholders, including representatives from the programme implementation and results teams. During the inception phase, EDI Global led this interactive workshop, which involved:

- ✓ Group exercises brainstorming ideas on the problems the portfolio is trying to address and the ultimate goal of the portfolio;
- ✓ Identifying areas of the ToC that may now be irrelevant and therefore not covered by the evaluation;
- ✓ Discussing and clarifying causal pathways in the ToC.

This process led to a revision of the ToC to better map and link evaluable projects to portfolio outputs and include the critical assumptions required for the causal pathways to occur.

The original and revised ToC resulting from the workshop are illustrated in ANNEX B. Key changes in the revised ToC include:

- ✓ Exclusion of lake port infrastructure outputs from the evaluation, as these projects are not considered evaluable.
- ✓ Exclusion of trade logistics clusters (TLCs) from the evaluation, as no facilities were completed under Strategy 2, rendering this pathway unevaluable. These elements are shown in the ToC for completeness but noted as not contributing outputs in Strategy 2.
- ✓ Addition of a new activity, "capacity building of border management (IBM), soft infrastructure," with a causal pathway linking it to improved ownership among border agencies and streamlined management of infrastructure.

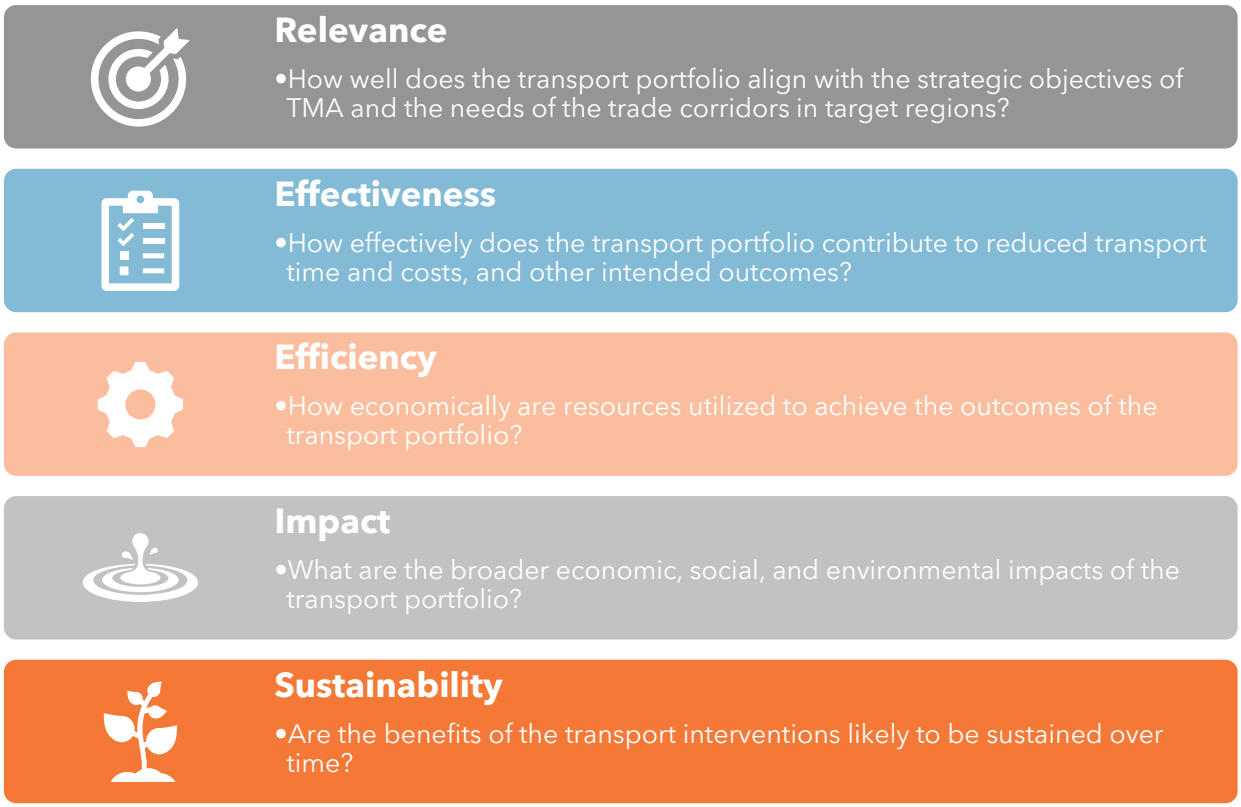
The evaluation tested some of the key assumptions and pathways set out in the revised ToC by capturing these in evaluation questions (EQs). Through gathering evidence to test these EQs, the evaluation assesses the extent to which the ToC was an accurate representation of how change took place in the transport infrastructure portfolio or if adjustments were required.

At a meeting on February 27, 2025, the evaluation team reviewed and validated the first draft of this evaluation report, with some suggested amendments and corrections. As part of the finalisation of this evaluation, this meeting also spoke through the project's ToC, outlining its structure, revisions made during the inception phase, and its role in guiding the evaluation.

2.2. *Evaluation Questions and EQ Matrix*

Using the OECD DAC criteria and the evaluation objectives from the TMA, we refined the evaluation questions by categorising primary questions and developing secondary ones for added detail[7]. These secondary questions guided the design of focus groups, interviews, and surveys, and were aligned with our interpretation of the ToC to challenge its assumptions. The final framework, summarised in Figure 5 and presented in full in ANNEX C, includes 24 secondary questions across the OECD DAC criteria, ensuring comprehensive coverage of all evaluation areas.

Figure 5. Evaluation Questions (EQs) by OECD-DAC criteria



Additionally, we ensured that the questions addressed the thematic issues highlighted by TMA in the TOR. Each secondary question was linked directly to a thematic issue identified by TMA, ensuring comprehensive coverage. The thematic areas identified by TMA were numbered (see ANNEX C), and each area was addressed by secondary evaluative questions.

2.3. *Analysis Plan*

As this is a portfolio-level evaluation, a range of evidence sources for the four evaluable projects included in the evaluation were synthesised. We understand that analysing and synthesising quantitative and qualitative data from primary and secondary sources requires a systematic approach and significant resources to produce effective contribution analysis. EDI Global's MEL Experts led the analytical tasks, replicating the approach used in a previously concluded TMA's ICT4T evaluation, as outlined below.

[7] The evaluation questions act as the framework around which the findings are collectively presented. The sub-evaluation questions serve as a guide for the development of data gathering instruments.

1. **Secondary Data Analysis** –We reviewed project-level evaluation reports and the secondary data available from the TMA-supported transport infrastructure sites themselves to populate secondary quantitative and qualitative evidence for all evaluable projects (where this evidence was available).
2. **Primary Quantitative Data Analysis** – Data from border users, road users, and businesses was analysed using Stata software. This process includes distribution analysis, outlier removal, summary statistics on sample demographics and outcome variables, disaggregated summary statistics by gender and user type, T-tests to compare baseline and endline values, and correlations on key variables.
3. **Primary Qualitative Data Analysis** – Interviews were transcribed into templates, with key responses pulled out to answer evaluation questions.
4. **Develop Analytical Responses per Evaluation Question** – Using the primary and secondary data outputs listed above, we wrote narrative responses for each evaluation question, highlighting key findings and assessing causal linkages in the ToC. We have aimed to ensure a comprehensive analysis by referring to various data sources and projects and commenting on impacts at the portfolio level.

We selected this approach because it allows for a systematic examination and comparison of evidence across the transport infrastructure portfolio's evaluable projects. The analysis template helps us visually pinpoint where evidence is lacking and where it is sufficient.

2.4. *Preliminary Consultations*

As detailed in the inception report, the preliminary phase involved extensive engagement with key stakeholders. The EDI Global team acknowledged the significance of these early consultations in fostering trust and establishing essential connections. By involving stakeholders from a range of roles and organisations, the team ensured a comprehensive understanding of the project's context and nuances. These initial engagements were pivotal in providing the evaluation team with access to crucial networks and insights necessary for the subsequent stages of the evaluation process. The full list of consulted stakeholders is presented in ANNEX E and summarised below for each of the projects.

- ✓ **Mombasa Roads**: Consultations were held with chief engineers from the County Government of Mombasa, independent consultant engineers, and representatives from KenHA and TMA.
- ✓ **Hargeisa Bypass**: Key stakeholders included representatives from TMA, the Ministry of Finance Development, the Somaliland Chamber of Commerce, Industry and Agriculture, the Ministry of Transport and Road Development, and DP World.
- ✓ **Nimule / Elegu OSBP**: The team engaged with customs officers, immigration officials, and representatives from the East African Community and TMA.
- ✓ **Goli / Mahagi OSBP**: Consultations were conducted with the Commissioner of the Executive Office Operations.

2.5. *Desk Review*

EDI Global received all relevant documents from TMA relating to the evaluable projects. A table presenting all documents reviewed per project is attached as ANNEX A. These documents included:

- ✓ The IO 1.1 evaluability assessment;
- ✓ Project Appraisal Reports (PARs);
- ✓ Project monitoring plans;

- ✓ Project log frames; and
- ✓ Project evaluation reports (baseline and endline).

The review of secondary data plays a crucial role in addressing the evaluation questions, as it provides a wider perspective than the primary data collected from the four evaluable project sites. This secondary data, which includes evaluation reports from the Mombasa Roads Programme and the Berbera Corridor, offers insights into areas such as greenhouse gas (GHG) emissions and traffic surveys—topics not directly addressed by our primary data collection methods. Additionally, the endline evaluation at Goli/Mahagi provides data on trade growth and traffic flows, further enriching our analysis.

We have integrated these secondary data insights with primary data in our Analysis. To ensure a comprehensive review, we identified and mapped secondary data sources from relevant programme documents that could contribute to answering the evaluation questions. A structured template was developed to map key findings and summarise them according to the OECD-DAC criteria, creating an organised and accessible data library to support the final evaluation analysis.

2.6. *Primary Data Collection and Sampling*

In accordance with our mixed methods approach, we have enhanced the secondary data review with primary data collection. Recognising the diverse nature of project activities, contexts, and stakeholders, we customised our primary data collection strategies for each project. This approach ensures we capture valuable insights from stakeholders who may benefit from TMA's transport infrastructure investments across East Africa. The evaluation utilised multiple primary data collection sources, as detailed in the table below.

Table 2. Primary data collection sources by project

Project	Survey	Planned sample size	Actual sample size
Quantitative			
Mombasa Roads	User Satisfaction Survey	260	261
	MSME Survey	110	110
Hargeisa Bypass	User Satisfaction Survey	260	265
Nimule / Elegu OSBP	Border User Surveys	250	250
Goli/Mahagi OSBP	Border User Surveys	250	252
Qualitative			
Mombasa Roads	In-depth interviews with large firms	Up to 10	9
	Community Case studies	2	2
Hargeisa Bypass	FGDs with MSMEs	Up to 4	3
	FGD with Residents	Up to 2	1
	KIIs with stakeholders	Up to 5	8
Nimule / Elegu OSBP	IDIs with SMEs[8]	12	8
	KIIs with stakeholders	5	2
Goli/Mahagi OSBP	IDIs with SMEs[8]	12	8
	KIIs with stakeholders	5	5

Details on the sampling approach for each of the above data collection activities can be found in ANNEX D.

[8] The sample allocation for IDIs with SMEs was revised to include three Border SMEs, three CBTs and two Local Councilors based on insights from the scoping exercise.

2.7. METHODOLOGICAL LIMITATIONS

As with all evaluations, this one applied research methods appropriate for answering the evaluation questions and conforming to the available data. This led to several methodological limitations.

- ✓ **Social Desirability Bias**: Respondents might have provided answers they believed were favourable rather than honest, due to fear of negative consequences or mistrust. Additionally, some respondents may have been reluctant to participate in surveys due to confidentiality concerns. To minimise these issues, we trained enumerators to ensure confidentiality and provide clear information about the evaluation's purpose. Most interviews were conducted in-person, with enumerators trained to probe for accurate responses while ensuring confidentiality and anonymity.
- ✓ **Trust and Reluctance to Participate**: Related to social desirability bias, there may also be a lack of trust or reluctance to participate in surveys due to concerns about confidentiality and privacy. To address this, we trained data collectors in effective rapport building and communication and to conduct interviews in local languages based on respondent preference to avoid communication gaps and improve trust.
- ✓ **Recall Bias**: The time gap between service provision and evaluation could have affected respondents' memory accuracy. We pre-tested survey questions to identify recall bias issues and used mixed-methods approaches to triangulate data and gain a comprehensive understanding of participants' experiences. This helped improve the quality of the survey data and provided a more accurate picture of respondents' experiences
- ✓ **Convenience Sampling at OSBPs**: For OSBPs, the sampling of non-motorised users followed a purposive approach to ensure coverage of pedestrian and cross-border trader (CBT) experiences, irrespective of the daily traffic flow. The aim was to achieve a sample size of 50 pedestrians at each OSBP. This target was met, with 51 pedestrians sampled at Elegu and 58 at Goli. It is important to note that this sampling approach was not intended to reflect daily traffic flow but to ensure comprehensive coverage of pedestrian user experiences.
- ✓ **Small Sample Size of Businesses Near OSBPs**: To capture impact on local economic development, the study included interviews with cross border traders, border SMEs and local councillors. These interviews were converted into learning case studies on significant themes. While this approach does not provide comprehensive quantitative measurements, it establishes qualitative evidence of both intended and unintended consequences and provides data with which to interrogate the project's theory of change.
- ✓ **Respondent Fatigue:** The evaluation of the transport infrastructure portfolio was conducted in parallel with other studies relevant to the same projects. While stakeholder discussions were consolidated as much as possible in Kenya and Somaliland, the requests for the Uganda Revenue Authority (URA) were substantial. Consequently, due to respondent fatigue and the non-responsiveness of the revenue authorities, customs clearance data could not be accessed and included in this report.

3. RELEVANCE

In this section the evaluation explores the alignment of TMA's transport portfolio with its strategic objectives, as well as the specific needs of the EAC, AfCFTA and various trade corridors in target regions, by answering the evaluation question *"How well does the transport portfolio align with the strategic objectives of TMA and the needs of the trade corridors in target regions?"* In doing so it unpacks the alignment of the portfolio interventions with the needs of countries, Regional Economic Associations, transports, business, and the needs of the global climate agenda. The section examines the extent to which these interventions reflect the priorities of transporters and businesses, ensuring that the infrastructure investments cater to practical, on-the-ground needs. Finally, it investigates the alignment of the interventions with global climate agendas, assessing how they incorporate climate resilience and sustainability into their design and implementation. By addressing these questions, the chapter provides a comprehensive view of the relevance of TMA's transport investments, highlighting their role in facilitating trade, reducing barriers - key challenges identified in TMA's Strategy 2 - and contributing to regional and global development goals.

3.1. *OVERALL ASSESSMENT ON RELEVANCE*

The TMA transport portfolio demonstrates strong alignment with TMA's strategic objectives to reduce time and travel costs that impede regional trade and effectively addresses the needs of key trade corridors in target regions. Through targeted investments in critical infrastructure, including roads and border facilities, the portfolio facilitates regional economic integration, enhances trade efficiency, reduces costs and transit times, and contributes to broader development goals such as food security, market access, and climate resilience.

3.2. *ALIGNMENT TO TMA STRATEGY 2017-2023*

TMA's Strategy 2 is underpinned by the goal of enhancing regional economic integration, reducing trade costs, and improving the efficiency of transport systems across key trade corridors. Overall Strategy 2 aimed to reduce transport and logistics costs in East Africa by at least 30%, double intra-regional trade within the EAC, increase exports by 50%, and eliminate key NTBs along major trade corridors to enhance efficiency and reduce delays.[9] The transport infrastructure investments enhance regional connectivity and directly support TMA's goal of fostering intra-regional trade growth and export expansion.

Table 3: Relevance of TMA Infrastructure Investments to TMA Strategic Objectives (2017-2023)

Objective	Relevant TMA Objective	Evidence from the Evaluation
Reduction in trade costs and logistics inefficiencies	Reduce transport and logistics costs in East Africa by at least 30%	Mombasa Roads reduced truck turnaround times from 7–9 hours to 3–4 hours, significantly improving logistics efficiency.
Elimination of NTBs along trade corridors	Remove key NTBs along major corridors to improve efficiency	Nimule-Elegu OSBP reduced border clearance times from 11 hours to less than 5 hours, directly cutting NTBs.
Enhancement of regional trade facilitation and integration	Expand infrastructure to support trade growth and regional integration	Hargeisa Bypass reduced transport times by 40% and increased cargo volumes by 40%, fostering regional connectivity.

[9] TMA corporate strategy 2017-2023

3.3. *Alignment with EAC Strategy (2021–2026)*

The evaluation found that TMA's investments are well-aligned with the EAC's priorities on customs union enhancement and the reduction of NTBs. The EAC aims to establish a fully operational customs union through improved border management systems, such as the development of OSBPs, while also advancing regional infrastructure to drive economic growth and enhance trade efficiency.[10] Moreover, the EAC emphasizes promoting sustainable infrastructure that supports environmental resilience.

TMA projects like the Nimule-Elegu OSBP and Goli-Mahagi OSBP exemplify these goals by streamlining customs processes and facilitating the seamless flow of goods across member states. These interventions address the EAC's focus on NTB elimination by significantly reducing clearance times and curbing informal trade. Similarly, the Mombasa Roads project contributes to climate resilience through upgraded drainage systems, aligning with the region's sustainability objectives and supporting long-term environmental goals.

Table 4: Relevance of TMA Investments to EAC Strategy (2021-2026)

Objective	Relevant TMA Objective	Evidence from the Evaluation
Achieve a fully functional customs union	Improve customs efficiency through OSBP development	Each of the Infrastructure investments is complemented by investment in Integrated Border Management systems and together this has significantly enhanced efficiency of customs processes in key border posts in EAC e.g. Goli-Mahagi OSBP streamlined customs processes, reducing processing times from 8 hours to 3 hours.
Reduce NTBs by 20% along trade corridors	Streamline trade corridors to minimize trade barriers	OSBPs such as Nimule-Elegu have significantly reduced informal payments and cut clearance delays by over 50%.
Develop regional infrastructure for economic growth and trade facilitation	Invest in critical trade infrastructure along regional transport corridors	Investments in Mombasa Roads have enhanced regional connectivity, reducing congestion and transport times by up to 60% along the Northern Corridor a key regional infrastructure for EAC.

3.4. *Alignment with AfCFTA Strategy*

TMA's projects, including the Hargeisa Bypass and Goli-Mahagi OSBP, are strongly aligned with the AfCFTA's objectives, which aim to gradually reduce NTBs to boost intra-African trade by at least 60%, empower small-scale traders and women through inclusive trade policies, and develop infrastructure that enhances interconnectivity among African markets.[11] The Hargeisa Bypass strengthens trade connectivity between Somaliland and Ethiopia, reducing travel times by 40% and significantly lowering transport costs for businesses, thereby facilitating smoother trade flows. Similarly, the Goli-Mahagi OSBP directly supports small-scale traders, including many women, by cutting transaction costs and improving cross-border accessibility. These initiatives play a vital role in advancing regional integration and promoting inclusive economic growth, fully aligned with the AfCFTA's strategic priorities.

[10] Sixth EAC Development Strategy 2021/22 – 2025/26
[11] Agreement establishing the African Continental Free Trade Area

Table 5: Relevance of TMA Investments to AfCFTA Strategy

Objective	Relevant TMA Objective	Evidence from the Evaluation
Reduce NTBs to increase intra-African trade by at least 60%	Facilitate the removal of trade barriers through infrastructure investments	Nimule-Elegu OSBP substantially reduced border clearance times by over 50%, directly reducing NTBs.
Develop infrastructure to enhance interconnectivity between African markets	Improve transport corridors to enhance regional connectivity	Hargeisa Bypass improved regional connectivity, reducing travel times by 40% and increasing cargo volumes by 40%. Traffic along this key trade corridor increased from approximately 29,919 in 2021 to 39,459 in 2023, marking a 32% increase.
Empower small-scale traders and women through inclusive trade policies	Ensure OSBP designs and trade facilitation programs meet the needs of women and small traders	The Goli-Mahagi OSBP significantly reduced transaction costs by 70%, notably benefiting small-scale women traders engaged in informal cross-border trade. Post-intervention, transaction processing times have reduced from 8 hours to 3 hours, resulting in a substantial increase (45%) in the daily volume of trade. Complementary investments in the Simplified Trade Regime (STR) further enhanced the OSBP's impact, simplifying customs procedures, reducing informal payments, and supporting more women traders to use formalize channels.

3.5. *ALIGNMENT WITH THE SPECIFIC NEEDS OF THE TRADE CORRIDORS AND TARGET REGIONS*

Each intervention within TMA's transport portfolio was designed to address the trade and transport challenges specific to its respective region, ensuring that infrastructure improvements are both relevant and responsive to the needs of users. The choice of investments was done through detailed analysis of the challenges in the trade corridors and validated through broad-based consultations with key stakeholders at country and regional levels. For example, the investments along the Northern Corridor were identified through an assessment of the corridor done in 2011 which states, *"Modernization of transport infrastructure and removal of non-tariff barriers along these corridors is critical for trade expansion and economic growth, which are key to the success of regional integration as well as creation of wealth and poverty alleviation in the individual countries."* [12]

Stakeholder engagements and other public private dialogue (PPD) were carried out. For example, consultations on investments at and around the Port of Mombasa are conducted through the Mombasa Port Charter, which brings together public and private sectors to continuously assess the performance of the port and the corridor while identifying areas for improvement. The National Oversight Committee (NOC) and National Trade Facilitation Committee (NTFC) further contribute to investment prioritization by continuously monitoring NTBs and identifying emerging needs. The NOC assists TMA align with the different donors' priorities.[13]

At the EAC level the member states were involved in prioritizing the OSBPs to be constructed based on the needs of each country and corridor.[14] By identifying and targeting critical bottlenecks—such as congestion, inefficient border operations, poor road connectivity, and inadequate infrastructure— and using baseline assessments, TMA interventions directly tackle the constraints hindering trade facilitation and economic growth across key corridors. By focusing on trade corridors of strategic importance, such as the Northern Corridor, the Berbera Corridor, and border crossings into South Sudan and the Democratic Republic of Congo (DRC), TMA investments ensure that infrastructure improvements respond directly to the needs of businesses,

[12] Corridor Diagnostic Study of the Northern and Central Corridors of East Africa
[13] KII TMA Programme Manager
[14] Project Appraisal Report Mombasa West Integrated Urban Roads Network Project

communities, and government stakeholders, while promoting sustainable and resilient trade systems. Below is a highlight on how each of the infrastructure investments has contributed to the corridors.

1. **Mombasa Roads**: The roads are integral to the Northern Corridor, handling 90% of EAC-bound cargo and facilitating over 40 million tons of cargo annually through Mombasa Port. At baseline (2016), truck turnaround times at the port ranged from 7–9 hours, causing significant delays in cargo movement. Investments in road infrastructure and drainage systems reduced travel time by up to 60%, decongested port access routes, and improved cargo throughput efficiency. These align with TMA's objectives of enhancing logistics performance and boosting trade competitiveness.[15]
2. **Nimule-Elegu OSBP**: Serving as the gateway to South Sudan, the OSBP plays a critical role in integrating South Sudan into the EAC. South Sudan heavily relies on imports for basic commodities, with trade volumes growing annually by 30% after the OSBP's implementation. Customs processing times were reduced from 11 hours to less than 5 hours, eliminating delays and promoting smoother trade flows. This supports TMA's strategic focus on facilitating cross-border trade and regional integration.[16]
3. **Goli-Mahagi OSBP**: Positioned on the Uganda-DRC border, the OSBP supports DRC's recent integration into the EAC. By streamlining trade infrastructure, it facilitates the flow of basic commodities into Eastern DRC. Customs processing times were cut from 8 hours to 3 hours, lowering transaction costs and improving market access. This aligns with TMA's goal of reducing non-tariff barriers and supporting informal cross-border trade, particularly among small traders.
4. **Hargeisa Bypass**: As part of the Berbera Corridor, the bypass enhances regional trade between Somaliland and Ethiopia. Trade volumes along the corridor have surged in recent years, with Berbera Port becoming increasingly significant as an alternative route for Ethiopia's growing cargo demands. The bypass reduced travel times by 40%, making the corridor more efficient and cost-effective. This aligns with TMA's strategic objective to improve regional connectivity and facilitate economic growth in the Horn of Africa.[17]

3.6 RELEVANCE OF INFRASTRUCTURE INVESTMENTS TO THE NEEDS AND PRIORITIES OF ALL GENDERS.

The infrastructure investments by TMA showed deliberate efforts to incorporate gender-responsive elements into their design. One-Stop Border Posts (OSBPs), in particular, included dedicated facilities such as separate lavatory amenities for men and women, enhancing convenience and safety, especially for female traders and travellers. The OSBP designs also promoted a seamless flow between institutions and ensured visibility of key counters, significantly improving user experience for passengers and traders, and accommodating users of all genders. Additionally, the investments in Mombasa Roads included comprehensive drainage systems along Mbaraki and Nyerere Roads, alleviating longstanding flooding problems that disproportionately affected small businesses, many owned and operated by women, and other community institutions like school, thereby improving their economic resilience. However, delays in land compensation processes, notably along Magongo Road in Mombasa, have posed challenges for some community members, even though compensation management remains a government responsibility. Nonetheless, TMA has proactively engaged in lobbying for the allocation of compensation resources, resulting in over 70% of the compensation being successfully completed by the government.

[15] Project Appraisal Report Mombasa West Integrated Urban Roads Network Project
[16] Activity Verification Visit – Beneficiary Feedback Report- South Sudan Programme
[17] Final Report for The Endline Study on The Berbera Corridor

By reducing congestion, travel times, and emissions, the interventions not only improve transport efficiency but also contribute to environmental sustainability integrating climate resilience and inclusivity into its design. Infrastructure improvements, such as drainage systems in Mombasa, mitigate flooding risks and ensure continuity of trade. The inclusion of energy-efficient infrastructure and facilities at border posts promotes sustainable operations. Collectively, these investments strengthen regional trade networks, improve food security in fragile regions like South Sudan and Eastern DRC and empower marginalized groups by facilitating equitable market access and economic opportunities.

4. EFFECTIVENESS

This section explores the effectiveness of the TMA transport portfolio in examining how well the portfolio has reduced transport times and costs, highlighting measurable outcomes and their broader implications for economic activity and trade efficiency. The analysis delves into the economic advantages linked to improved transit efficiency, including the facilitation of trade, strengthened market connections, and enhanced regional integration.

The section also explores unintended outcomes, both positive and negative, to understand how they influence overall effectiveness. These considerations allow for a broader analysis of the transport portfolio's impact, offering insights into areas requiring refinement or further investment.

4.1. *OVERALL ASSESSMENT ON EFFECTIVENESS*

The evaluation has found clear evidence that the transport portfolio has significantly reduced transit times and costs, facilitating increased trade efficiency and regional integration through streamlined border operations, improved infrastructure, and enhanced market access. Economic benefits are evident in higher trade volumes, expanded market opportunities, and increased business activity around key transport hubs. However, challenges persist, such as trade imbalances, intermittent infrastructure constraints, and unintended socio-environmental outcomes.

Overall, the reduction in transit time and clearance time has contributed to a significant rise in trade volumes resulting in benefits of streamlined operations, and clearance rates at country level and among border and post operators. However, there is no evidence from this current study that suggest changes in trade volumes and economic benefit directly translate into economic benefits at a firm level or department level. The findings underscore the importance of addressing these gaps to maximise the portfolio's overall effectiveness while sustaining the economic, social, and environmental gains achieved.

4.2. *REDUCTIONS IN TIME TO CROSS BORDERS AND ROADS*

There is strong evidence to demonstrate that the infrastructure portfolio has increased efficiencies in cross border road usage. The time and cost savings identified as part of the portfolio evaluation, validate and strengthen the insights from previous time and traffic studies.

The transport infrastructure portfolio projects under focus show a clear reduction in the time taken for road and border users. Stakeholder consultations and interviews conducted comparing the time taken for border activities including queueing and customs clearance prior to the interventions and currently demonstrate advances. The most significant improvements are observed in the Goli/Mahagi border where the total time to cross the border has reduced by 58% and in Elegu where it has reduced by 83% (Table 6).

Table 6: Change in time taken across projects

Project	Description	Before* (mins)	After** (mins)	% reduction
Goli/Mahagi OSBP	Time taken from queuing to clearance in Goli	1049[18]	444	58%
Elegu/Nimule OSBP	Time taken from queuing to clearance in Elegu	3590[19]	608	83%
Mombasa Roads[20]		145	78	46%
Hargeisa Bypass[21]		480	360	25%
**The time taken before project initiation for OSBP projects is from baseline reports in footnote. The time taken before project initiation for roads projects is retrospective self-reported data. ** The time taken after is as of 2024 and is obtained from survey of border and road users.*				

One of the key factors influencing the time reduction at the OSBPs was found to be the presence of all relevant departments within the same compound/building. Furthermore, provision of parking areas within the OSBP compounds has also contributed to reducing border congestion and improving traffic flow. The reduction in traffic flow is evidenced by the observed change in incoming and outgoing traffic at Elegu OSBP as presented in Table 7. Significantly, importing trucks to Uganda increased by 402% and outgoing transit vehicles by 406% supporting increased trade volume beyond Uganda and South Sudan.

Table 7: Change in traffic flow in Elegu OSBP from 2021 to 2024[22]

	Before (Aug 2021)	After (Aug 2024)	% change
Incoming traffic flow from South Sudan to Uganda			
Total incoming trucks	5530	7511	36%
Trucks loaded to import	50	251	402%
Incoming transit trucks	149	107	-28%
Outgoing traffic flow from Uganda to South Sudan			
Total outgoing trucks	2366	6394	170%
Trucks loaded to export	1282	941	-27%
Outgoing transit vehicles	1076	5445	406%
The traffic flow comparisons are made between the months of Aug 2021 and Aug 2024. In order to exclude the impact of Karuma bridge closure in Uganda on traffic flow.			

The role of OSBPs in improving cross border trade is reflected in the user preference of the border posts for trade between origin and destination. Fifty three percent of the Goli users and 94% of the Elegu users report using only this respective OSBP (Figure 6).

The preference for the OSBP is prominently driven by the shortness of the route i.e., 64% in Elegu and 60% in Goli (Figure 6).

[18] Goli OSBP Traffic data from baseline survey, 2019
[19] Nimule-Elegu time and traffic report, 2013
[20] Average time taken for users of Magongo Road, Airport Road, Port Reitz Road, and Kipevu Road to their end destination. Endline is recorded as 2024, while the baseline refers to the *before* the road construction, which we estimate to be 2019.
[21] Time taken for Hargeisa bypass has been calculated as an average of the time taken for users travelling various journeys including from Berbera Port to Waajale, to Berbera to Hargeisa or to other locations in Somaliland.
[22] The analysis is made from the data shared by Uganda Revenue Authority. A similar exercise has not been performed for Goli OSBP due to the lack of baseline data.

"Earlier it used to take more than 2 days across borders for a vehicle, it has changed to being cleared within the same day due to cooperation between departments"– Goli KII

Figure 6: Reason for preferring this border post

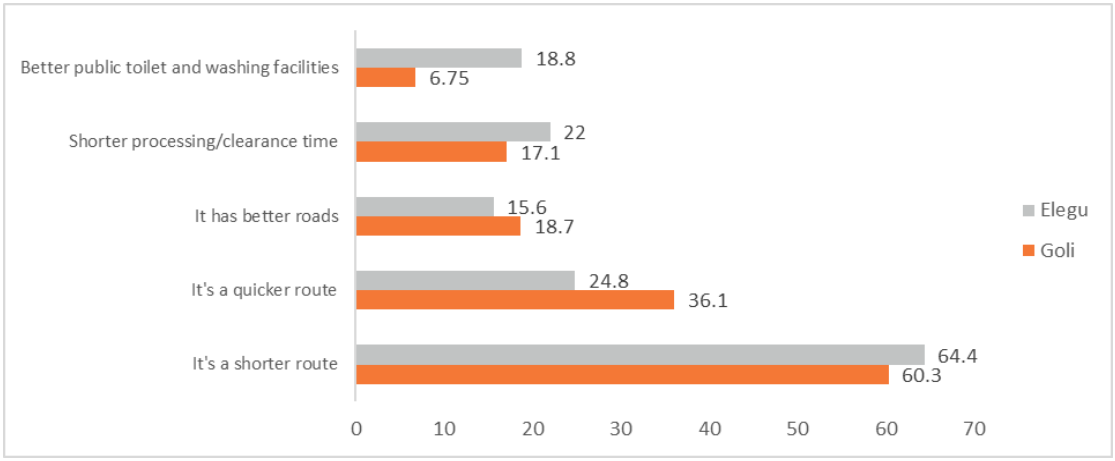


Figure 7: Change in time (in mins) of crossing/transport before and after project implementation

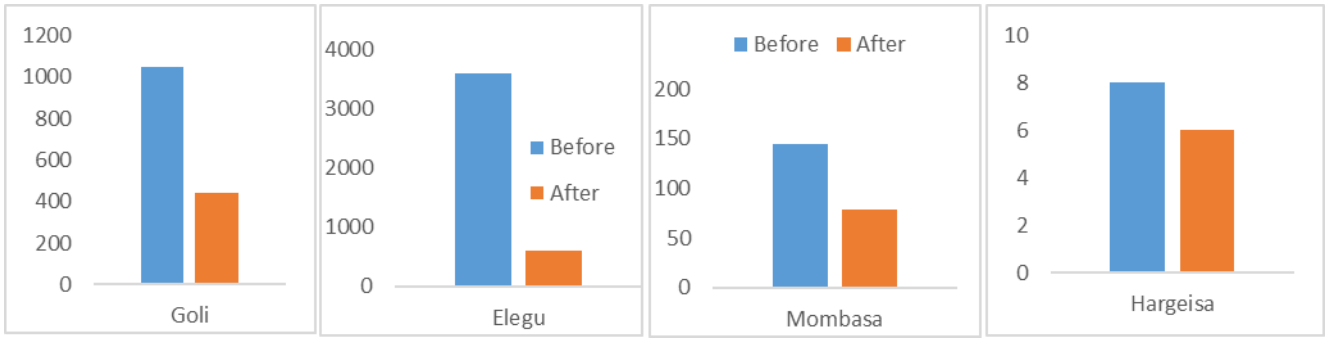
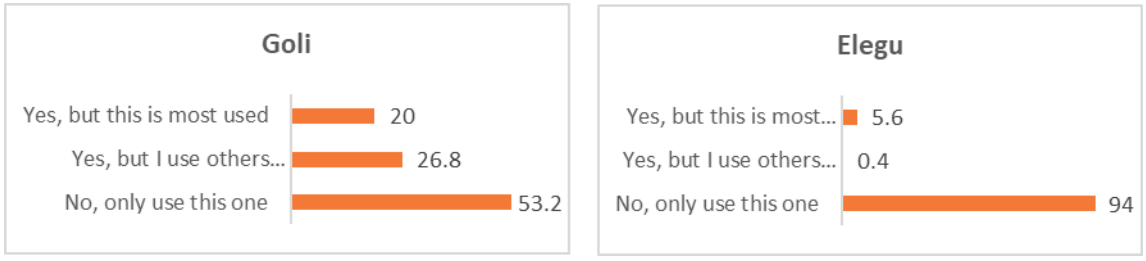


Figure 8: Preferred border usage among users



In addition, the availability of better public facilities and shorter clearance time plays an important role in travelling through the border, as reflected by 19% of survey respondents in Elegu and 7% in Goli, with providing better facilities cited as the reason for preferring the route. The importance of improved clearance time in enabling trade is reflected by 22% of Elegu users and 17% of Goli users selecting that as a reason for preferring the route.

When this data is unpacked further, the Cross Border Traders (CBTs) report that this preferred use is higher with 71% of CBTs in Goli and 100% in Elegu preferring their respective OSBP. Importantly, 27% of Goli CBTs

and 24% of Elegu CBTs report that the reason for their preference is that they regard the OSBP as a safer route. Thirty three percent of Goli CBTs and 39% of CBTs in Elegu mention access to market as their reason for preference (see ANNEX F for the visual representation of these figures).

The infrastructure portfolio interventions have been planned and implemented to improve the quality of infrastructure and facilities available for road and border users, thereby resulting in positive trade outcomes. User satisfaction survey administered across all four projects reveal positive outcomes achieved by the interventions in terms of satisfaction across different facilities and services as presented in Table 8.

Table 8: Average User Satisfaction Score across projects

Project	Average User Satisfactory Score (on a scale of 5)
Goli/Mahagi OSBP	4.08
Elegu/Nimule OSBP	3.72
Hargeisa Roads	3.30
Mombasa Roads	3.99

The highest satisfaction levels in Goli and Mahagi OSBP are related to the helpful signage, availability of same gender security guards and availability of food, accommodation and banking facilities near OSBPs. Among Mombasa and Hargeisa roads, the highest levels of agreement are recorded on reduction in driving time, reduction in delays, signifying the strength of evidence on self-reported change in transit time. The detailed user satisfaction survey results per project are present in ANNEX F.

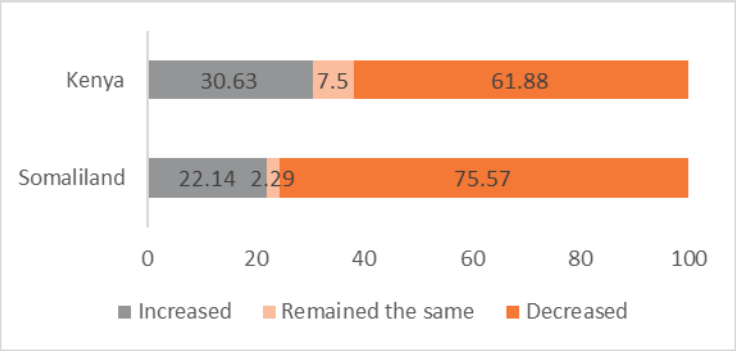
4.3. *Reductions in Journey Times*

Earlier TMA studies[23] have found that there have been significant reductions in journey times. The findings from the current evaluation collectively underscore the substantial improvements in transport efficiency achieved through the interventions, highlighting their impact on reducing journey times, congestion, and clearance delays across key routes and border points.

In the TMA-funded roads projects, the average journey time has reduced as presented in Table 6 by an average of 46% (from 2.5hrs to 1.3hrs) in Kenya and 25% (8hrs to 6hrs) in Somaliland among surveyed road users, including truck drivers and other road users. Specifically, 62% of the respondents in Kenya (Mombasa) and 76% of the respondents in Somaliland (Hargeisa) reported a decrease in journey time (Figure 9).

[23] Mombasa Roads (MR) the average ship turnaround time was reported to be reduced from 5 days to 2.9 days and truck turnaround time reduced from 5.26 hours to 2.71 hours. Hargeisa Bypass (HB) the previous studies reported journey time reduced by 37-39% on key routes. In Goli-Mahagi OSBP previous studies repot reduction in transport reduction time. The customs clearance time was reported to have reduced by 40-80%. In Nimule Elegu OSBP previous studies demonstrated reduction in transport time, reduced congestion and traffic jams, waiting times and border clearance time.

Figure 9: Perceived change in travel time among road users (as % of respondents)



This reported reduction in journey time is substantiated by truck associations and clearance agencies operating in both Hargeisa and Mombasa. Qualitative consultations confirmed the time savings produced to reduce congestion and roadblocks due to the Hargeisa Bypass. Further port and corridor efficiencies are reported due to both road infrastructure and ICT investments.

"Our service involves clearing goods from the port and delivering them, so the main benefit of this road is that it reduces and simplifies travel time." – Hargeisa forwarding agency KII

"Previously, vehicles experienced significant congestion while passing through the city, but the bypass has alleviated these issues. It has helped us a lot; it has made it easier for vehicles to move without the heavy traffic they used to face in the city," – Berbera truck association KII

TMA's investments, such as in the ICMS and Mombasa roads, have significantly enhanced port and corridor efficiency. Current imports are 36MT compared to 23MT in 2017, but the clearance time has gone down. – Shippers Council KIII, Mombasa

4.4. *Reductions in Transport Costs*

Transport infrastructure portfolio projects contributed to a clear reduction in the costs borne by users to cross borders and make use of roads. Across the individual projects evaluated, the transport/clearance cost of usage has reduced by at least 35% among Goli OSBP users, Somaliland and Kenya road users.

Table 9 shows the reported cost [24]to clear Goli/Mahagi border reduced by 36%, with a similar reduction for roads[25] of 62% in Mombasa and 40% in Somaliland.

Table 9: Change in self-reported costs borne by user

Project	Description of calculation	% reduction in cost
Goli/Mahagi OSBP	Change in costs as recorded at baseline[18] and endline	36%
Elegu/Nimule	Unavailable due to lack of relevant baseline data on costs	N/A

[24] The costs incurred by border users at OSBP include Tariffs/ duties, Licensing fees, Permits Insurance, Storage, Accommodation, Meals and entertainment, Security, Bribes/facilitation fees, Parking fees and Others as applicable to each user from queuing to clearance.
[25] The change in costs incurred by road users is calculated based on distribution of "Rating the extent to which the cost of travel has changed on a specific road". The average change is calculated as (% of respondents selecting small extent* change value for small extent (12.5%) + % of respondents selecting some extent* change value for some extent (37.5%) + % of respondents selecting moderate extent* change value for moderate extent (62.5%) + % of respondents selecting great extent* change value for great extent (87.5%)

Mombasa	Self-reported perceived change in cost based on a range[25]	62%
Somaliland	Self-reported perceived change in cost based on a range[25]	40%

4.4.1. Reductions in Border Usage Costs

A deep dive into the components that make up this reduction for Goli OSBP are presented in Figure 10 and

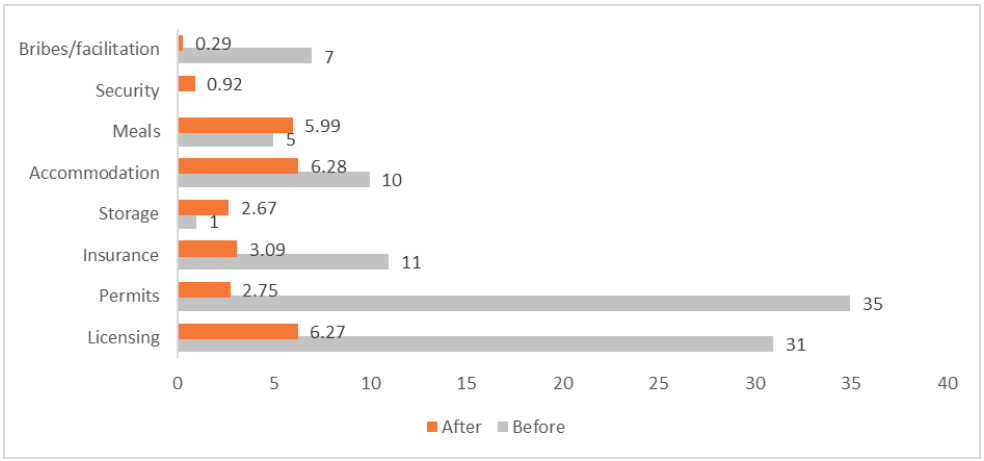


Table 10 below. These show a reduction in costs across all components except storage and meals and entertainment. Particularly, based on stakeholder interactions the reduction in the payment of bribes and facilitation fees has been widely acknowledged by SMEs and cross border traders. Further, while reduction in tariffs, licensing fees and permits could be influenced by the standardisation of processes at the border posts, they are primarily informed by the type and quantity of goods.[26]

Figure 10: Change in the cost borne at Goli OSBP in USD (Commercial vehicles)

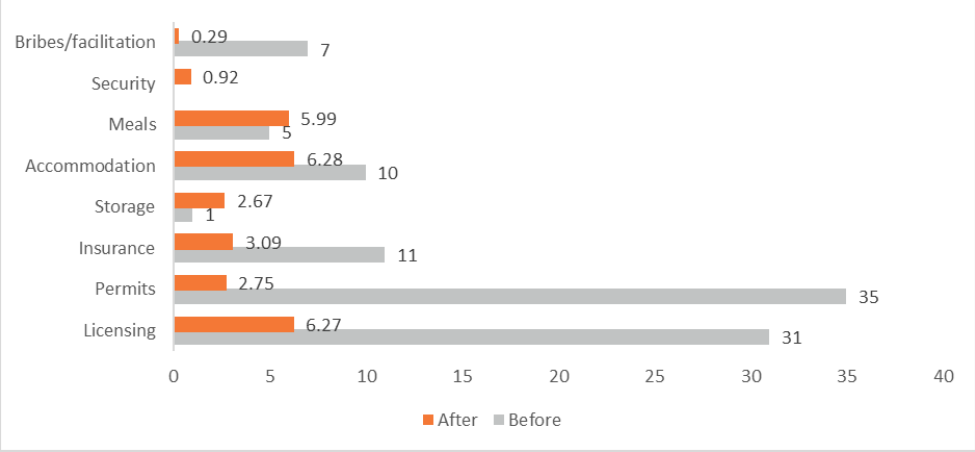


Table 10: Breakdown of costs in USD incurred by commercial vehicles at Goli OSBP

Goli/Mahagi			
Border crossing activity	Before (2019)[18]	After (2024)	% reduction
Cost items influenced by OSBP activities			

[26] Tariffs recorded at baseline could be heavily skewed by the type of vehicles and goods on the day of survey, since the change in tariffs are dependent on trade authorities. While tariffs for small scale traders have significantly reduced due to increased adherence to STR the overall tariff structure is not under the ambit of TMA investment.

Bribes/facilitation fees	7	0.29	96%
Storage	1	2.67	-167%
Accommodation	10	6.28	37%
Meals and entertainment	5	5.99	-20%
Security		0.92	
Cost items based on type of goods and vehicles			
Tariffs/ duties	457	1.15	100%
Licensing fees	31	6.27	80%
Permits	35	2.75	92%
Insurance	11	3.09	72%
The costs incurred at Elegu OSBP are unavailable at baseline. The costs reported as of in survey are presented in ANNEX F			

Looking more closely at associated costs, there was a 79% reduction in the payment of bribes/facilitation fees for commercial vehicles reported in our survey. Decreases in security and parking costs are the other prominent non-procedural costs impacted by OSBP development. Pedestrian cross-border traders have also reported a reduced incidence of bribing and facilitation fees, due to the streamlined implementation of Simplified Trade Regime (STR). and support provided to CBTs to obtain market information. Some quotes which reinforce these points were obtained from our qualitative interviews.

"The process is now quicker, with reduced waiting times and less reliance on bribes or unofficial payments." – Goli CBT KII

However, the reduction on costs borne for facilitation is not uniform with respondents reporting challenges on South Sudan side of the border.

"I used to buy it from South Sudan, but the border officials do not allow people to carry any goods without paying tax even if the value of the goods is very little." – Elegu SME KII

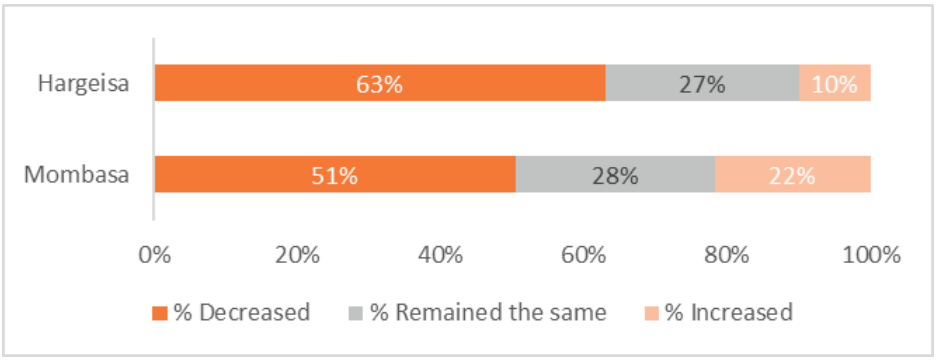
4.4.2. Reductions in Road Usage Costs

This evaluation reinforces earlier research and evaluation findings which document significant cost reduction for road use attributed to TMA's infrastructure projects. The observations strengthen the insights from previous studies where 99% of the users surveyed reported lower travel costs on the Port Reitz/Airport Road[27]. In Hargeisa[28], freight costs for non-containerised cargo were reported to have fallen by 11% (from USD 1,213 to USD 1,075), and transport costs decreased by at least 20%.[29]

[27] Mombasa Port Resilient Infrastructure Programme PAR, 2018
[28] Final report - DRC Cross Border Trade Programme, 2023
[29] In USD Hargeisa to Arabisyo: 125 to 100 (20%), Suuqa to Dhagasayn: 18 to 10 (44.4%), Suuqa to Gantalaha: 23 to 5 (78.3%), Suuqa to Hargeisa Bypass: 3 to 1 (66.7%).

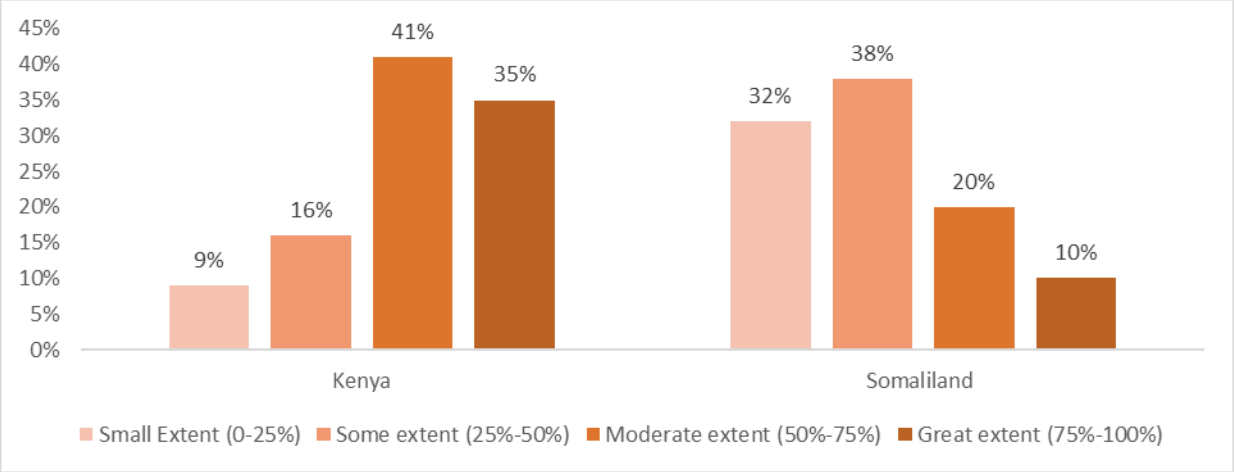
In the Mombasa Roads and Hargeisa Bypass projects, as shown in Figure 11, 63% of respondents in Somaliland and 51% respondents in Kenya reported a reduction in transport costs.

Figure 11: Perceived change in transport cost among road users



Furthermore, among Mombasa respondents reporting reduced cost, 76% of respondents attributed these changes to a 'moderate extent' or 'great extent' to improvements in the road infrastructure. In Hargeisa, the attribution was lower with 30% attributing cost reductions to a 'moderate extent' or a 'great extent' due to road improvements.

Figure 12: Attribution of reduction in transport costs to road infrastructure



Qualitative consultations in Somaliland and Hargeisa substantiate the findings of reduced costs, particularly highlighting reduced incidence of vehicle repair due to the improved quality of the road and the overall reduction in costs due to improved transit times.

"This improvement has not only expedited trade but also reduced vehicle maintenance costs, as the new roads require less frequent repairs." – Berbera Service Agency KII

4.5. *Economic Benefits from Time and Cost Reductions*

Economic benefits contributed by the improvement in trade infrastructure and reduced transit times include reductions in indirect costs, increased frequency of road/border usage, and increases in trade volumes and revenue. The reduction in direct and indirect costs have been presented in sections 4.2 - 4.4.2 above. The economic benefits reflected in higher throughput at OSBPs, roads and ports are detailed below.

Trade volumes and economic activity have seen notable growth across key trade routes and ports in East Africa. In Mombasa, trade volume has risen significantly, with imports increasing from 23 million tons (MT) in 2017 to 36 MT in 2024 as reported in a KII with shippers' council Mombasa. The change is supported by initiatives such as the Mombasa Port Charter, which drove a 23.5% growth in container throughput and boosted logistics-related employment[28]. Cargo tonnage surged by 90% between 2019 and 2023, while select Container Freight Stations (CFS) reported a 140% increase in handled cargo volumes[30]. Similarly, in Somaliland, the Hargeisa Bypass facilitated a 29% increase in export values, climbing from $275.4 million in 2020 to $354.8 million in 2022, with livestock exports showing a remarkable 44% growth[31]

Other regional trade routes have also experienced robust growth. The Goli-Mahagi One-Stop Border Post (OSBP) recorded more than a 100% rise in total trade volumes, from $17.7 million in 2019 to $40.9 million in 2022, driven by the introduction of trade facilitation measures like the Integrated Border Management (IBM) system.[32] At the Nimule-Elegu OSBP, the number of trade transactions increased by 32%, growing from 29,919 in 2021 to 39,459 in 2023[33]. These improvements highlight the contribution of infrastructure upgrades and policy interventions in fostering trade and economic development in the region.

Further economic benefits resulting from improved trade infrastructure include improved economic activity among CBTs, increased economic participation among women and local economic development. The economic benefits focused on local economic development are detailed in Section 5 on impact.

The efficiencies in OSBP infrastructure have also reported to improve the movement of non-trade population in Uganda. Students from South Sudan and Goma (DRC) who are one of the key demographics have easier and improved access to educational institutions in Uganda. With improved ease of travel, reportedly leading to more frequent crossings and increased number of students accessing institutions as per qualitative interview with OSBP immigration staff in both Goli and Elegu. Further, refugees and asylum seekers are also engaged in the OSBPs, where the OSBP staff coordinate with IOM and UNHCR on registration and transfers.

"Students are one of the key demographics. South Sudanese students access education in Uganda and travel back during holidays and term breaks. It makes a difference if the process is easier because more youth access the same places." – Elegu OSBP Staff

The OSBPs have been effective in streamlining the processes and requirements for EAC countries. Integrating clearance processes and streamlining requirements has become vital for countries like South Sudan which became a member of the EAC in 2016 and DRC in 2022.

4.6. *Unintended Outcomes*

There is some evidence that the infrastructure projects produced changes beyond their intended outcomes. Unintended outcomes from the projects include both positive and negative consequences.

Improved facilities at the OSBPs were found to have allowed for improved quality of healthcare; from improved hand washing facilities; to increasing the privacy of users; to engaging with border officials regarding screening and vaccination. The screening agent at Goli OSBP reported *"Previously we used to operate under a shed, this*

[30] Mombasa West- Endline Study Phase 1, 2022
[31] Final report for the endline study on the Berbera corridor, TradeMark Africa, August 2023.
[32] Uganda National Bureau of Statistics (UBOS) as reported in Endline Evaluation of UPSIDE Project, Dec 2023
[33] Third Party Monitoring and Activity Verification Visit Mahagi, 2024

meant everyone had to queue outside while vaccination cards were checked, it was lacking in decent space for any further issues to be raised".

The Goli OSBP project has also observed unintended negative consequences. The high-level infrastructure and formalisation of processes is deemed by some CBTs to be intimidating, anticipating higher procedural costs or taxes and therefore avoiding usage of buildings. While this is not pervasive it highlights the need for sensitization beyond the cooperatives and structured trade associations.

Also, as evidenced in Section 6 on efficiency, there are cases in the transport infrastructure portfolio where works proceeded without receipt of funding for the entire project, specifically for the OSBPs. At the time of this evaluation, neither Goli-Mahagi nor Nimule-Elegu are functioning OSBPs as described in TMA's OSBP Sourcebook (Second Edition).

Although completing all works in one side of the border may be viewed as progress and as discussed in this report has already led to some positive trade facilitation outcomes, it leads to resource wastage, rising costs and makes it more complex for trading partners to fully harmonise. A challenge to this point is that the actual expenditure of a project is only fully realised during the civil works and can be difficult to fully predict in advance. This was the case in Hargeisa, where although the road was completed on time, design concessions were made (e.g. limited hard shoulders and reduced accessed points, which all impact on project effectiveness) to ensure project completion.

Effectiveness in enabling Women Cross Border Traders

TMA's trade infrastructure investment in upgrading border posts has influenced the operating status of women cross border traders (CBTs) in the region. Quotes gathered by the evaluation are shown throughout this box text.

The situation before the TMA intervention. CBTs operating in the area faced significant safety and security challenges in conducting trade as per the baseline OSBP studies. Further, the traders faced issues of paying high bribes and facilitation fees, charges for goods and services despite trading in low volumes. Further, the risks of harassment and theft were exacerbated among traders who used porous routes. The lack of security also discouraged women from participating in trade as reflected retrospectively by a CBT in Elegu.

"There has been a significant improvement in safety and security. The OSBP has improved the overall environment for traders, reducing the risks that women previously faced, such as theft and harassment, especially in informal crossing points."

The OSBP intervention. The OSBP physical infrastructure development included development of entry and exit roads, separate toilet facilities for men and women and lighting in the area. Apart from OSBP development, supplementary TMA interventions like Women in Trade undertaking formation of cooperatives, trade information desk at border posts have focussed on cross border traders.

The situation after the TMA intervention. CBTs have reported drastic reduction in waiting time, higher support available from border staff and improved safety. Specifically, streamlining and implementation of Simplified Trade Regime, and the issuing identity cards to women traders have significantly improved the ease of crossing in Goli-Mahagi.

"Women traders no longer rely on informal crossings. At the border posts, there is support from EASSI and border officials to handle any challenges that arise."

"The harassment has decreased, and we now have access to better facilities, including proper toilets, storage, and even information about market prices."

"The process is definitely more efficient now. With reduced waiting times, fewer fees, and streamlined procedures, we spend less time at the border and more time focusing on our businesses."

Traders report increased and easier market access with traders in Goli crossing to Mahagi for bi-weekly markets with reduced costs incurred on bribes. Traders reported 30% increase in monthly trade volumes due to increased market access. Further, enterprises and traders reported procuring goods and products by availing price related information from Trade Information Desk situated at the OSBP. For instance, the early harvest season of coffee in DRC means procurement in DRC and selling in Uganda at a higher price. 86% of CBTs in Goli and 78% in Elegu reported being able to obtain better price for their products across the border.

The OSBP interventions coupled with Women in Trade intervention has resulted in increased agency among women as well as improved institutional structures for women traders. The operation of cross-border trade cooperatives facilitated by Eastern African Sub-regional Support Initiative for the Advancement of Women (EASSI) has increased in the area with 7 cooperatives reported to be operating in the Goli-Mahagi and Elegu areas. Traders reported receiving EASSI trainings on Simplified Trade Regime and were aware of the processes and documentation needed to conduct cross border trade. The growth of the number of cooperatives and within cooperatives is demonstrated in the story of "Goli Women Cooperative" as shared in an IDI with the chairperson of cooperative. The group was initiated with 5 members and was registered as a cooperative at 30 members and has grown to more than 45 members reflecting the increased women's economic participation. The cooperative operations have progressed to produce pooling, undertaking large scale orders and processing.

"Being part of this group has given me more power, both in business negotiations and in accessing government support."

Traders reported receiving market related information, support from the trade information desk office to conduct operations. The CBT association representative has been allocated a desk space within the Goli OSBP to further integrate coordination and management of the women traders' operations. The OSBP has initiated maintenance of a ledger to ensure documentation of the border trade without increasing procedural load for traders.

"CBTs have higher attention now, as we are able to understand from the counterpart and discuss the issues being faced, ensure harassment is not an issue."

5. IMPACT

This section explores the wide-ranging impacts of TMA transport interventions, structured to examine economic, social, environmental, and cross-cutting dimensions. By focusing on changes, the section highlights how infrastructure improvements have influenced trade dynamics, employment patterns, and local economic growth, with an emphasis on the role of connectivity in fostering equitable development.

The economic impact section focuses on growth in trade volumes, market efficiency, and job creation, followed by a social impact overview exploring transformative effects on inclusion, participation, and access to essential services. The environmental impact section outlines both positive and negative outcomes, while the cross-cutting impact section synthesises interconnected gains across socio-economic and environmental domains.

The TMA transport initiatives were implemented within a complex, multi-layered environment, making it challenging to directly attribute reported results solely to TMA actions. This challenge becomes more pronounced as the observed benefits extend further from the core objectives of the interventions. In this section, we present findings based on primary research while acknowledging these limitations. These constraints should be considered when interpreting and contextualising the reported outcomes.

5.1. *OVERALL ASSESSMENT ON IMPACT*

TMA transport interventions have enhanced trade efficiency, strengthened local economies, and improved access to essential services across the region. By streamlining border operations and upgrading infrastructure, the programme has contributed to increased trade volumes, local enterprise growth, and employment opportunities. Women traders and small-scale enterprises have benefited from tailored facilities and training initiatives, fostering inclusivity and economic resilience. However, challenges persist, including trade imbalances, environmental concerns, and persistent safety risks for vulnerable groups. While the programme has driven significant progress, continued attention to environmental sustainability, equitable stakeholder engagement, and systemic safety improvements remains critical for maximising long-term impact.

5.2. *ECONOMIC IMPACT*

5.2.1. TRADE AND MARKET DYNAMICS

TMA transport interventions have significantly increased trade volumes and reshaped market dynamics, strengthening economic activity in the region. For example, Mombasa's port experienced a 90% growth in cargo volume between 2009 and 2019, while trade at the Goli-Mahagi border doubled between 2019 and 2022. This increase in trade across at Mombasa is partially attributable to the TMA intervention. At a formal level, *"Cargo throughput has increased due to the streamlined operations"* (KII, County Government of Mombasa), while at an MSME level, at the Goli-Mahagi border a local respondent reported, *"The new facilities have made crossing quicker and safer, reducing the time and cost associated with crossing. This has allowed women traders like myself to increase our trade frequency and volume."*

At the Nimule-Elegu One-Stop Border Post (OSBP), trade volumes grew by 30% between 2016 and 2021, showcasing the efficiency of improved transport facilities. Daily vehicle flows also increased, ensuring the timely delivery of essential goods like food and humanitarian aid. Additionally, Mombasa's port saw a 140% rise in cargo handled at container freight stations[34], and the Hargeisa Bypass contributed to a 29% boost in Somaliland's export values, particularly for livestock, which saw a 44% increase from 2020 to 2022.[35] These

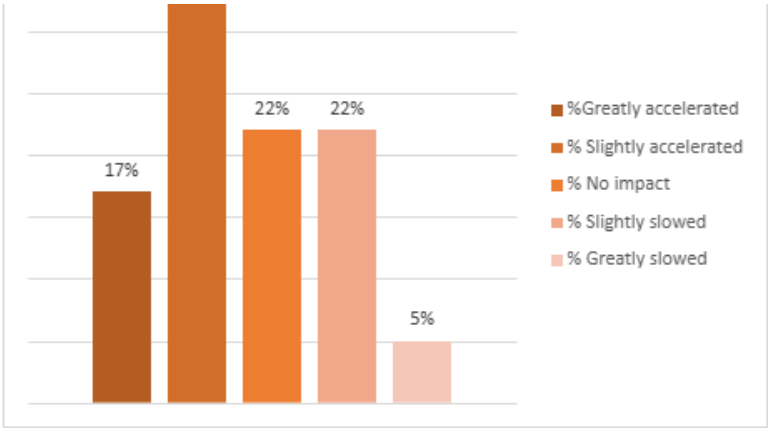
[34] Endline Survey Report for Mombassa West Roads Improvement Programme, TradeMark Africa, November 2023
[35] Final report for the endline study on the Berbera corridor, TradeMark Africa, August 2023.

outcomes underscore the pivotal role of strategic infrastructure investments in fostering economic resilience and improving trade efficiency.

The Mombasa Roads project reduced truck turnaround times at the port from 7 hours (2019) to 3 hours (2023), significantly enhancing logistics efficiency.[36] Similarly, the Nimule-Elegu OSBP cut customs clearance times by 83%, enabling faster and more cost-effective trade between Uganda and South Sudan, a region heavily reliant on food imports and humanitarian aid. A Kenya Port Authority official stated, *"TMA's support has been instrumental in addressing congestion at the port gates and improving road connectivity."*

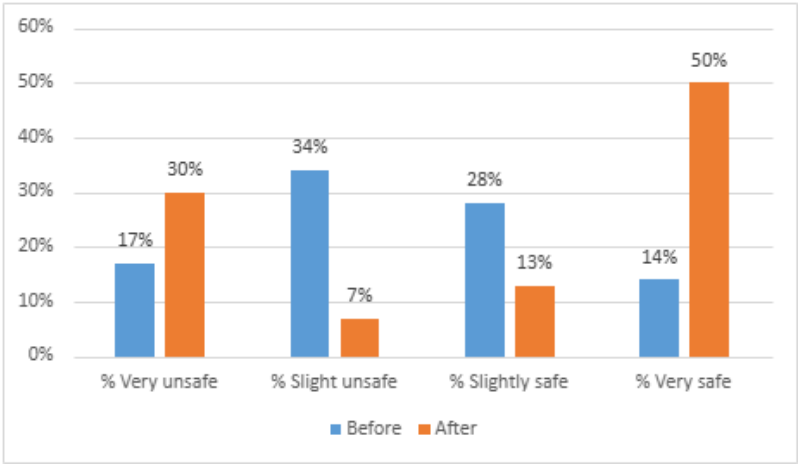
Fifty percent (50%) of the respondents from the road projects evaluation reported that the road projects have spurred their business growth, with only 27% claiming that the projects have negatively affected their business growth.

Figure 13: Impact of roads on business growth among MSMEs in Kenya



In addition, these same businesses perceive a greater level of security and safety for their businesses since the roads have been improved.

Figure 14: Perception of business security before and after roads



The reasons behind revenue growth and increased security levels are explored further in case studies conducted with two female business owners / managers based along Airport Road and Port Reitz Road in Mombasa (see Text Box 1 and Text Box 2). These two female entrepreneurs are uniquely placed to comment

[36] Mombasa Roads ENDLINE Survey Report, TradeMark Africa, December 2023. Figures related to export trucks.

on *change* in business outcomes as their business remained in the same location, before and after the road development. Primary reasons behind increase in business revenue from case study respondents include (i) increased customer access (even when it rains) and (ii) more efficient access to the market to buy stock, enabling more time to being spent at the shop. The advent of street lighting meanwhile appears to have greatly improved safety and security of MSMEs along the Mombasa roads developments, as increased lighting as reduced the volume of local robberies.

However, challenges remain. Trade imbalances are a persistent issue. For instance, at the Goli border, while exports increased, imports fell from $5.9 million in 2018 to $4.4 million in 2022. Similarly, at Nimule-Elegu, 98% of trucks returning to Uganda from South Sudan travel empty, highlighting limited reverse trade flows.

Text Box 1: A Safer Road, A Stronger Business

For years, my small retail shop stood along Port Reitz Road in Mombasa. It had been there long before the road was properly developed, and in those early days, business was a constant struggle. Customers were few, access was difficult, and security was a major concern. My monthly income barely reached Kshs 15,000, and at times, I wondered how long I could keep going.

Then, everything changed.

When the road was developed, the transformation was immediate. More buildings appeared, bringing an influx of people into the area. Suddenly, there were more potential customers walking past my shop every day, and my sales steadily increased. My income jumped to around Kshs 25,000 per month. "With the construction of the road, the area has become very busy... this as a result has increased the customer base hence higher sales translating into higher revenues."

But it wasn't just the new foot traffic that made a difference—it was also how much easier it became for customers to reach me. Before, the road was narrow and constantly clogged with traffic, discouraging people from making the trip. Worse still, poor drainage meant that during heavy rains, water—and sometimes even sewage—would overflow onto the walkways. Many customers simply avoided the area. Now, with the road expanded and the drainage fixed, people no longer hesitate to visit. "Traffic jams have reduced significantly, making it easier for the customers to access the shop."

The biggest change, however, was in security. Before the road construction, crime was a daily threat. Heavy traffic gave robbers the perfect opportunity to target motorists, and the lack of proper lighting made it unsafe to move around after dark. Many people were afraid to live or run businesses in the area, and those who could, left. "When robberies happened in the area, many people would choose to relocate for fear of their businesses being the next victims."

That all changed with the installation of security lights—Mulika Mwizi. These lights deterred criminals, and now, robberies are far less common. The difference is clear: I no longer worry about my safety every evening, and I can keep my shop open for longer hours, leading to even better sales. "Business owners can now open their businesses for longer hours as compared to the period before construction."

Looking back, I can confidently say that the greatest benefit of the Port Reitz Road development has been the improved security. "Safety and security are the key to everything happening around here." Without them, businesses struggle to survive. With them, we thrive. Today, I no longer operate in fear. I run my shop with confidence, knowing that my business—just like this road—has a solid foundation for the future.

5.2.2. Employment and Local Economic Growth

Transport interventions have created significant employment opportunities and impacted local economies. In Mombasa, 59% of households reported improved job opportunities[37], although gender disparities were evident, with men (66%) more likely to benefit than women (44%).[38] Evidence of local economic growth was presented in a published video by FCDO in February 2025. The video highlighted how communities around the round developments in Mombasa benefitted, specifically the encouragement of local women to setup businesses.[39]

Text Box 2: Better Road, Better Business

For as long as I can remember, my vegetable shop has been part of Airport Road in Mombasa. Before the road was developed, running my business was a daily struggle. Customers often couldn't reach me, heavy rains would flood the area, and I constantly worried about security. My monthly income varied, but on average, I earned around Kshs 20,000—just enough to keep things going.

Then, the road was improved.

One of the biggest benefits was how much easier and cheaper it became for me to travel to Kongowea Market to restock my shop. Before, my commute took far too long, eating into both my time and profits. Now, with better roads, I can get to the market quickly and be back in time to serve my customers. "It is now easier and cheaper for me to commute to the market... before the road construction, it would take me a very long time to commute to the market and back. This ate into my revenues."

The road upgrade also made my shop far more accessible to customers. Previously, every time it rained, the drainage system would fail, flooding not just my shop but also nearby homes. At times, the water even swept away my kibanda, forcing me to close down completely. Those were some of the hardest days—watching my business literally get washed away while customers had no way to reach me. "Before the road construction, the water would sometimes sweep away my shop (kibanda). My customers could not find me during these tough times." Now, with proper drainage in place, my shop remains open even during heavy rains, and customers can reach me without difficulty.

Perhaps the most important change has been in security. Before, the area was poorly lit, and businesses like mine were often targeted by robbers. I relied on rechargeable lights, but they weren't enough, and I never felt truly safe. After the road was developed, security lights were installed, and crime in the area dropped significantly. "This has really contributed to a reduction in crime in the area. I can now open my business for longer periods and make more sales as compared to before the construction."

Looking back, the greatest benefit of the road construction has been the improved security. Without it, I wouldn't have the confidence to keep my shop open late or invest in growing my business. "The main benefit of the road construction is the improvement in the security of the area. I feel safer currently and can open my business until late. This couldn't be done in the past." Now, with a safer, more accessible shop and a smoother supply route, I am earning more, serving more customers, and looking forward to an even brighter future.

This evaluation did not manage to uncover quantitative evidence of permanent, sustained job creation, but along the Hargeisa Bypass, 487 temporary jobs were created, with 175 of these allocated to youth[40]. Further, qualitative evidence from councillors point to an increase in jobs being created, See Table 11. Seasonal jobs

[37] Mombasa Roads ENDLINE Survey Report, TradeMark Africa, December 2023. This was a 9% increase on the baseline measurement.
[38] Mombasa Roads ENDLINE Survey Report, TradeMark Africa, December 2023.
[39] FCDO Agenda 2063 video published on LinkedIn February 2025.
[40] Final report for the endline study on the Berbera corridor, TradeMark Africa November 2023

during construction phases also provided vital income for many local workers, contributing to immediate economic relief for underserved communities.

Table 11: Councillor perceptions of local economic growth

Location	Opinion
Elegu Local Councillor	Jobs created include those in transportation (truck drivers, border transporters), retail and wholesale businesses, customs and immigration services, security services (border patrols), port health and agricultural inspection services, hospitality (hotels and restaurants), and trading activities. Several hundred people have been employed either directly or indirectly due to the increased border activities, with estimates ranging from 300 to 500 individuals depending on the specific sectors.
Goli Local Councillor	Goli town's economy has become more dynamic compared to similar towns: A mix of wholesale and cross-border trade. Over 70% of residents are involved in trade, transportation, or support services. For example, since 2022, small enterprises selling DRC-imported textiles have increased. Additionally, the diversity of goods traded, such as agricultural produce, textiles, and electronics, is thriving. New job types have emerged such as Customs agents and clearing services. Some natives have joined as security personnel at the OSBP. Transport operators engaged in transporting of good and passenger have emerged. Quote: "Approximately 300 jobs have been created between 2020 and 2024". "Approximately 100-200 new jobs have been created in the last five years"

Additionally, there are numerous reports of increased economic activity, reflecting the economic benefits of the project. The increase in traffic flow has improved the availability of customers and traders as well as local SMEs have reported improved revenue. For example, our research discovered daily room rate for accommodation providers was 5000 UGX before 2019, which has changed to 15,000 UGX in 2024 both due to increased demand, and improvement in quality of offering.

"There is increased rent for shops near OSBP, due to competition from more informal traders coming into play." – Border SME

"Sometimes the high volume of customers can be overwhelming, and managing cash flow becomes a challenge." - Border SME

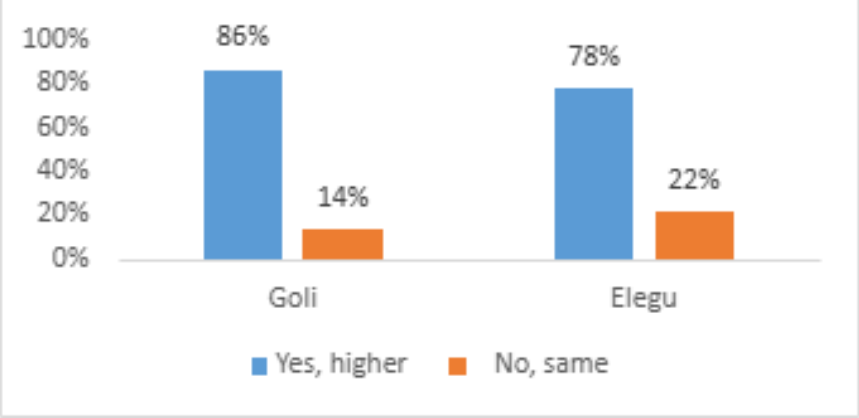
However, traders have also reported high cost of living with increased operating costs. Furthermore, the change in scale of business and availability of customers sometimes has not necessarily translated to growth in MSME businesses as there is a gap in their being able to access to financial services and credit to ensure working capital availability.

The Goli-Mahagi OSBP significantly reduced customs processing times from 8 hours to 3 hours, enabling small-scale traders to access broader markets. Decentralised UNBS laboratories in Uganda and the DRC created sustainable employment opportunities while lowering certification costs. These decentralised facilities also fostered entrepreneurship by reducing operational costs for businesses. A KII respondent from Elegu noted, *"There are employment opportunities in boda boda riding as a result of OSBP, many people have established restaurants because of the need for food as a result of many people crossing the border."*

As a result of the cross-border traders having received training in the Simplified Trade Regime together with the faster processing time for border crossings has allowed this group to take advantage of price differentials

across borders. This is evidenced in most CBTs in both Goli and Elegu reporting that higher prices are available for certain goods on the other side of the border, as presented in Figure 15.

Figure 15: CBTs reporting better price for goods across the border



Economic diversification has been reported. In Hargeisa, new businesses such as bakeries and logistics firms emerged alongside improved infrastructure. Similarly, increased cross-border trade introduced goods like textiles, electronics, and agricultural inputs, which were previously unavailable.

5.3. *Social Impact*

5.3.1. Access to Essential Services

Transport interventions have improved access to essential services, enhancing the quality of life in affected communities. In Mombasa, 58% of households reported better access to healthcare and education,[41] while road improvements resulted in a reported 52% increase in access to goods and services.[42] The Hargeisa Bypass reduced travel times for school-aged children by 13%, leading to more higher levels of access to education.[43]

Enhanced connectivity along the Berbera Corridor facilitated Ethiopia's access to Berbera Port, reducing dependency on longer, costlier routes. This improvement allowed Ethiopian traders to expand their market reach, increasing the availability of goods in both urban and rural areas. Furthermore, 67% of residents along the Hargeisa Bypass reported increased land values, while 61% noted higher rental prices, underscoring the transformative economic effects of improved infrastructure.

5.3.2. Community Inclusion and Participation

Efforts to promote inclusion have seen varied levels of success. At the Elegu Women and MSME Cross-Border Market, tailored facilities such as secure storage and rest areas supported year-round operations, significantly improving economic opportunities for women. Training programmes further enhanced women's capacity to engage in formal trade, fostering long-term empowerment and independence.

Conversely, gaps in inclusivity were noted in Hargeisa, where 64% of surveyed households indicated that women were not adequately consulted during project planning. This highlights the importance of structured stakeholder engagement to ensure marginalised groups benefit equally.

[41] TradeMark Africa (2024). Mombasa Roads Endline Survey Report. TradeMark Africa.
[42] TradeMark Africa (2024). Mombasa Roads Endline Survey Report. TradeMark Africa.
[43] Final report for the endline study on the Berbera corridor, TradeMark Africa, August 2023.

5.4. *ENVIRONMENTAL IMPACT*

Intuitively it would be assumed that TMA transport interventions have contributed to reduced greenhouse gas emissions and improved air quality, for example, between 2019 and 2022 Mombasa's traffic congestion dropped by 75%, leading to lower vehicle emissions. *"Road users interviewed have reported a 73% reduction in the amount of time it takes to get to work while the time spent in road congestion (traffic jams) has reduced by 75%."*[44] However, evidence for this is unclear. As infrastructure investments result in more efficient transport movements, traffic volumes have also increased. As a result of a 90% rise in cargo volume at the Port of Mombasa, a TMA study has shown that GHG emissions increased, possibly because of a 92% increase in freight traffic resulting in a 170% surge in CO_2 emissions from regional road transport.[45] While the study reported an absolute increase in CO_2 emissions due to increased traffic, it is unclear whether the trend was below the business-as-usual curve i.e. absolute CO_2 emissions would have been greater had it not been for TMA's interventions. This is an area of worthy of further study.

Conversely in terms of efficiency, with constant traffic numbers, the situation is quite different. For example, at the Goli-Mahagi border, streamlined processes reduced truck idling times, cutting fuel consumption and emissions. Evidence from across the world supports the finding that reduced border queuing times is a crucial and effective measure in lowering greenhouse gas (GHG) emissions.

Research from various global case studies, including the U.S.-Mexico border, South Asia, and Africa, shows that long border delays lead to excessive vehicle idling, increased fuel consumption, and higher emissions. By improving infrastructure, alongside efficient border processing, emissions from freight transport can be significantly reduced. Research which supports this includes that from the US-Mexico border in Texas which found that air pollution peaks when queue lengths exceed 270 metres, with emissions declining tenfold at 200 meters from the border due to dispersion.[46] Also, on the US-Mexico border, emissions from idling vehicles at congested ports of entry are estimated to be twice as high as those from free-flowing traffic, emphasizing the environmental impact of border inefficiencies.[47] Another simulation study of U.S. border crossings found that prolonged queueing times significantly increase emissions of carbon monoxide (CO), nitrogen oxides (NO_x), and fine particulates ($PM_{2.5}$), worsening air quality for local communities.[48]

The World Bank studied congestion at the Bangladesh-India border and found that congestion, including delays at land borders, accounts for 50–70% of freight truck emissions in Bangladesh. Eliminating congestion could cut these emissions by over 50%, with an estimated economic benefit of US$1.6 billion per year.[49]

While this evaluation was unable to quantify the exact GHG reduction impact of improving border efficiencies at the TMA-funded OSBPs visited, there is a strong body of evidence which supports the conclusion that there is a positive environmental and air quality impact from improving border efficiency.

[44] Mombasa West Endline Study Phase 1, TradeMark Africa, July 2022
[45] TradeMark Africa (2023). Mombasa Roads Endline Survey Report. TradeMark Africa. It is possible that the GHG per volume unit has decreased but the evaluation team did not have access to the collected data to verify or refute this
[46] Chavez, M.C., Williams, E., Vazquez, L., Li, W. (2024). Quantification of Traffic-Related Emissions and Exposures at U.S. Ports of Entry. Center for Advancing Research in Transportation Emissions, Energy, and Health (CARTEEH).
[47] Reyna, J., Vadlamani, S., Chester, M., Lou, Y. (2016). *Reducing Emissions at Land Border Crossings through Queue Reduction and Expedited Security Processing.* Transportation Research Part D: Transport and Environment, Vol. 49, pp. 219–230.
[48] Stewart, B., Moya, H., Raysoni, A.U., Mendez, E., Vechione, M. (2023). *Port-of-Entry Simulation Model for Potential Wait Time Reduction and Emission Improvements.* CivilEng, 4(1), 345–358. DOI: 10.3390/civileng4010020.
[49] World Bank (2024). *Emissions Impact of Border Queues in Bangladesh.* Washington, D.C.: World Bank Group.

The Mombasa roads project also addressed chronic flooding through improved drainage systems, safeguarding economic activities and ensuring continuity of trade operations. A County Government of Mombasa official stated, *"The drainage has helped preserve businesses along Nyerere and Mbaraki roads that used to suffer from frequent flooding."*

Investments in the Hargeisa Bypass included durable road designs that reduce emissions through smoother traffic flow and reduced congestion. A Kenya Maritime Authority official stated, *"Flood prevention and drainage improvements under the Charter have mitigated climate risks, benefiting schools and communities."*

However, the perception of the respondents in the road project areas regarding mitigated environmental risk is mixed. There were marginal decreases in the perceived risk of flooding, shelter from rain, business accessibility because of mud, and noise pollution reported, while the risk perceptions of open drainage and air pollution increased marginally across all projects. These perceptions correspond with recorded responses as to whether the road project addressed environmental risks, where just under half of the respondents reported that the project only slightly addressed these risks. *"Some people have closed their businesses because flooding has cut off the roadsides. Vehicles cannot stop, and people cannot pass when it rains."* MSME Owner, Hargeisa.

Figure 16: Change in types of environmental risks perceived by respondents

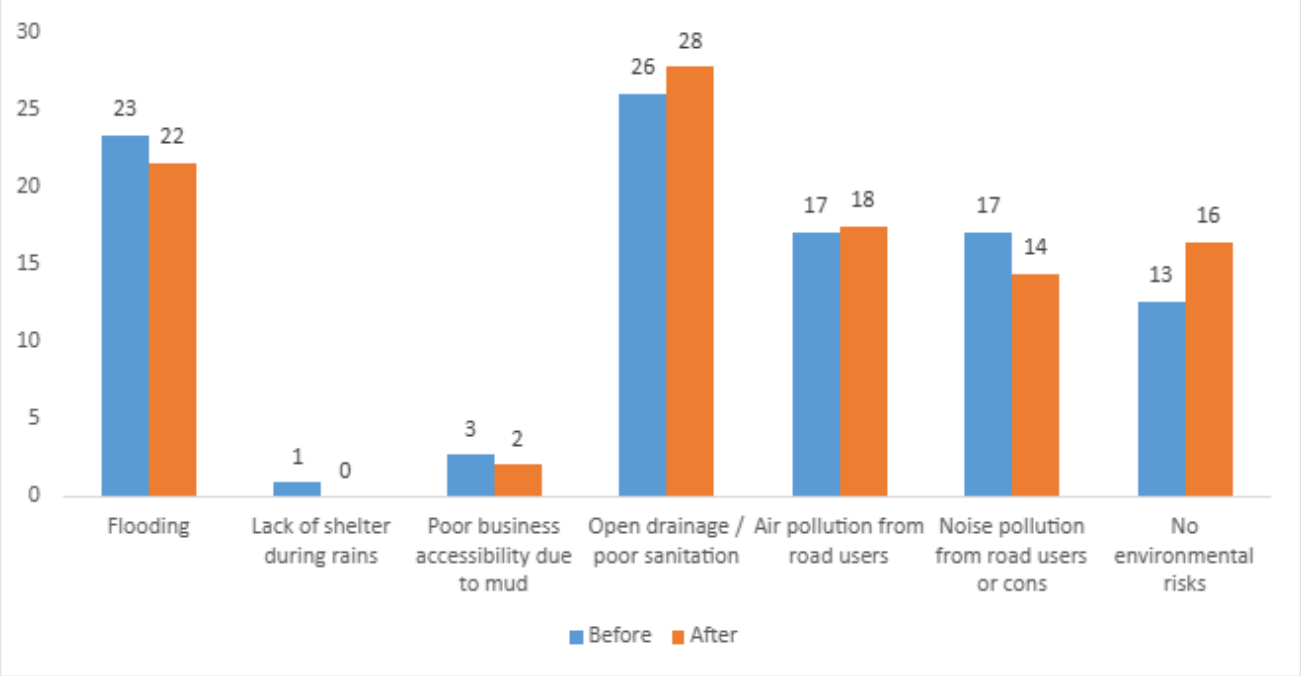


Figure 17: % change in types of environmental risks perceived by respondents by project

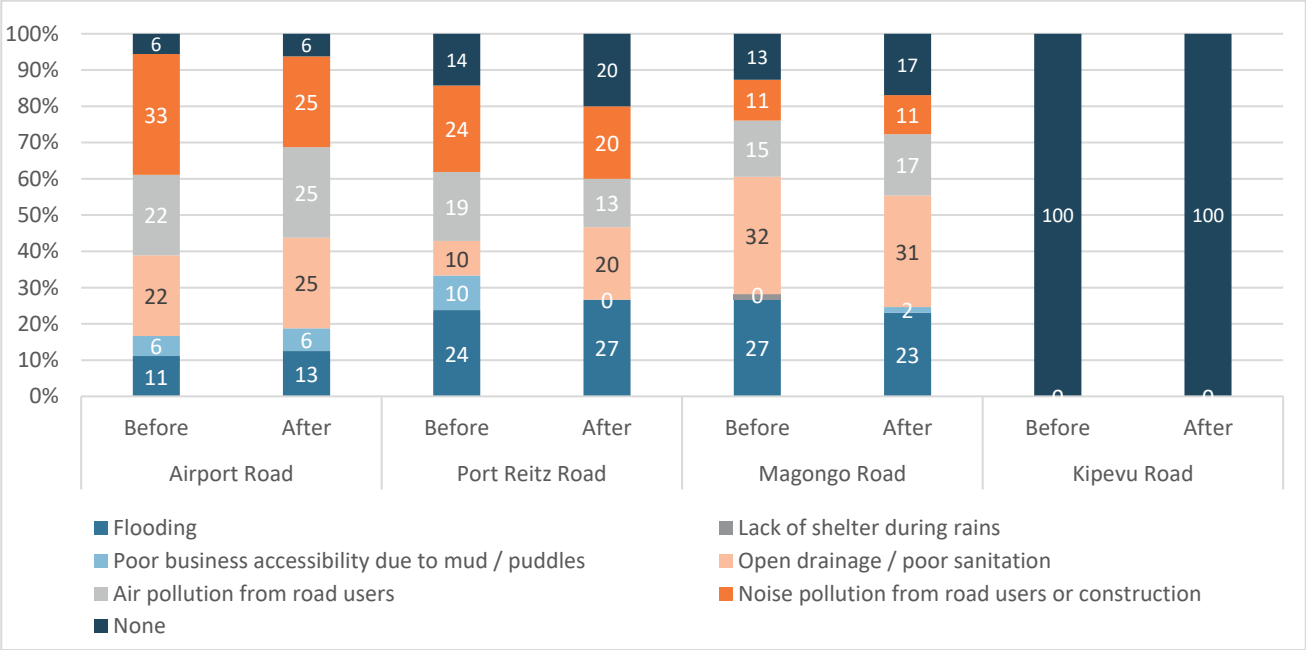
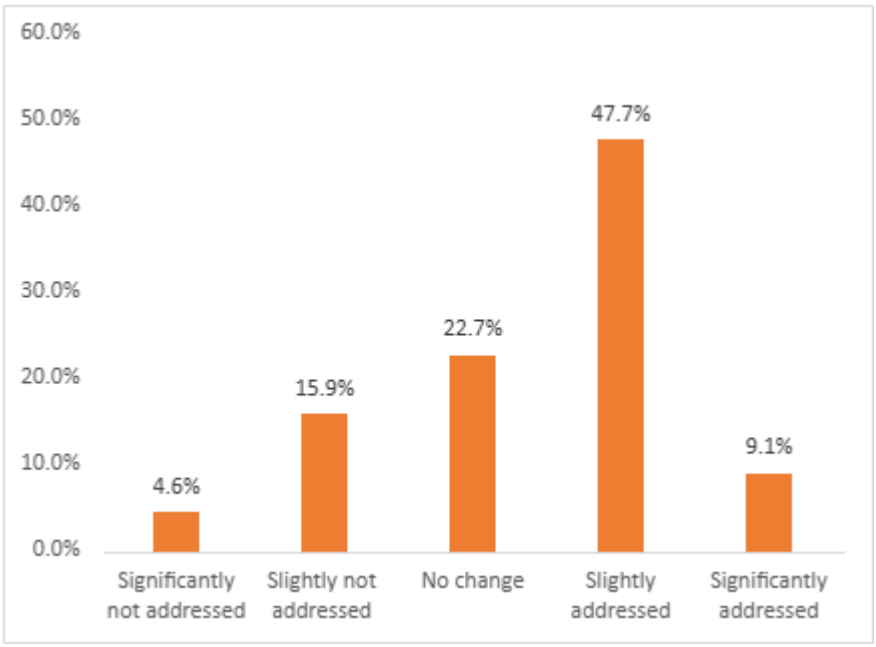


Figure 18: Perceived extent to which environmental risks are addressed



6. EFFICIENCY

The efficiency criterion of the OECD-DAC Evaluation Criteria is concerned with the central question of *how economically resources are utilized to achieve the outcomes of the transport infrastructure portfolio.* By resources, we mean the time, money, expertise, materials that are being used optimally to achieve the desired outputs and outcomes. It also explores the extent to which outcomes generated from the portfolio have led to efficiencies in site operations – whether that be highways, ports or OSBPs. This section contains evidence related to the following areas:

- ✓ Time and budget sensitive delivery of projects;
- ✓ Resource wastage and optimal resource use; and
- ✓ Examples of efficiency gains at ports, highways and OSBPs.

Before discussing these topics, we outline and discuss TMA's project implementation model for the transport infrastructure portfolio using evidence shared from one of the Resident Engineers in the Mombasa Roads development. This also provides the context for understanding portfolio efficiency.

6.1. *OVERVIEW OF TMA TRANSPORT INFRASTRUCTURE IMPLEMENTATION MODEL*

TMA adopts a highly collaborative project implementation model for delivering transport infrastructure across Africa. TMA serves as an intermediary between international donors (e.g., governments like the UK or other development partners) and recipient governments. Donors provide funds to TMA with the expectation that TMA will ensure efficient project implementation.

In terms of the project funding model, TMA employs a flexible, project specific funding model, which can range from co-funding with national governments through to funding 100% civil works for transport infrastructure projects. The co-funding approach typically involves partial funding of civil works components while collaborating with national governments and other stakeholders to share responsibilities and costs.

TMA's funding typically covers specific aspects of the project, such as:

- ✓ Road construction and rehabilitation; and
- ✓ Operational costs like engineering supervision and project management.

For example, TMA funded 47% civil works for Mangongo Road (Mombasa) and 71% civil works for Airport Road (Mombasa), while the Government of Kenya funded the rest.[50] As part of the funding formulae across the portfolio, national governments are expected to contribute toward complementary components, such as land acquisition and administrative processes. TMA, and its donor partners, do not fund land acquisition costs.

To ensure all stakeholders are clear on the project funding terms, TMA enters into financing agreements with governments and stakeholders before projects begin. These agreements outline the division of responsibilities, ensuring that TMA's funding is used for specific deliverables while governments handle related costs like compensation for land acquisition. It is these financing agreements which are viewed as a key efficiency pillar and prevents TMA from getting locked into funding disputes.

[50] KII, Resident Engineer, Mombasa Roads

"TMA's financing agreements with national governments are always very clear and transparent. They clearly state what TMA will fund and what funding is the responsibility of government. There are also clear clauses that protect TMA in the event of project delays." – Resident Engineer, Mombasa Roads

TMA often injects funds earlier in the project lifecycle to ensure infrastructure functionality (e.g., completing significant parts of roads to make them operational). Once TMA's allocated funds are exhausted in co-funded projects, governments are expected to step in to address any remaining needs, such as completing additional lanes or paying for land acquisition delays. However, exhausting all allocated funds early in the project cycle is not always the preference for TMA, and they require strong justification from project teams before agreeing to such demands, as is highlighted in the case of Mangongo Road, Mombasa.

"TMA preferred to space their funding out across the project cycle. However, I had to convince them to front load the full 47% civil works funding. I made the case that front loading that funding would guarantee that roughly half of the road could be complete and operational. This would allow local authorities to easily manage traffic, the water system and dust". – Resident Engineer, Mombasa Roads

As is the case with the evaluable projects in this portfolio, TMA adopts a design and build (D&B) construction model, which sees a single contractor contracted to lead to the design and construction processes.

Reflecting on TMA's implementation model, the Lead Engineer for Mombasa Roads projects remarked:

"TMA has a highly efficient implementation model that effectively wins international donor funding that can be utilised for project funding…its preference for design and build models is much preferred as it circumvents national government department bureaucracies. For example, with Magongo Road, had we requested a design concept from KenHA, it would have taken two years for a brick to be laid. D&B, combined with TMA's willingness to front-load funding, enables projects to make significant progress in a short period". – Resident Engineer, Mombasa Roads.

Finally, it is also clear that implementing transport infrastructure projects is a highly political exercise and the overall project efficiency is somewhat beyond the control and scope of TMA but a risk area where the organisation has vast experience in navigating. These considerations should also be factored in when raising funds and planning project timelines and budgets.

6.2. *TIME AND BUDGET SENSITIVE DELIVERY OF PROJECTS*

Assessing the extent to which a transport infrastructure project is completed 'on time' can be interpreted two ways: (i) is the project completed in the timeframe in line with the initial design specification; or (ii) is the project site operational within the timeframe? Option two is probably the best lens to assess completion of the TMA's evaluable transport infrastructure projects, as it presents a lower bar, and appreciates some degree of deviation from the original design to fit with an evolving funding landscape. Evidence from the evaluable project sites show TMA has faced a particularly challenging funding landscape during the Strategy 2 period (2017-2023) where the onset of COVID-19 contributed to changes in funding and rising costs.

In terms of assessing whether the projects and portfolio as a whole were 'on budget', we use the portfolio budget and expenditure figures for the Strategy 2 period (1st July 2017 to 30th June 2023) shared by TMA as our primary source.

The results of our analysis by evaluable project are found below using a RAG rating:

- ✓ **Red – Project not completed on time or on budget.**
- ✓ **Amber – Some of the project completed on time / budget.**
- ✓ **Green – Project completed on time / budget.**

Table 12 Project time and budget RAG rating

Project	Time	Budget
Mombasa Roads		
Hargeisa Bypass		
Goli-Mahagi OSBP		
Nimule-Elegu OSBP		

Overall, we observed some challenges to achieving full completion of the transport infrastructure projects within the Strategy 2 period. Only the Hargeisa Bypass and most of the Mombasa Roads infrastructure can claim full completion, while none of the OSBPs we visited were fully operational at the time of our visit.

TMA's transport infrastructure investment portfolio exceeded its budget for the period of 2017-2023 by 15% (original budget USD $57,989,307 v. final expenditure USD $ 66,867,666). As presented in Table 13 below, five out of seven projects were underspent, while the two roads projects (Mombasa West and Berbera Transport) overspent, which contributed to the overall portfolio overspend (USD $ 8,878,359 – 115%).

We note the figures in Table 13 are for the Strategy 2 period. There was additional budget allocation ($3,359,009) and expenditure ($2,115,775) reported between 1st July 2023 and 30th June 2025. As this evaluation focuses on the Strategy 2 period, we omit these figures from the following analysis.

Table 13 Portfolio budget v expenditure table 2017-2023 (USD)

Project Name	Budget 01/07/2017 - 30/06/2023	Expenditure 01/07/2017 - 30/06/2023	Variance	% Spend
Mahagi OSBP Infr upgrade	3,049,749	2,376,836	672,914	78%
Mombasa Port Resilience	12,986,464	12,345,572	640,892	95%
Mombasa West Int Urban Road n/w	9,440,593	18,623,110	(9,182,518)	197%
Goli OSBP	3,040,815	2,581,891	458,923	85%
Elegu OSBP	6,130,056	3,804,985	2,325,071	62%
Nimule OSBP Construction	4,417,196	3,882,540	534,656	88%
Berbera Transport & Port Infra	18,924,435	23,252,733	(4,328,298)	123%
Total	**57,989,307**	**66,867,666**	**(8,878,359)**	**115%**

Table 14 Project budget per financial year (2017-2023) (USD)

Project Name	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	Total S2 $
Mahagi OSBP Infr upgrade	460 000	30 369	912	470 854	470 496	706 031	3 049 749
Mombasa Port Resilience	1 561 748	506	- 908	802 082	292 401	12 986 464	9 825 140
Mom West Int Urban Road n/w	1 125 000	1 858 771	3 754 040	973 433	753 799	975 549	9 440 593
Goli OSBP	-	-	400	654	1 347 959	1 292 201	3 040 815
Elegu OSBP	3 717 000	1 656 706	346	410 35	-	-	6 130 056
Nimule OSBP Construction	500	2 000 277	1 724 978	191 175	766	-	4 417 196
Berbera Transport & Port Infra	-	185	1 899 394	3 257 516	8 591 987	4 990 538	18 924 435
Total	**7 292 871**	**9 542 411**	**5 303 074**	**11 967 089**	**8 256 721**	**57 989 307**	**57 989 307**

Table 15 Project expenditure per financial year (2017-2023) (USD)

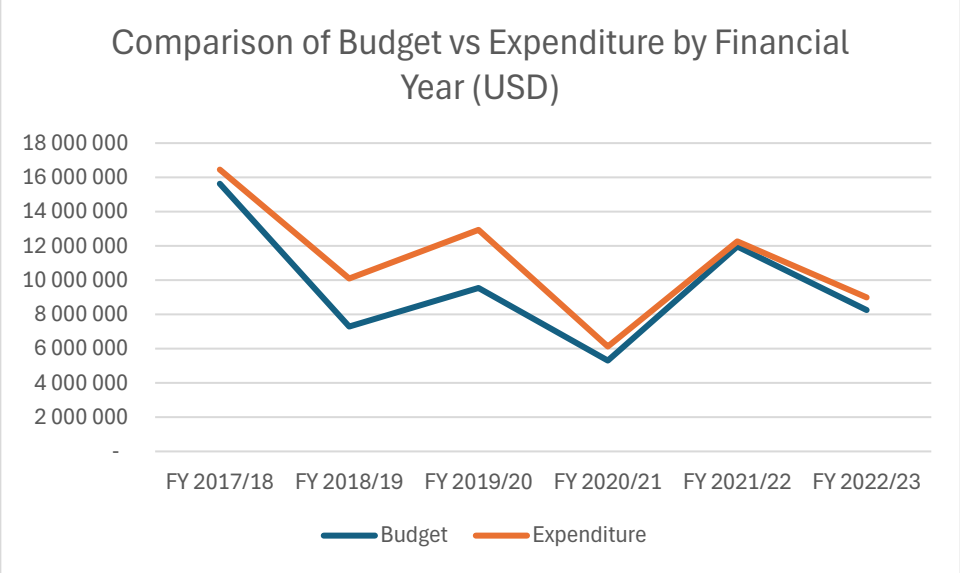
Project Name	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	Total S2 $
Mahagi OSBP Infr upgrade	54,838	42,851	659,677	382,583	504,672	732,214	2,376,836
Mombasa Port Resilience	9,905,647	535,876	780,196	48,834	846,394	228,626	12,345,572
Mom West Int Urban Road n/w	4,748,937	6,481,429	3,469,543	1,700,855	1,810,505	411,842	18,623,110
Goli OSBP	-	1,625	499,5	141,9	761,222	1,177,645	2,581,891
Elegu OSBP	1,714,315	1,097,537	543,732	449,401	-	-	3,804,985
Nimule OSBP Construction	29,65	1,937,998	1,738,302	53,772	122,818	-	3,882,540
Berbera Transport & Port Infra	-	773	5,241,794	3,347,564	8,217,347	6,445,255	23,252,733
Total	**16,453,387**	**10,098,089**	**12,932,742**	**6,124,908**	**12,262,958**	**8,995,582**	**66,867,666**

Figure 19 below compares budget and expenditure across the financial years covering the Strategy 2 period. Expenditure is consistently above the budget for each financial year of the Strategy 2 period and diverges mostly in the first three years of the period (2017-2020), with 2018-19 having the greatest overspend of $3.36m (+60%). The main project causing such a significant overspend in 2018/19 was the Mombasa Roads developments. The exact reasons for this are unclear as TMA finance agreements with national governments

typically stipulate that any additional costs triggered by project delays are not incurred by TMA. The typical costs incurred by project delays include:

1. **Prolongation costs** – extending the time for project execution leads to additional costs such as staff salaries, engineer office and laboratory costs, and idle equipment;
2. **Variation of prices** – inflation and changes in cost indices bared due to extended timelines; and
3. **Interest on delayed payments** – contractors claim interest on any late payments.

Figure 19 Comparison of budget vs expenditure by financial year (2017-2023) (USD)



We note that TMA started officially logging staff time on projects from July 2023. This means that expenditure figures reported in this section are underreporting the actual figures, given that TMA has a dedicated staffing resource for each project included in this portfolio evaluation. Reviewing expenditure figures by category, we see the vast majority of portfolio funds are spent directly under the 'infrastructure' category (86%). The next highest spending category is consultancy (7%) and then staff costs (3%). Infrastructure spending refers to funds paid out directly to contractors engaged in civil works on the evaluable projects. This breakdown presented in Table 16 is a positive development and shows TMA's capacity to efficiently disburse funds for civil works projects to contractors.

Table 16 Expenditure by Category (% Overall spend)

Expenditure Category	% Overall Spend
Infrastructure	86%
Consultancy	7%
Staff costs	3%
Other (e.g. legal, running costs, travel)	4%

The breakdown of completion time and expenditure per project are provided in more detail.

6.2.1. *Mombasa Roads*

Time	Budget

The Mombasa Roads projects had mixed success in terms of project completion time. Road improvement projects such as Kipevu Road and Port Reitz Road were completed on time and handed over to Kenyan

Government Authorities (KPA, KenHA and Mombasa County Government). However, the Magongo Road expansion (2 to 8 lanes), Airport Road (required land acquisition) and Mbaraki Road (required the drainage outfall) encountered significant delays. For example, the Magongo Road development extended the project from 24 months to 72 months, primarily due to challenges with land acquisition.

The Mombasa West road developments incurred the greatest overspend, by 97% (USD 9.18m overspend), a significantly higher overspend than any other project among those we reviewed in depth. However, the cause of this overspend is not clear as TMA does not pay for additional costs derived from project delays, such as those caused by land acquisition. TMA's Project Engineer reflected on how the challenges of land acquisition and a change in national government influenced the project timeline:

> *"And one of the key ones was the land acquisition, because they realized that we're expanding a lot, which is two lanes up to eight lanes. So, there was huge land acquisition that was required. TMA and its donors do not pay for land acquisition. So, it had to be the government of Kenya paying for that. And it is really delayed, especially when dealing with KenHA (Kenya National Highways Authority), because they have to wait for funding from the national treasury".*

> *"Magongo Road was even a bigger challenge because of the change of government. Because when you move from one president to another and the governor, you find that priorities also change. So, there was a lot of lobbying that had to take place. And even for now, for Magongo Road, some sections of the road are not going to be completed." - Resident Engineer, TMA, Mombasa*

6.2.2. HARGEISA BYPASS

Time	Budget

Despite numerous challenges cited due to the COVID-19 pandemic, the Hargeisa Bypass civil works commenced in 2018, and construction was completed and the road operational by November 2022. Some delays were cited by TMA's project team meaning the official handover to the Somaliland Government was delayed until March 2024. COVID-19 brought about operational and cost challenges, with an increase in raw materials resulting in escalating costs and evolving plans. For example, project cost increases led to a reduction in the number of laybys integrated into the road design.

> *"The project faced many challenges, including the budget, which was not sufficient for the design, and we had to look for a workable solution, which was, of course, contested by the technical team from government. But luckily, it was agreed during the national oversight committee that's the only option to go with that was to reduce the paved shoulder and then also the road access points, or what they call the junctions. As we speak, the road has no access to the adjacent plots." - TMA Staff Somaliland, Hargeisa Bypass*

Although the final product may not include all the original design components, the Hargeisa Bypass is operational and yielding many benefits for road users (discussed in the Effectiveness and Impact sections). Figure 20 shows the limitation of not having road shoulders incorporated into the design. Even with the cutbacks in design, Hargeisa Bypass project encountered an overspend of 23%, which is why it is rated red for budget.

Figure 20 :Example of a lack of paved stopping points along Hargeisa Bypass

6.2.3. GOLI-MAHAGI OSBP

Time	Budget

The budget allocated for the Goli-Mahagi OSBP encountered a significant cut after the initial contract signing, which took place in 2020 during the COVID-19 pandemic. Cuts made by the main funder, FCDO, resulted in the funding for civil works being prioritised and IBM in Goli (Uganda). While the Mahagi (DRC) works are being completed in three stages by multiple funders. The updated Goli facility is fully operational, while the verification and parking yard are complete in Mahagi, and the office building is still in progress. We therefore rate this project a red for completion time, as during the period of this evaluation, a fully functional OSBP is not in place at Goli-Mahagi, despite the various upgrades made. This was confirmed by our own site visit and confirmed from testimony from TMA staff and officials at the project site:

> *"But as we speak, the border on Uganda side, the admin building is up and running integrated border management systems there needs the counterpart on DRC side because the admin building is not yet ready." - TMA Staff, Uganda*

> *"Not sure of timelines planned, but DRC was supposed to be completed earlier." - Goli Immigration Official*

Despite challenges with project completion time, the project budget tables show that the expenditure at Goli (85% spent) and Mahagi (78% spent) to be within the original budget allocated. We do note however funding challenges for this OSBP which have contributed to project completion delays.

6.2.4. NIMULE-ELEGU OSBP

Time	Budget

The construction of the Elegu OSBP facilities was completed according to the planned timeline, with handover to Ugandan authorities occurring in February 2020. However, the initial funding made available for the Nimule infrastructure by the FCDO South Sudan Country Programme was dropped. TMA subsequently sought initial funds which enabled the building of a verification yard and some training with South Sudanese officials on IBM processes, however, the rest of the development is delayed. Because there is no functioning OSBP in place during the evaluation OSBP at the Nimule-Elegu border, we give it a red rating for completion time.

> *"Currently, it is still 2 border posts." - Nimule Immigration Official*

In terms of budget allocated towards the Nimule-Elegu OSBP, we note 88% of the planned budget was spent for Nimule within the Strategy 2 period and 62% for Elegu, yielding a green rating for fitting within the budget criteria. However, this budget was predominantly spent on the Elegu side only, and did not result in a functioning OSBP, though evidence of time and cost reduction do exist.

6.3. *Resource wastage and optimal resource use*

Reviewing primary and secondary evidence we observe some examples of resource wastage and resource optimisation across TMA's transport infrastructure portfolio. We discuss some key examples of resource use in this section, accompanied with discussion on how these experiences can inform future transport infrastructure interventions.

We note that as part of the evaluation we are not privy to a line-by-line breakdown of costs and fees paid per project included in the evaluation. If such evidence was available, we could compare the proportion of costs paid out by payment category, such as comparing costs of raw materials against consultancy fees for example, to ascertain whether TMA is utilising its resources optimally. In the absence of such evidence, we select some examples of resource use observed from project sites and from secondary data.

6.3.1. Resource Wastage

Below we share some examples of resource wastage encountered when reviewing data from the evaluable projects of TMA's transport infrastructure portfolio.

6.3.1.1. *Not funding 100% of civil works reduces the prospects of concluding on time*

As discussed in Section 6.1, TMA does not fund 100% civil works on any transport infrastructure project, primarily to get the buy-in and commitment from national governments, but also the availability of funding given the significantly high cost of transport infrastructure projects. Not having the capacity or willingness to provide such funding has some impact on overall project efficiency as it provides greater exposure to the whims of national government funding. In the case of the Magongo Road development in Mombasa, TMA dispensed its funds for civil works within the prescribed 24-month project period, however, it took a further 48 months to complete, due to delays in government civil works funding and land acquisition. That means an additional 48 months of project engagement and lobbying of government officials from TMA project staff which have been utilised elsewhere.

6.3.1.2. *Inadequate road barriers*

A notable resource waste discovered at the Kipevu Road development in Mombasa was the very poor state of the road barriers. Kipevu road is a 1.1km stretch connecting Magongo Road / Mombasa Road to Gate 18 at Mombasa Port. The road is primarily used by lorries who are queuing to enter the port. Upon multiple visits by our evaluation team, the road barriers at multiple sections were heavily damaged (Figure 21). The resource wastage stems from a design flaw to put a single metal barrier between the road and the pedestrian walkway which consistently gets damaged by lorry drivers who are often unsighted to the barriers. The key learning here is that for entry roads where lorries are often stationary or slow-moving, a reinforced barrier solution is required, such as concrete blocks followed by metal barriers to prevent the frequent need to maintain and replace metal barriers.

Figure 21 Example of road barrier damage at Kipevu Road, Mombasa

6.3.1.3. *CLIMATE RESILIENCE FEATURES*

Climate resilience design specifications such as drainage systems to prevent flooding have been widely incorporated into the transport infrastructure projects covered in this evaluation, and by and large, are reported to be effective. However, we highlight an example from the Hargeisa Bypass which suggests the climate features are not effective for all infrastructure beneficiaries. A total of $3.48m (approximately 17% of the total construction cost) was spent on climate resilience features including culvert and drainage systems as part of the Hargeisa Bypass development. However, our evaluation found complaints of flooding from MSMEs located along the roadside as well as complaints of the asphalt road surface becoming slippery when it rains, from some road users. While evidence of drainage solutions along certain sections of the bypass are visible, and according to various stakeholders have mitigated road-level flooding previously experienced, it seems the overall spend on climate resilience measures does not mitigate all challenges brought about by heavy rains.

> *"There is a bad drainage system, which causes flooding and obstructs access." - Female, MSME Owner, Hargeisa*

> *"The road has become slippery and there is a lot of asphalt on it". - Male, Private Vehicle User, Hargeisa*

Figure 22 Example of drainage along Hargeisa Bypass, Somaliland

The key learning here is to ensure climate resilience measures benefit all stakeholders who engage with the transport infrastructure. Although MSMEs located alongside the Hargeisa Bypass are not intended to be the primary beneficiaries of the infrastructure, they are directly impacted when inadequate drainage causes their businesses to become inaccessible when the rainwater drains down from the higher road location to the lower-lying business location.

6.3.1.4. *INCOMPLETE FACILITIES AND UNUSED BUILDING MATERIALS*

Budget constraints during the design phase have led to an incomplete OSBP

facility at Nimule, where only the verification yard is complete. The inspection shed and parking yard were found to lack sufficient space to accommodate all border agencies, administrative functions, and the volume of traffic passing through the border. This has resulted in congestion, overcrowding, and potential delays in processing goods and people. This situation highlights a potential waste of resources, as the facility is not operating at its full potential due to inadequate design. The key learning in this instance is time the procurement and commencement of building works only after all funds have been secured.

6.3.2. OPTIMAL RESOURCE USE

Below we share some examples of optimal resource use across the transport infrastructure portfolio, and how these resources can be leveraged in future projects.

6.3.2.1. DEPLOYING ENGINEERS TO OVERSEE INFRASTRUCTURE IMPLEMENTATION

TMA's project teams for transport infrastructure projects are generally headed by an engineer. The engineer provides both technical oversight of the development, as well as project management expertise. We consider this model to be an optimal resource use, as it enables technical expertise to remain close to the project details, while also providing organisational competence and donor confidence that civil works will be conducted to a high level of quality. Assuming the recruitment of experienced engineers to lead project, teams may require greater financial resource compared to non-technical project managers, however, our evaluation concludes that such resource is well-spent and mitigates some organisational risk that TMA bears when implementing transport infrastructure projects.

6.3.2.2. INVESTING TIME IN TRADE ADVOCACY

Investing time and resource in trade advocacy is a crucial component of TMA's transport infrastructure investments and is seen as an example of optimal resource use. Indeed, effective transport infrastructure programming cannot take place without agreements between governing bodies.

Case in point is the *"l'Ordre Opérationnel,"* a framework for cooperation between border agencies on the DRC side in Mahagi, facilitated by TMA, which has enabled effective collaboration and improved service delivery to border users. Similarly, the establishment of joint border committees involving South Sudanese and Ugandan officials at Nimule-Elegu facilitated dialogue and collaboration, leading to greater ownership and buy-in for the OSBP project.

In Hargeisa, many stakeholders, while noting the gains achieved through the Hargeisa Bypass and Berbera Port investments, discussed the significance of an impending trade agreement between Somaliland and Ethiopia as *the* major catalyst for boosting trade in the region. It is not clear the extent of TMA's role in facilitating this agreement, but it highlights the major significance that such agreements have on increasing trade. One prominent interviewee noted:

> *"The [proposed] trade agreement mandates that ownership of transport trucks will be shared equally, with 50% of trucks operated by owners from Ethiopia and the other 50% from Somaliland. This arrangement aims to ensure that economic benefits, particularly job opportunities, are distributed across both countries."* - General Secretary, Chamber of Commerce, Hargeisa

These examples highlight how hard infrastructure investments are not enough in isolation to deliver benefits. Investment in the trade policy space is vital too. This ensures that countries are aligned, and the benefit of TMA's infrastructure investments can be fully realised.

6.4. *EXAMPLES OF EFFICIENCY GAINS AT PORTS, HIGHWAYS AND OSBPS*

The evidence gathered from primary and secondary sources show TMA's transport infrastructure portfolio to have contributed to efficiencies in the operations of ports, highways and OSBPs. Specific efficiencies noted include increased cargo handling capacity, reduced customs clearance times and faster border crossing times, all of which contribute to a more efficient trade pipeline in the region. This section references specific findings on efficiency gains at ports, highways and OSBPs, using primary and secondary sources.

6.4.1. PORTS

TMA's transport infrastructure portfolio has contributed to efficiency gains at ports connected to the evaluable project sites. These efficiency gains are primarily the product of specific port investments by TMA and other funders (not examined in-depth in this evaluation), with some contribution observed from the roads and OSBPs explored in the evaluation.

For example, Berbera Port, Somaliland, was taken over by Dubai-based DP World in 2017, and has benefited from major investments such as construction of a 400m quay to boost port capacity.[51] While in the case of Kalundu Port (DRC), emergency dredging works funded by the Ministry of Foreign Affairs, Netherlands through TMA, enabled the port to decrease load times and increase ship load capacity.[52] The same programme also saw investments in IBM at Ntoroko Lake Port which significantly reduced customs clearance times.[53]

Three of the four evaluable projects included in this study are close connectors ports in the trade pipeline: (i) Mombasa Port (Mombasa Roads), (ii) Berbera Port (Hargeisa Bypass), (iii) Kalundu Port (Goli-Mahagi OSBP) and (iv) Ntoroko Lake Port (Goli-Mahagi OSBP). Upgrades to Kalundu Port and Ntoroko Lake Port are not in the scope of the evaluation, however, given their linkages to the Goli-Mahagi border, we acknowledge them as examples of port efficiencies resulting from TMA funding. From our review of secondary evidence, we identify examples of efficiency gains at each port, discussed below.

- ✓ Cargo volumes at the Port of Mombasa increased from 1 million Transshipment traffic (TEU) in 2014 to 2 million TEU in 2024, representing an approximate 100% increase over a 10-year period.[54] Along with increased port capacity, Container Freight Station (CFS) and export trucks experienced reduced turnaround times by 2 to 4 hours on average in 2023 compared to the 2019 baseline.[55]
- ✓ Container capacity at Berbera Port increased by 233% at endline (2023), from 150,000 TEUs (2021) to 500,000 TEUs (2023); general cargo capacity rose by 33% at endline (2023), from 1,500,000 metric tons (2021) to 2,000,000 metric tons (2023). The average time for trucks to load cargo at the port has also decreased by 18% at endline (2023).[56]
- ✓ Unloading time for 1500 tons of goods reduced from 15 days (before dredging works in 2020) to 7 days (2021) in Kalundu Port.[57]
- ✓ Customs clearance time reduced by over 80% at Ntoroko Lake Port, from 9.1 hours (2019) to 1.7 hours (2021).[58]

[51] KII, Commercial Manager (Berbera Port, Somaliland), DP World, 2024
[52] TMA, Cross Border Trade in DRC Final Report, 2023
[53] TMA, Cross Border Trade in DRC Final Report, 2023
[54] KPA, Overview of Port Industry in Kenya, January 2025.
[55] Mombasa Roads ENDLINE Survey Report, TradeMark Africa, December 2023
[56] Berbera Corridor Endline, 2023
[57] TMA, Cross Border Trade in DRC Final Report, 2023
[58] TMA, Cross Border Trade in DRC Final Report, 2023

These examples of port efficiency gains are not the direct result of the four projects studied in this evaluation. However, for enhanced port capacity to occur, improved infrastructure in the trade pipeline to cope with increased demand is necessary, and the sections on efficiency and impact discuss examples of improvements in roads and OSBPs through various lenses.

Of the port efficiency gains described in this report, the Mombasa example highlights perhaps the greatest contribution of the Mombasa Road improvements to port efficiency gains. The 'turnaround time' for CFS trucks incorporates time spent going in and out of the port. CFS trucks need to access the improved road network (e.g. Port Reitz Road and Magongo Road) to access CFS yards. Therefore, improved roads that are wider, in better condition and better able to handle high traffic volumes, contribute towards reduced CFS truck turnaround times.

In addition to the secondary evidence presented, there is also a perception among beneficiaries that TMA's transport infrastructure investments contribute to port efficiency:

> *"The port has greatly benefitted from the new road, as it facilitates easier and faster transportation of goods." - Male, MSME Owner, Hargeisa Bypass*

> *"The upgrades at Magongo Road has drastically improved traffic flow into the port." - Kenya Ports Authority Official*

6.4.2. HIGHWAYS

Investments in the Mombasa Road network and the Hargeisa Bypass were found to have yielded substantial efficiency gains for road users by this evaluation, including time and cost reductions discussed in the effectiveness section of the report. Below we present some examples of highway efficiency gains for road users in Mombasa and Hargeisa.[59] [60] [61] [62]

56%

of road users (Mombasa and Hargeisa) reported a reduction in travel costs since completion of the road infrastructure.

78%

of road users perceived a reduction in road accidents in Mombasa.

69%

of road users perceived a reduction in traffic volume in Hargeisa.

Travel time between Berbera Port and the Tog Wajaale border reduced by **37%** for travel from Berbera to Tog Wajaale and **39%** (2023 endline compared to 2021 baseline) for the opposite direction.

These findings present a positive picture from road users and point to efficiency gains resulting from the Mombasa Roads and Hargeisa Bypass infrastructure investments. In terms of highway operations, road users

Boxes 1-4 (L-R)

[59] Box 1, User Satisfaction Survey, 2024

[60] Box 2, User Satisfaction Survey, 2024

[61] Box 3, User Satisfaction Survey, 2024

[62] Box 4, User Satisfaction Survey, 2024

at both sites report strong confidence that the roads would be maintained (3.8 out of 5) and some confidence in the quality of the road that no potholes would emerge after two years (3.4 out of 5).

However, it should be noted that there are some elements of the handover in management of the highways from TMA to local government administrations that are not clear cut. Cases were reported in both Mombasa and Hargeisa, where road management authorities did not have an existing maintenance budget allocated. For example, in Hargeisa, the Ministry of Transport is responsible for maintenance of the Hargeisa Bypass, but during the evaluation period did not have a specific budget allocated for such maintenance. Similarly, Mombasa County Government officials expressed long-term maintenance concerns given the limited resources it has available. These challenges present questions of whether the efficiency gains from highway operations can be maintained in future.

6.4.3. OSBPs

While neither Goli-Mahagi nor Nimule-Elegu are yet fully functioning OSBPs, clear evidence exists of operational efficiency gains at OSBPs. Some examples of efficiency gains found in the body of evidence reviewed as part of this evaluation are:

- ✓ Customs clearance time has reduced by 40% at Goli, from 6.05 hours in 2019 to 3.59 hours in 2023.[63]
- ✓ Average border crossing time reduction of 70% at 10 TMA-supported OSBPs (2023)[64]
- ✓ Average time to clear the border reduced to 102 minutes at Nimule and 94 minutes at Elegu in 2022, down from 180 minutes (2018)[65]

Additionally, through our engagements with officials at Goli, our evaluation found that time savings within departments have been substantial since completion of the facilities, particularly in cases where police inspections are required:

> *"Time savings are high even for the departments. For instance, if there are goods that require police inspection, they would have to be shifted to the military warehouse, wait for processing, if there are other testing to be done move it another department etc. All this while the vehicle is stuck in the border post which means the other vehicles cannot be handled or processed until the stagnant ones are completed. In that way, the clearance and processing time is better". - Goli, Uganda Revenue Authority Official*

However, it was also noted that OSBPs are meant to operate for 24 hours but currently only operate from 7am to 8pm due to a shortage of staff. This suggests that OSBP sites are not currently operating at maximum capacity.

> *"The OSBP operates from 7 am to 8pm. It is supposed to be theoretically 24hrs. In that case there will be additional staff required". – Goli, Immigration Official*

[63] TMA, Evaluation of the UPSIDE Programme, 2023
[64] TMA, Evaluation of the UPSIDE Programme, 2023
[65] FINAL TMEA AVV-BF Report 10.01 Elegu Nimule

7. SUSTAINABILITY

This section evaluates the sustainability of transport infrastructure projects supported by TMA, focusing on the interplay of various factors that ensure their longevity. The text is structured into three key sections, providing a comprehensive analysis of the findings illustrating the sustainability of the TMA transport interventions.

- ✓ The first section explores the critical components of sustainability, including collaboration among stakeholders, effective maintenance strategies, and the integration of innovative technologies.
- ✓ The second section evaluates capacity-building efforts aimed at equipping local stakeholders with the skills and tools needed to manage infrastructure post-TMA intervention.
- ✓ Finally, the report discusses financial models and partnerships for long-term maintenance and expansion, including emerging approaches like the Trade Catalyst Africa facility.

7.1. *SUSTAINABILITY OF THE TRANSPORT INFRASTRUCTURE IMPROVEMENTS*

The evaluation found evidence that sustaining transport infrastructure requires multiple factors to work in harmony, including functional institutions, regular maintenance, capacity development, environmental stewardship, and the implementation of innovative technologies.

Overall sustainability in transport infrastructure depends on governments, businesses, and international partners effectively working together, as observed at the OSBPs. As one stakeholder commented during consultation *"Stakeholder collaboration has been key in ensuring the longevity of these projects."*

Effective systems supported by TMA, such as the development of the Mombasa Port Charter and Hargeisa's infrastructure policies, have ensured accountability and adaptability to emerging challenges. One consultee cited the importance of TMA's catalytic early support when they said, *"Trademark's technical support has built a strong foundation for continued progress."*

There was further evidence that the use of modern tools, including predictive models and weigh-in-motion systems on the Northern Corridor, have enhanced resource management, reduced inefficiencies and streamlined operations. Harmonisation of regulations across borders, as observed at the OSBPs that TMA has supported, has made operations more sustainable and efficient too. While the OSBPs that the evaluation team visited (Goli-Mahagi and Nimule-Elegu) were yet to reach this stage of integration by the time of our visit, a review of other evidence collected by TMA on the transport portfolio finds systems and policy harmonisation to be an important component in sustainability.

Regarding maintenance, plans were found to be in place for the Mombasa Roads project. With the projects completed, the responsibility for maintenance has passed to KeNHA. Scheduled maintenance, such as KENHA's regular roadworks programme, prevent minor issues from escalating. For example, upgrades to Mombasa's drainage system were reported to have reduced flooding and kept the city operational. 'Smart designs' also play a role. Roads like Kipevu are constructed to handle heavy cargo and designed to last a significant period of time, reducing repair costs. One government agency interviewee confirmed this noting, *"We expect the infrastructure to last 25 years with minimal maintenance requirements."*

The Mombasa County Government officials engaged during the evaluation also expressed concerns at the Kenyan devolution funding formulae which provided minimal resource to maintain TMA improved

infrastructure under its remit. While the understanding and intent is there, access to the financial resources to implement a regular maintenance programme continues to be a struggle.

Efficient systems, such as intelligent traffic controls and enhanced drainage, were reported to have helped minimise delays and keep traffic flowing, as evidenced by the impact of the Magongo Road upgrade on port access in Mombasa. Moreover, technology like Internet of Things (IoT) sensors aid in monitoring infrastructure health, enabling early intervention. However, some stakeholders interviewed in relation to the Hargeisa Bypass, highlighted the need for clearer maintenance. A local stakeholder remarked, *"The road is cracked, and the quality is not good. Although I am not an engineer, we can see that there is damage and potholes that need immediate action."* These combined efforts underscore the importance of proactive maintenance and innovation in extending the lifespan of infrastructure. It also highlights the lack of a dedicated road maintenance budget for the Hargeisa Bypass by the Ministry of Transport in Somaliland during the period of evaluation.

Ensuring environmental sustainability is of paramount importance to TMA and its partners. Our evaluation found evidence of TMA supporting restoration of ecosystems through initiatives like mangrove and tree planting in Mombasa which has enhanced biodiversity and mitigated climate risks. One stakeholder commented, *"Mangrove replantation under the green port policy is a significant step toward achieving net-zero carbon emissions*." Additionally, flood protection measures, such as improved drainage systems in Mombasa, were reported to have safeguarded areas from heavy rains*, "The drainage project has been revolutionary, handling even the heaviest rains without flooding."* highlighted a government official. Sustainability efforts also extend to the use of innovative materials, including recycled resources in construction and renewable energy solutions like solar-powered lights.

In conclusion, sustainability in transport infrastructure depends on careful planning, working together, and using innovative solutions. Projects like the Mombasa Roads, Hargeisa Bypass, and OSBPs show how good policies, skilled teams, and respect for the environment can make a lasting impact. By ensuring funding, building strong institutions, and adopting smart technologies, our evaluation found that these projects serve as models for how to build infrastructure that works well today with good (but not guaranteed) prospects for future sustainability. As ever, the projects' sustainability will be determined by the financial resources available to the respective agencies responsible for road and OSBP maintenance.

7.2. *LOCAL CAPACITY BUILT TO MANAGE AND MAINTAIN INTERVENTION INFRASTRUCTURE*

With respect to building local capacity, the evaluation found evidence that TMA has placed some emphasis on building the skills and leadership needed to manage infrastructure after TMA's involvement. Through a combination of skill development, leadership training, and knowledge transfer, TMA has established a framework to support the local management of infrastructure once it exits.

TMA-funded training programmes were found to have been important in equipping local personnel with the necessary expertise. At One Stop Border Posts (OSBPs), training has helped to harmonise operations across borders, streamlining procedures and reducing inefficiencies. One industry representative stakeholder commented *"The training has helped traders and customs officials streamline procedures, reducing delays and inefficiencies."* Similarly, at Mombasa Port, the institutionalisation of performance metrics under the Port Charter was reported to have now created a sustainable operational framework. *"TMA has provided training to ensure the Port Charter's goals are actionable and sustainable, empowering local port officials to take*

ownership of operational improvements" commented one knowledgeable official interviewed as part of the evaluation.

Some stakeholders reported that the focus on the capacity building of technical skills has extended to advanced systems like weigh-in-motion technology and digital logistics platforms. One stated *"Workshops have ensured that local operators can use and maintain the technology effectively, which is critical for maintaining infrastructure reliability."*

Leadership development and knowledge transfer were also found to have been central in fostering institutional resilience. Leadership training programmes have equipped local officials to navigate challenges such as increased cargo volumes and logistical complexities. A representative from Kenya Ports Authority noted, *"This training has helped us anticipate future challenges and develop strategies to address them effectively, ensuring that our infrastructure remains resilient and operational."* Encouraging knowledge exchange between experienced leaders and emerging professionals was found to have strengthened institutional continuity and cultivated a culture of mentorship within local agencies.

There was some evidence that TMA's emphasis on institutional capacity building and digital tools has further cemented the sustainability of infrastructure projects. Training in systems like the Maritime Single Window and the Integrated Customs Management System (ICMS) has made processes more transparent and efficient, even for the private sector, *"Stakeholders now have the technical know-how to use these systems"* stated one business stakeholder interviewed.

Training programmes targeting cooperatives have equipped their members with practical skills in bookkeeping, trade facilitation, and resource management, ensuring their contributions to infrastructure maintenance. For example, community-driven initiatives like the Goli Women's Cooperative have received training through TMA which they report has empowered participants with skills in financial literacy, market access, and resource pooling, enabling them to benefit from the OSBP. A cooperative leader affirmed, *"The training we received has helped us grow our income and sustain our operations independently."* While not directly linked to the sustainability of infrastructure, this illustrates how TMA support has helped OSBP users to realise value from it.

Despite these successes, challenges were found to remain. Limited financial resources continue to be an impediment to local institutions and cooperatives from scaling their operations or fully discharging their maintenance responsibilities. Furthermore, continuous professional development programmes and refresher courses were said to be needed to keep personnel updated on the latest tools, practices, and industry standards. In a few cases it appears the government authorities who are responsible for infrastructure maintenance after the TMA handover, are not adequately financially resourced to play such a role. Further they can be dependent on national government budget allocations which may not necessarily be in place at the handover stage. In the case of the Hargeisa Bypass, stakeholders expressed a lack of clarity over which entity was responsible for the maintenance of the road, with one respondent reporting, "*I don't think there is a mechanism of sustainability, because already there is damage on the road*".

TMA may consider incorporating a handover budget into the overall project budget to cover potential delays in national government funding allocation to improve the efficiency of project handover and maintenance.

Summing up, there is clear evidence that TMA's focus on building human capacity has been instrumental in preparing local stakeholders to manage infrastructure effectively after its exit. By providing targeted training, fostering leadership, and enabling knowledge transfer, our evaluation found that TMA has established a

reasonable foundation for long-term, locally driven infrastructure management. To build on this progress, addressing resource gaps, expanding professional development opportunities, and creating stronger networks will be essential. These measures will ensure that the benefits of TMA's interventions can be maintained by those with the responsibility for running them once TMA funding ceases.

7.3. *FINANCIAL MODELS TO SUPPORT MAINTENANCE AND EXPANSION OF INFRASTRUCTURE*

Beyond the initial grant funding from TMA and mainstream budget support from organisations charged with adopting ongoing operations and maintenance, the evaluation found scant evidence of financial models or partnerships in place to support ongoing maintenance and/or potential expansion of transport infrastructure.

Several stakeholders referenced models such as public-private partnerships and charging user-fees for revenue generation at OSBPs and on roads (tolls), but the evaluation found no evidence that these models had been adopted at the sites visited as yet. This is likely to change as a result of recent extreme changes in the donor environment. Suggestions regarding alternative funding models are presented above in Section 6.1 which are more in line with the TCA model outlined below.

Consultation with TMA found that the model of how the organisation funds infrastructure in Strategy 3 has changed with the creation of Trade Catalyst Africa (TCA). As a catalytic financing facility wholly owned by TMA, TCA seeks to leverage funding from a range of investors including development finance institutions (DFIs), commercial banks, private equity funds, microfinance institutions, and other financial institutions, by de-risking infrastructure projects. TCA is designed as an 'evergreen fund' with funds returned to investors using a transparent revenue model.

Although not operational in Strategy 2, the period which this evaluation covered, TCA has identified several infrastructure projects where this model will be applied in Strategy 3. Notable among these is the development of the Nakonde – Tunduma OSBP on the Zambia/Tanzanian border. Using catalytic funding from TMA, invested through TCA, this facility has leveraged additional funding from external investors. This OSBP will charge users a small usage fee, which will be used to pay back the cost of developing the facility over time and fund its ongoing maintenance costs. TMA stakeholders confirmed that this will be the primary model for infrastructure development in Strategy 3 rather than the grant funding model adopted in Strategy 2.

With respect to the infrastructure already constructed during Strategy 2, TMA should undertake a review, alongside its partners, to assess the feasibility of charging nominal user fees at the existing OSBPs. Some concerns were expressed during the evaluation that existing OSBPs such as Busia on the Kenya/Uganda border are now beginning to degrade due to lack of funds for maintenance. One avenue to explore could be applying the TCA funding model to users of Strategy 2-funded infrastructure.

8. Conclusions and Recommendations

8.1. Reflections on the Theory of Change

The theory of change (see ANNEX B) has served as a valuable framework for assessing the impact of TMA's transport infrastructure investments in Strategy 2, but several areas require refinement to strengthen its application. The evaluation confirms that while some causal pathways are well-supported by evidence, others remain uncertain or require more precise consideration of their placement and purpose. The contribution of infrastructure to reducing greenhouse gas emissions, for instance, is intuitively plausible but lacks direct evidence within the scope of this study. Future evaluations should integrate more robust tracking mechanisms to measure these effects accurately. Further, blanket statements of GHG reductions need to be carefully balanced against the TMA objective of increasing volume and value of intra-regional trade, which will likely increase the number of vehicles crossing borders.

The distinction between hard infrastructure and complementary interventions must also be clarified. While infrastructure improvements have demonstrably reduced border crossing times and transport costs, it remains essential to capture the role of institutional and operational changes. A more explicit linkage between these elements in the theory of change would help in attributing impact more accurately.

Regular updates to the theory of change are necessary to reflect shifts in funding models and policy priorities. The transition toward co-investment and user-based financing should be embedded in the framework to ensure alignment with emerging realities. Future iterations should also account for evolving sustainability considerations, including climate resilience and accessibility, to ensure that infrastructure investments continue to deliver long-term benefits.

8.2. Conclusions

8.2.1. Alignment with Regional and Continental Strategies

This evaluation has found clear evidence that TMA's interventions align strongly with national, regional, and continental strategies to promote and increase intra-African and international trade. Designed collaboratively with partners, these projects support the trade competitiveness and regional integration goals of bodies like the EAC and AfCFTA. By targeting the elimination of non-tariff barriers and enhancing connectivity, the transport portfolio has contributed to economic growth, sustainable development, and greater integration across the region.

8.2.2. Enhanced Trade Efficiency and Economic Growth

TMA's transport infrastructure projects have contributed to improved trade efficiency by reducing transport times and costs while enhancing access to regional and international markets. Projects such as the Mombasa Roads and One-Stop Border Posts (OSBPs), like Nimule/Elegu and Goli/Mahagi, have streamlined logistics, lowered transaction costs, and facilitated trade flows. These efforts have also fostered regional integration and strengthened local economies.

Additionally, tailored interventions, such as the policy-related Simplified Trade Regime (STR) and improved physical facilities, have created new opportunities for women and small-scale traders, making cross-border trade more accessible and inclusive. There is also evidence that infrastructure projects have contributed to some employment opportunities and local business growth, with the range of goods and services available in communities along major trade corridors becoming increasingly diversified.

However, attributing direct TMA contribution to specific economic growth or increased trade efficacies figures remains difficult in a complex, multi-layered environment such as cross-border trade.

8.2.3. Social and Environmental Benefits

Beyond economic gains, TMA's infrastructure projects have delivered unintended positive social outcomes. Communities near the Hargeisa Bypass and Mombasa Roads projects have reported improved access to healthcare facilities and schools, with reduced travel times and enhanced connectivity enabling easier movement for students and patients. For example, in Mombasa, improved road conditions have facilitated quicker emergency response times, while in Somaliland, better transport links have increased school attendance in previously hard-to-reach areas, contributing to stronger local livelihoods. Climate resilience measures, such as drainage systems, have been incorporated into project designs, reducing the risk of flooding and enhancing the sustainability of the infrastructure. However, the evaluation found some evidence that the benefits of these measures have not always been evenly distributed.

8.2.4. Inclusivity and Sustainability

TMA's sustainability efforts have been supported by targeted training, institutional capacity-building, leadership development, and knowledge transfer, which have strengthened the capacity of local stakeholders to effectively maintain and operate infrastructure. These initiatives have established a strong foundation for the long-term functionality of TMA-supported projects beyond the funding period. However, challenges such as resource gaps and delays in national funding allocations have highlighted the importance of ensuring that infrastructure remains operational and resilient. Instances like the Hargeisa Bypass, where uncertainty over maintenance responsibility has posed challenges post-handover, underscore the need for clear roles and responsibilities in sustaining infrastructure.

Additionally, inclusive design specifications have proven vital in maximising efficiency and accessibility. Addressing the diverse needs of all road users—pedestrians, cyclists, public transport users, and people with disabilities—ensures that infrastructure supports equitable access, enhances usability, and fosters economic activity for a broad range of stakeholders. These combined efforts reinforce the long-term impact of TMA's infrastructure projects, supporting sustainability and inclusivity across the region.

8.2.5. Innovative financial models

The transition from grant-funded infrastructure under Strategy 2 to the innovative financing model introduced through Trade Catalyst Africa in Strategy 3 marks a significant shift in TMA's approach to funding and sustaining infrastructure projects. As donor funding becomes less predictable, TMA is pivoting towards cost-sharing models that incorporate private sector investment and revenue-generating mechanisms, such as toll fees and enhanced customs declaration measures, to attract alternative funders. High-impact transport infrastructure investments with clear returns will take priority, while low-volume projects with minimal economic activity are unlikely to be pursued.

Co-funding with national governments remains critical for long-term sustainability, fostering accountability and ownership. However, lessons from Mombasa and Hargeisa show that while co-funding can improve maintenance outcomes, it also introduces risks of project delays. To mitigate such risks, TMA should remain open to front-loading its financial contributions where necessary to accelerate progress, as demonstrated in

the Magongo Road project. By maintaining active engagement with government partners throughout project implementation, TMA can ensure quality assurance and effective delivery.

This comprehensive approach to planning, financing, and sustaining infrastructure reinforces TMA's role as a key enabler of trade competitiveness and regional integration in East Africa, ensuring long-term impact and resilience. transition from grant-funded infrastructure under Strategy 2 to the innovative financing model introduced through Trade Catalyst Africa in Strategy 3 represents a significant evolution in TMA's approach to funding and sustaining infrastructure projects. By leveraging external finance alongside TMA's funding and generating revenue from constructed facilities, this model enhances the prospects for long-term sustainability. Revenue generated can be utilised by partner agencies to fund maintenance, ensuring that infrastructure remains functional, resilient, and impactful over time. This comprehensive approach to planning, implementing, and sustaining projects reinforces TMA's role as a key enabler of trade competitiveness and regional integration in East Africa, delivering lasting benefits for a diverse range of stakeholders.

8.3. *Recommendations*

8.3.1. Recommendation 1 - Enhance project alignment and impact through robust monitoring and regional collaboration

It is recommended that in the identification and design of these interventions that TMA continue to align with national, regional, and continental strategies, such as the EAC and AfCFTA, to further enhance trade competitiveness and regional integration. However, to ascertain TMA contribution to these objectives and to better attribute economic, social, and environmental outcomes directly to TMA's projects it is strongly recommended that TMA simultaneously, develop and implement robust frameworks to monitor its objectives and outcomes across its transport portfolio.

This dual approach will ensure interventions continue to address priority areas, such as reducing non-tariff barriers and improving connectivity, but will also provide clear evidence of their impact. Enhanced collaboration with regional bodies and stakeholders on both aspects of this recommendation will also help refine project objectives, track progress, and inform future initiatives, ensuring sustained relevance and effectiveness over time.

8.3.2. Recommendation 2: Foster inclusive and sustainable infrastructure design for equitable development

In the design of its interventions, it is recommended that TMA prioritise inclusive and sustainable infrastructure design to maximise efficiency, accessibility, and equitable benefits.

To this end it is recommended that climate resilience measures be scaled up and designed to benefit all affected stakeholders, including marginalised groups and MSMEs, and that these measures are communicated adequately to stakeholder groups. For example, in addressing flooding risks in low-lying areas, local communities and businesses should be engaged early in the planning process to align designs with their specific needs, and to be informed of the climate resilient measures being put in place.

Additionally, TMA should continue to look to create longer term opportunities for local stakeholders and business by expanding initiatives, to involve the input from the local stakeholders in the design, planning and ongoing implementation of the initiatives. This will promote longer term job creation, foster inclusive trade growth, and amplify the economic impact of its investments. By embedding inclusivity, sustainability, and community engagement into project designs, TMA can enhance usability, resilience, and long-term impact.

8.3.3. Recommendation 3: Strengthen collaboration and sustainability for long-term infrastructure impact

Together with Recommendation 4, in intervention conceptualisation and design, and in alignment with its new funding strategy, it is recommended that TMA enhance collaboration and coordination across all stakeholders, including national governments, funding partners, regional bodies, to ensure seamless communication, and appropriate shared ownership of infrastructure projects. Improved engagement and timely information sharing can mitigate risks such as resource gaps, budget cuts, and project delays, while fostering trust and accountability. By aligning priorities and responsibilities among stakeholders, TMA can create a more integrated approach to project delivery and sustainability, ensuring that infrastructure continues to deliver long-term benefits.

To reinforce sustainability, it is recommended that TMA, as part of its new funding model, incorporate maintenance budgets into project plans, and communicate these to stakeholders, to address potential delays in national funding allocations. These budgets together with clear maintenance roles and responsibilities help bridge resource gaps and prevent infrastructure deterioration during the transition from TMA oversight to national or local government management. The new funding model has the potential to better fund maintenance and improve sustainability prospects.

As part of this process, it is recommended that TMA continue its targeted training programmes, institutional capacity-building, leadership development, and knowledge transfer initiatives. These strengthen the ability of local stakeholders to manage and maintain infrastructure effectively, enhancing local capacity and ensuring infrastructure remains operational, resilient, and impactful over the long term.

8.3.4. Recommendation 4: Review the feasibility of applying the user-fee model being adopted for new infrastructure investments in Strategy 3 to existing infrastructure funded under Strategy 2

Given TMA's pivot to funding new infrastructure investments in Strategy 3 through commercial models which charge users a small fee to use the facility, there may be the potential to apply this approach to the infrastructure TMA and its partners funded in Strategy 2. This has the potential to address some of the funding challenges for ongoing maintenance identified by this evaluation. It is understood that application of this model may not be possible in all cases, however, undertaking a thorough review to determine the conditions under which it may be feasible is an action that that TMA should undertake.

8.3.5. Recommendation 5: Focus on soft infrastructure improvements and integrated border management processes to initiate OSBP functioning

Our evaluation found evidence of significant hard infrastructure improvements at the Uganda OSBPs we visited, in Goli and Elegu. However, infrastructure development at their counterpart sites in Mahagi and Nimule remains incomplete, limiting the effectiveness of these border posts as fully operational OSBPs. Given the delays in completing hard infrastructure in Nimule and similar external factors affecting progress across other border points, we recommend prioritising the implementation of soft infrastructure—such as integrated IT systems, staff training, and institutional capacity building. This approach will enable border crossings to function as OSBPs in both directions while the remaining hard infrastructure is completed.

8.3.6. Recommendation 6: Fine tune OSBP capacity estimations to ensure sustained reductions in border crossing time.

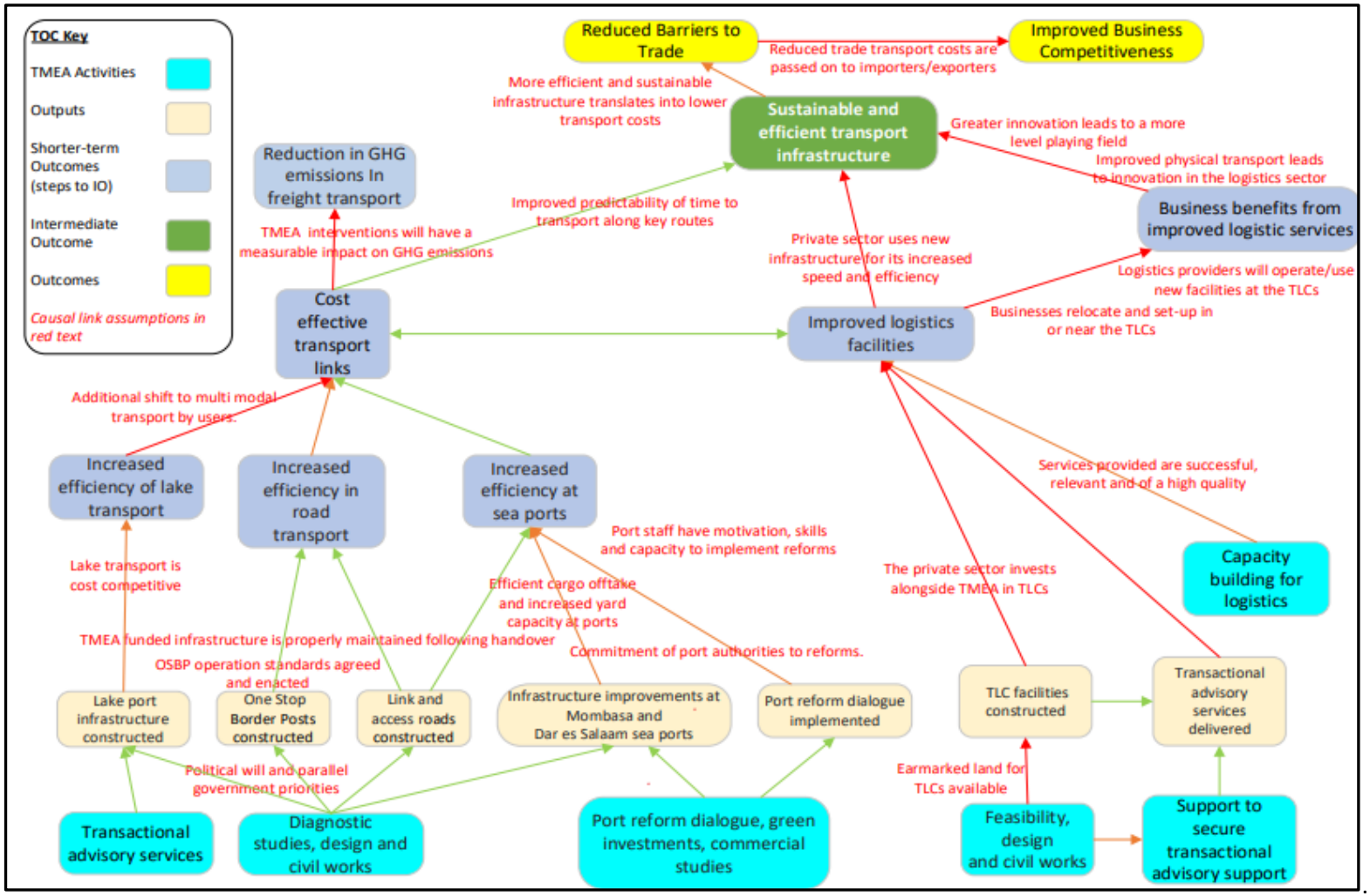
Our evaluation found a reduction in border crossing times at the Goli and Elegu OSBPs. However, OSBPs that have been operational for a longer duration show an increasing trend in crossing times after the initial post-implementation reduction. This may be attributed to capacity limitations at these OSBPs. The evaluation team recommends aligning projected traffic flows and volumes during the baseline and design stages to ensure that long-term projections inform capacity planning. Additionally, OSBP compounds accommodate multiple departments, impacting available space. Introducing a phased (tranche-wise) approach to land identification would help manage department overflow based on border post demand, ensuring sustainable expansion and facilitating a structured transition to national revenue authorities.

ANNEX A. PROJECT DOCUMENTS REVIEWED

Projects	Documents Reviewed
Portfolio Level	1.1 - Final CLEAN - 21 March 2023 - TMEA IO 1.1 EA Report 1.2- Board Paper- Challenges of implementing Infrastructure Projects in Fragile Countries_Final 1.3- Challenges and Mitigation Infra Projects International – climate -finance KPI_ 1_ Methodology_Note_People_supported_to_adapt_to_the_effects_of_climate_change TMEA MEL Strategy_FINAL (Council Approved July 2020)
Mombasa Roads	2.1 - Mombasa Port Programme Phase II PAR - Approved PAR 2.10 - HoA Logframe Version 14th June 2023 2.11 - Mombasa West Infra Programme - July 24 2.2 - Mombasa Port Resilient Infrastructure Programme PAR 2.3 - Mombasa Roads Baseline Survey_Report_20191031 2.4 - Mombasa Roads ENDLINE Survey Report 16022024 2.5 - Mombasa West- Endline Study Phase 1 2.6 - Mombasa West Integrated Urban Roads Network Project PAR 2.7 - PAPER D (iii) - PAR ADDENDUM - Mombasa County Roads PAR to include Mbaraki Road 2.8 - Project monitoring plan. Mombasa West docx 2.9 - HOA HBP Project ICF reporting 31st March 2023
Hargeisa Bypass	3.1 - Final Report_Berbera Corridor Baseline Study _08022022 (002) 3.2 - Final Report for Berbera Corridor Endline Study_18082023
Nimule / Elegu OSBP	5.1 - FINAL TMEA AVV-BF Report 10.01 Elegu Nimule 5.2 - 2013 Final Report_Nimule Elegu Traffic Survey_submitted_467869900048814149 5.3 - Copy of Copy of TRAFFIC FLOW JUNE2020 to JULY2021 5.4 - Endline Evaluation of UPSIDE _RMPB_31.05 5.5 - PRESENTATION TO TMA OFFICIALS - 4-03-2023
Goli / Mahagi OSBP	4.13 - Goli M&E documents 4.1 - 20240308 APEX-TPM_AVV-BF TMA Mahagi Draft (002)\ 4.10 - TMA-FCDO Comments TPM_AVV-BF Mahagi Draft (002) 4.11 - Endline Evaluation of UPSIDE _RMPB_31.05 4.12 - Environmental and social management plan_OSBP Mahagi2 4.13 - Goli M&E documents 4.14 - Mahagi OSBP phase 2 (4204) FY 2022-23 MIS Report 4.15 - ODI_Impact of Regional infrastructure for trade facilitation on growth and poverty_2016 4.16 - OSBP Presentation 4.17 - OSBP toolkit initial draft 4.18 - PAPER F (ii) - Final Report OSBPs Impact 4.2 - Concept Note for Mahagi OSBP and DRC Customs - 15 03 24 4.3 - Draft Final report - DRC Cross Border Trade Programme - 2023 4.4 - Endline Evaluation of UPSIDE _RMPB_31.05 4.5 - Goli Mahagi Logframe 4.6 - Integrated Border Management Programme II PAR 4.7 - IVX_TMEA_Final Baseline Survey Report_DRC_Kalundu Kasenyi and Mahagi_English_Submitted 4.8 - IVX_TMEA_Final Baseline Survey Report_Uganda Transport Programmes_Ntoroko and Goli 4.9 - PAR CBT DRC V16 2016-4-20

ANNEX B. THEORY OF CHANGE (TOC)

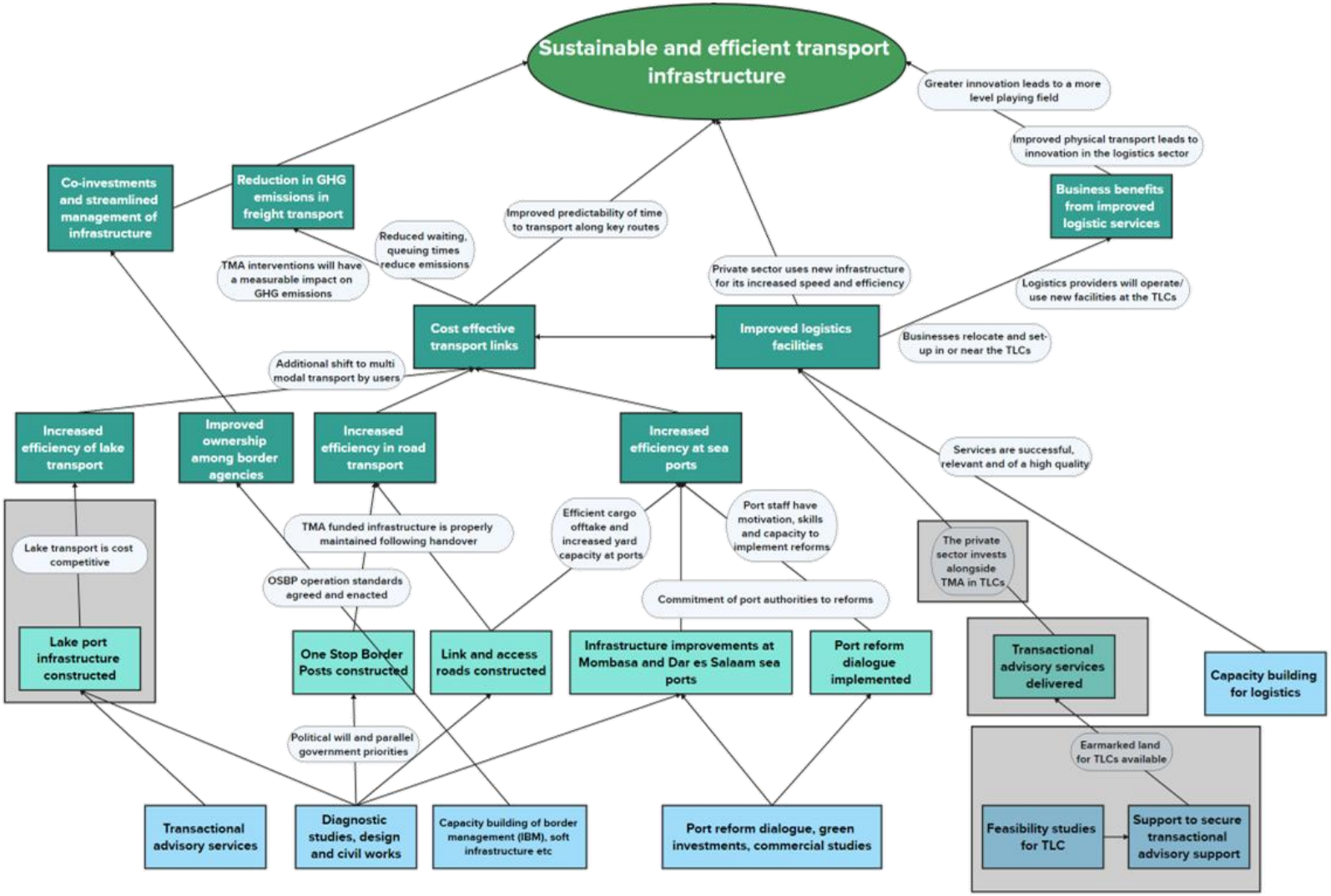
Figure 23. Original Transport Infrastructure Portfolio Theory of Change



The following figures display the original Theory of Change (ToC) provided by TMA and the revised ToC resulting from the workshop led by EDI Global on 7th August 2024.

Error! Reference source not found. presents the initial ToC, which outlines the assumed causal pathways linking activities, outputs, outcomes, and impacts of the transport infrastructure portfolio. This model served as the foundation for the evaluation, highlighting key areas for assessment.

Figure 24: Revised Theory of Change as an output from the ToC workshop as part of the evaluation



Error! Reference source not found. shows the revised ToC, developed during the ToC workshop on 7th August 2024. This revised model better maps and links evaluable projects to portfolio outputs and includes critical assumptions necessary for the causal pathways. Key changes include the exclusion of non-evaluable projects and the addition of new activities to ensure comprehensive coverage and accurate representation of the portfolio's impact.

ANNEX C. EVALUATION QUESTION (EQ) MATRIX

DAC Criterion	Primary Evaluative Question	Secondary Evaluative Question	Thematic Questions
Relevance	How well does the transport portfolio align with the strategic objectives of TMA and the needs of the trade corridors in target regions?	1.1. How do the goals of the transport interventions align with country needs?	1
		1.2. To what extent do the interventions address the specific challenges related to transport time and cost identified in TMA's Strategy 2?	4
		1.3. Are the interventions reflective of transporters' needs?	4
		1.4. Are interventions reflective of business needs?	4
		1.5. Are interventions reflective of global climate agendas	3
Effectiveness	How effectively does the transport portfolio contribute to reduced transport time and costs, and other intended outcomes?	2.1. What measurable impacts on transport time and cost reductions have been documented because of the interventions?	7
		2.2 What economic benefits result from reduced transit times?	4
		2.3. How well have the interventions achieved the expected trade facilitation and regional integration outcomes?	7
		2.4. What are the unintended outcomes, if any, and their implications on the overall effectiveness of the transport interventions?	4, 6, 7
		2.4.1 What benefits accrue to the ports and OSBPS because of reduced transit times?	4, 6
Efficiency	How economically are resources utilized to achieve the outcomes of the transport portfolio?	3.1. To what extent did TMA manage to deliver the interventions on time and on budget?	7
		3.2. Are there examples of resource wastage or optimal resource use within the interventions that could inform future planning?	1, 7
		3.3. What improvements can be made to enhance the efficiency of future transport interventions?	1, 7
		3.4 To what extent have the interventions led to efficiencies in the operations of ports, highways, and OSBPs?	6, 7
Impact	What are the broader economic, social, and environmental impacts of the transport portfolio?	4.1. Beyond trade facilitation, what are the economic impacts of the transport interventions, such as job creation or local economic development?	3
		4.2 To what extent have trade volumes increased because of the interventions?	7
		4.2.1 What impact have trade volumes had on increasing competition?	4
		4.2.2 Have trade volumes increased in both directions?	4
		4.3. How have the interventions impacted social aspects like community access to markets and services?	3, 4

DAC Criterion	Primary Evaluative Question	Secondary Evaluative Question	Thematic Questions
		4.4. What are the social and environmental impacts, both positive and negative, of the implemented transport interventions?	3
		4.4.1 What climate benefits result from reduced transit times?	4
		4.4.2 What socio-economic benefits have resulted from the interventions?	3, 6
Sustainability	Are the benefits of the transport interventions likely to be sustained over time?	5.1. What mechanisms are in place to ensure the sustainability of the transport infrastructure improvements?	5
		5.2. How is local capacity being built to manage and maintain the intervention infrastructure post-TMA intervention?	4, 5
		5.3. What financial models or partnerships are in place to support the ongoing maintenance and potential expansion of the transport infrastructure?	3, 5

Question number	Thematic questions
1	What are the key learning points from the implementation of TMA's transport infrastructure interventions?
2	Have the assumptions in the ToC held, and change happened as expected?
3	Cross cutting themes: What has been the impact of the interventions in terms of gender and inclusion and the environment?
4	Unintended consequences are very important. For example, what were the unintended consequences in moving people affected by the projects to other locations (although this is the responsibility of government)? Or what are the unintended consequences of the OSBPs operationalization in terms of border officials having more time to interrogate particular groups of traders such as female traders?
5	Sustainability: What are the arrangements in place to maintain the infrastructure? This assessment should include human resources to operate the facility (e.g. an OSBP) and whether refresher training is offered when staff move to different positions, as well as other sustainability considerations.
6	Are officials implementing IBM processes as intended? Has their behaviour changed?
7	Are monitoring systems and processes sufficient for TMA to engage in adaptive management of project implementation?
8	To what extent have the data limitations relevant to infrastructure investments, identified in Strategy 1 evaluation, been addressed? I.e. availability of key performance data.

ANNEX D. SAMPLING APPROACH

This annex presents the sampling methodology for each of the data collection activities that were conducted as part of this evaluation.

SAMPLING METHODOLOGY OF QUANTITATIVE SURVEYS

MOMBASA ROADS - USER SATISFACTION SURVEY

The user satisfaction survey targeted both motorised road users (lorry drivers, private cars, taxis, matatus, tuk-tuks, motorbikes) and non-motorised users (pedestrians). Although the sample sizes per user per site were purposively drawn rather than representative of the proportion of road users, this approach ensured coverage of all key road users. Traffic data from the Mombasa Roads Endline 2023 indicated that the majority of road users were 'other motorised vehicles'. To better understand the infrastructure's impact on trade, we oversampled lorry drivers, who provided valuable insights.

During preliminary consultations, it was noted that lorry drivers required authorisation from their organisation management before participating. Consequently, the initial approach of stopping lorries on the road was revised. The new approach involved engaging the Kenya Transport Association (KTA) to provide a list of 10 container freight stations (CFS), including a mix of small, medium, and large CFS, both local and international. We then contacted the CFS management teams to inform their drivers about the study and share a contact list of 10 to 15 drivers per CFS. EDI Global randomly sampled 9 drivers per CFS and arranged in-person interviews at agreed locations. This flexible deployment across Mombasa avoided the need for police support and ensured that lorry drivers familiar with the Mombasa Road projects participated. While in-person surveys were preferred, phone interviews were conducted if necessary.

For other motorised vehicles, the initial proposal remained unchanged. We requested the County Government of Mombasa to deploy the County Traffic team to support EDI Global field teams in stopping vehicles on the roadside. Field team members were stationed at safe and accessible locations on selected roads, such as Airport Road, Port Reitz Road, Magongo Road, and Kipevu Road. They aimed to complete three interviews per hour, with quotas for different vehicle types (e.g., 20% private cars, 20% matatus). Field team members randomly stopped vehicles to cover a range of types, with flexibility for public vehicles like matatus.

The survey content for lorry drivers, other motorised users, and pedestrians was similar, focusing on frequency of road use, perceived changes in travel times, costs, accidents, congestion, and security. The survey was designed to be brief (10-15 minutes), especially for private vehicles intercepted on the road. Following the inception report's approval, the EDI Global team developed the data collection tools in partnership with TMA.

MOMBASA ROADS - MSME SURVEY

The MSME Survey aimed to assess the economic impact of the Mombasa Roads infrastructure on businesses of all sizes. We focused on large logistics providers, manufacturers, wholesalers, and container freight stations (CFS) as prime beneficiaries, while also including smaller businesses to capture a broader impact.

We implemented a quantitative 30-minute survey with micro, small, and medium businesses along the completed road sections. Sample sizes varied based on the volume of businesses observed during the scoping visit.

The survey targeted 110 MSMEs across various road sites. We used a random walk sampling method, where interviewers were dropped at specific sections and walked in an agreed direction with a skip pattern (e.g., every fifth business). This approach ensured a diverse range of business types and owner genders. The survey included questions

on business type, costs, customer access, transport costs, business performance, unintended impacts, customer satisfaction, safety, and susceptibility to climate shocks.

HARGEISA BYPASS - USER SATISFACTION SURVEY

The user satisfaction survey for the Hargeisa Bypass targeted motorised road users, including lorry drivers and other vehicles (private cars, taxis, matatus, tuk-tuks, motorbikes). Pedestrians were not included due to the lack of pedestrianisation. We used a purposive, non-representative sampling approach, ensuring a range of road users while oversampling lorry drivers, who are key to trade along the Berbera Corridor. The target sample size was 260 lorry drivers and other motorised vehicle users.

For lorry drivers, surveys were conducted at security checkpoints and roundabouts at both ends of the bypass, and a lorry stopping point near the Berbera checkpoint. Permission from the Somaliland Roads Authority was obtained. For other motorised vehicles, enumerators were stationed at entry/exit points to the bypass and in Hargeisa City.

NIMULE / ELEGU OSBP - BORDER USER SURVEY

The user satisfaction survey for Nimule/Elegu OSBP followed a purposive sampling approach to include both motorised and non-motorised users, addressing gaps in data to answer the evaluation questions. Recent (2024) time and traffic survey data indicated an average pedestrian flow of 750 per day at Elegu OSBP, with many cross-border traders. The sampling focused on non-motorised users to gather data on local economic development and ease of doing business for small traders.

The target sample size was a total of 250 respondents across: commercial road users (fuel tankers, containerised trucks, warehouse and packaging facility users), private road users (passenger vehicles), civilian pedestrians, and cross-border traders.

For commercial vehicles, two enumerators were stationed in the packaging/verification yard. Passenger vehicle surveys were conducted in waiting and queuing areas. Pedestrian and cross-border trader surveys were conducted by two enumerators in the immigration corridor. Authorisation was obtained from the Commissioner of Customs, URA, and shared with OSBP staff at Elegu to facilitate the data collection process.

GOLI/MAHAGI OSBP- BORDER USER SURVEY

The user satisfaction survey for Goli/Mahagi OSBP aimed to assess user experience with a sample frame of 385 motorised users, ensuring 95% confidence and a 5% margin of error. The final sample size was 252 motorised users and non-motorised users.

The survey included commercial road users (fuel tankers, containerised trucks, warehouse and packaging facility users) and private road users (passenger vehicles). Data collection for commercial vehicles was conducted in the packaging/verification yard, while passenger vehicle surveys were done in waiting and queuing areas. Pedestrian and cross-border trader surveys were conducted in the immigration corridor.

QUALITATIVE DATA COLLECTION

MOMBASA ROADS - IN-DEPTH INTERVIEWS WITH LARGE FIRMS

The in-depth interviews (IDIs) targeted large manufacturing, logistics, wholesale firms, and container freight stations (CFS) to assess the economic impact of the Mombasa Roads infrastructure. Preliminary discussions with key stakeholders indicated that these firms were heavily consulted during the construction process and likely have reliable business cost data to highlight changes before and after the infrastructure completion.

We conducted 9 IDIs with senior personnel at qualifying firms. Given the large volume of CFS in Mombasa, we purposively sampled CFS firms and large firms engaged in manufacturing, logistics, or wholesale located near the target road sites. These interviews were pre-arranged and conducted by an experienced qualitative interviewer from our team. The IDIs were recorded, and summary transcripts of the discussions were used for analysis.

The topic guide for the IDIs included questions on project alignment with business needs, key logistic routes, participation and engagement with TMA and partners, economic benefits, unintended consequences, project timeline, areas for improvement, changes in trade volumes, social and environmental impacts, job creation, susceptibility to climate shocks, and perspectives on current road management and maintenance.

MOMBASA ROADS - COMMUNITY CASE STUDIES

Beyond the core impacts on road users and the private sector, we aimed to conduct two case studies focusing on climate risk alleviation and female inclusion, which are key themes for TMA and its donors. These case studies involved recorded qualitative interviews with summary transcripts used for analysis.

The first case study was initially planned to be conducted at the 'Star of the Sea' girls' primary school, located near Mbaraki Road. The school, situated at a low point in the landscape, regularly experienced flooding during the rainy season. The construction of the Bamburi Drainage Outfall aimed to alleviate this flooding. During a scoping trip, we met with the School Principal, who agreed to participate. However, due to respondent fatigue as she was involved in another FCDO evaluation, we were advised not to proceed with the interview. We hope to access materials from her other interview to be able to build a case study for the final report.

The second case study focused on a female MSME entrepreneur located on one of the road sites. The respondent needed to have been present before and after the infrastructure completion, ideally on a section with new street lighting. This case study aimed to examine themes of female entrepreneur safety and security, economic, and environmental changes. We engaged with TMA and project engineers to identify potential respondents, with additional candidates identified through the MSME survey. We still need to identify someone from the MSME survey data who can be called for further insights, which will be done for the final report.

HARGEISA BYPASS - FGDS WITH MSMES

To gain the perspective of MSMEs operating along the Hargeisa Bypass, we conducted four focus group discussions (FGDs) with MSME owners. Given the assumption that there are fewer MSMEs along the bypass compared to Mombasa, the FGDs were designed to ensure comprehensive coverage.

We sampled 3 MSME owners, covering the trade, services, and manufacturing sectors. We used a convenience sampling approach at different locations along the bypass, recruiting MSME owners near the targeted sections. The MSME FGDs covered topics such as business origin and set-up, direct effects of bypass construction (relocation, setting up, compensation, restricted customer access), perceived changes in business accessibility, business safety and security (including gender perspectives), changes in business performance, and unintended impacts.

HARGEISA BYPASS - KIIS WITH STAKEHOLDERS

We conducted KIIs with five key stakeholders engaged in the Hargeisa Bypass project. A total of 8 KII were conducted with stakeholder from the proposed list of representatives from the Somaliland Roads Authority, Berbera Port, Somaliland Ministry of Finance, Somaliland Chamber of Commerce, and the TMA Somaliland Programme Manager.

The topics of discussion varied slightly between stakeholders but were structured using the evaluation questions and OECD-DAC criteria. These interviews aimed to gather insights on the relevance, efficiency, impact, and sustainability of the Hargeisa Bypass infrastructure.

NIMULE / ELEGU OSBP - IDIS WITH SMES

The sampling strategy for the qualitative interviews in this project followed the same purposive approach as the quantitative survey, focusing on both motorised and non-motorised users to address gaps in data and answer the evaluation questions.

We conducted 8 IDIs with various stakeholders, including 3 SMEs near the OSBP, 3 cross-border women enterprises, and 2 local councillors from Elegu town. Traders for IDIs were identified through the Cross Border Trade Association chairman and organised outside the OSBP premises, most likely in the market facility.

The IDIs covered topics such as the influence of the OSBP on ease of doing business, reasons for starting the business, availability of premises and other facilities, registration, permits, clearance processes, ease of cross-border trade before and after the OSBP, safety and security in cross-border movement and trade, consistency of the clearance process, satisfaction ratings of infrastructure facilities, and changes in trade operations before and after the OSBP. This comprehensive approach ensured a detailed understanding of the impact of the OSBP on various business activities.

GOLI/MAHAGI OSBP - IDIS WITH SMES

For the qualitative component of the Goli/Mahagi OSBP project, we employed a purposive sampling approach similar to the quantitative survey, ensuring a comprehensive understanding of both motorised and non-motorised users' experiences.

We conducted 8 IDIs with various stakeholders, including 3 SMEs near the OSBP, 3 cross-border women enterprises, and 2 local councillors from Goli town. Traders for IDIs were identified through local trade associations and organised outside the OSBP premises, most likely in market facilities.

The IDIs covered topics such as the influence of the OSBP on ease of doing business, reasons for starting the business, availability of premises and other facilities, registration, permits, clearance processes, ease of cross-border trade before and after the OSBP, safety and security in cross-border movement and trade, consistency of the clearance process, satisfaction ratings of infrastructure facilities, and changes in trade operations before and after the OSBP. This comprehensive approach ensured a detailed understanding of the impact of the OSBP on various business activities.

ANNEX E. LIST OF STAKEHOLDERS CONSULTED

Key project stakeholders were actively engaged during the inception phase through initial consultations, a critical component of our methodology. These consultations allowed the evaluation team to establish rapport and access essential project-related networks. The EDI Global evaluation team conducted these preliminary consultations with the stakeholders outlined in Table 17 below.

Table 17. Key stakeholders consulted during the evaluation inception phase

Project	Stakeholders
Mombasa Roads	✓ Engineer Albert Keno – County Government Mombasa (Chief Engineer of Mbaraki Road / Bamburi Drainage Outfall) ✓ James Okero – County Government Mombasa (Chief Engineer of Mbaraki Road / Bamburi Drainage Outfall) ✓ Engineer Benjamin Esiliah – Independent Consultant – (Consultant Engineer on Magongo Road, Airport Road / Port Reitz Road) ✓ Engineer George Wambugu - Independent Consultant – (Deputy Consultant Engineer on Magongo Road, Airport Road / Port Reitz Road) ✓ Engineer Achini Kiburi – KenHA – (Resident Engineer of Kipevu Road) ✓ Engineer Hannah Ngugi – TradeMark Africa – (Programme Manager, Infrastructure) ✓ John Basweti – TradeMark Africa – (Programme Officer, Infrastructure)
Hargeisa Bypasss	✓ Vincent Rudahunga (TMA) ✓ Abdi Osman (TMA) ✓ Abdirahman Abdilahi (TMA) ✓ Abdirahman Mohamed Egeh (Ministry of Finance Development – Berbera Corridor Coordination Office) ✓ Ibrahim Ismail Elmi (Secretary General - Somaliland Chamber of Commerce, Industry and Agriculture – SLCCIA) ✓ Muuse Ibraahim Yuusuf (Vice – President - Ministry of Transport and Road Development) ✓ Jama Mohamed (Commercial Manager – DP World)
Nimule / Elegu OSBP	✓ Abel Kagumire - Commissioner Executive Office Operations ✓ Yasin Luwaga – Customs Officer, URA, Elegu OSBP ✓ Wallace Bindebba – Incharge, Immigration, Elegu OSBP ✓ Hose Nyangweso – OSBP lead, East African Community ✓ Engineer Enzama Godfrey – East African Community, Principal Chief Engineer ✓ Anna Nambooze - Country Director, Uganda (TMA) ✓ David Baziwane – TradeMark Africa, Programme Manager ✓ Eunice Mbage - TradeMark Africa, Programme Officer, IBM and OSBPs
Goli / Mahagi OSBP	✓ Abel Kagumire - Commissioner Executive Office Operations ✓ Robert Kirpou, URA Incharge, Goli OSBP ✓ Customs officer, URA, Goli OSBP ✓ Peter Allan, Incharge, Immigration, Goli OSBP ✓ Oyut Clinton, Screening officer, Port health, Goli OSBP ✓ Agathe Alegi, Immigration incharge, Mahagi OSBP ✓ Delphin Bashige, Customs Incharge, Mahagi OSBP ✓ Ruffin Abisa, Incharge, Port Health, Mahagi OSBP

ANNEX F. REFERENCE GRAPHS

Table 18: Comparative breakdown of time taken for border activities

	Goli		Elegu	
Border activities	Before	After	Before	After
Overall	17hrs 29 mins	7 hrs 23mins	59hrs 50 mins	6 hrs 8 mins
Queuing	8hrs 25 mins	5hrs 13mins	13hrs 38mins	4hrs 9mins
Customs clearance	3hrs 43 mins*	46mins	22hrs 12mins	59mins

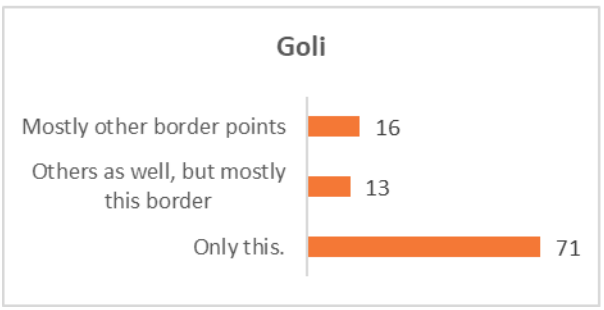
Table 19: Breakdown of time taken for border activities

Border	Overall	Queuing	Vehicle health	Passport control	Customs control	Standards declaration	Health declaration
Goli	7 hrs 23mins	5hrs 13mins	5	13	46	10	9
Elegu	6 hrs 8 mins	4hrs 9mins	7	19	59	10	4

Table 20: Costs incurred by border users at Nimule based on survey data

Border crossing activity	Average costs in 2024 (USD)
Tariffs/ duties	0.89
Licensing fees	2.27
Permits	0.72
Insurance	2.43
Storage	0.09
Accommodation	4.07
Meals and entertainment	5.19
Security	0.51
Bribes/facilitation fees	0.77

Figure 25: Border preference among pedestrian cross border traders



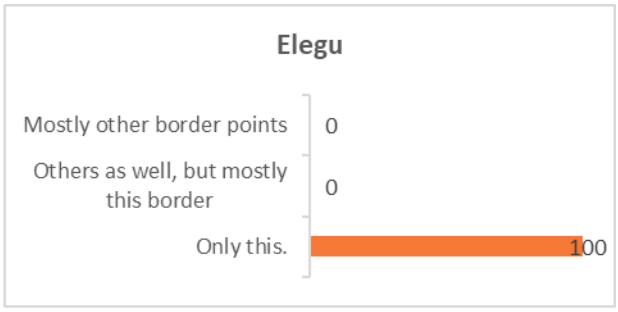


Figure 26: Reason for border preference among CBTs

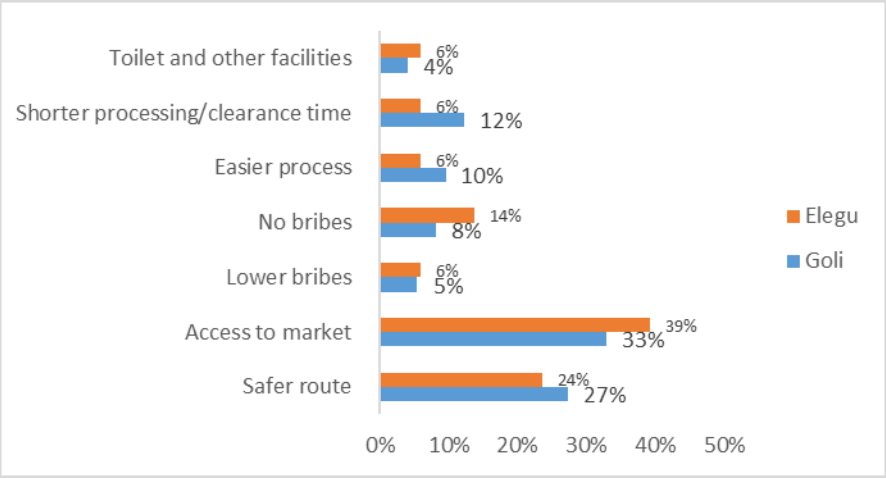


Figure 27: User Satisfaction Score for Goli and Elegu OSBP users

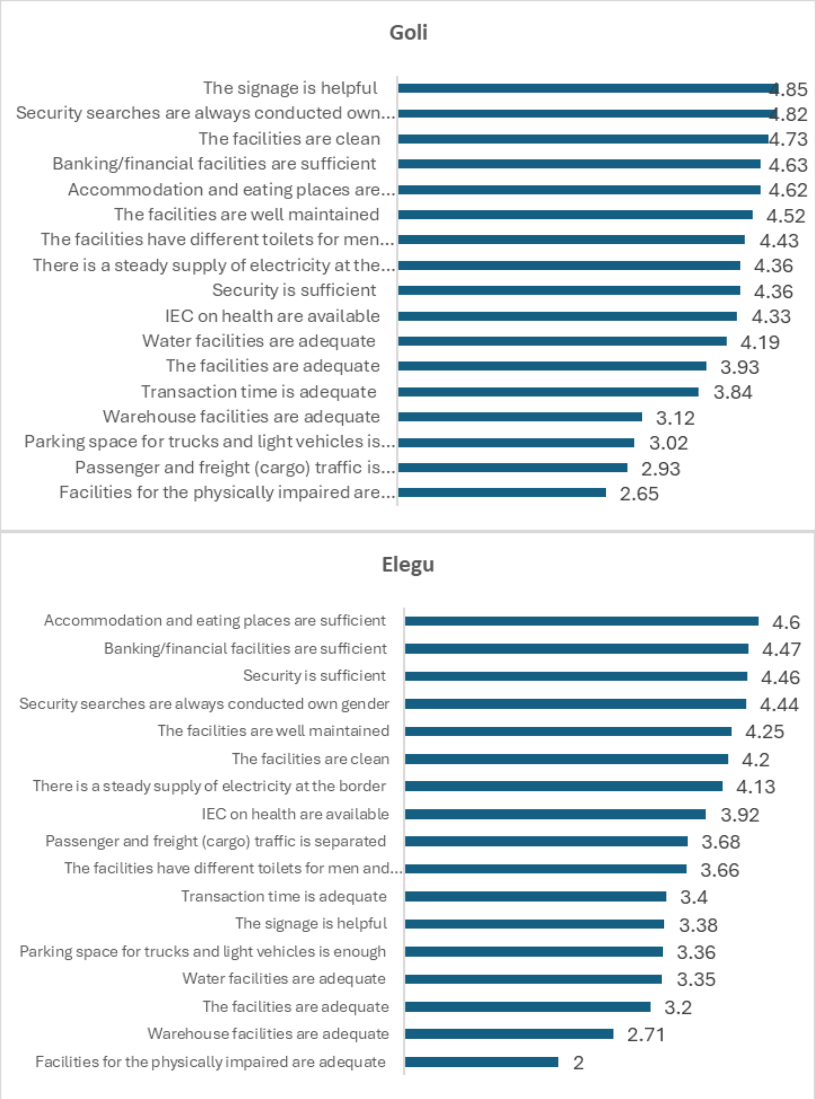


Figure 28: User Satisfaction among Mombasa and Hargeisa road users