



Evaluating the impact of BII's investment in ports in Somaliland

Insights from DP World Berbera

Authors: Edward Hedley, Johan-Paul Verschuure, Johan Gauderis and René Kim

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steward redqueen



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Disclaimer

The views expressed in this report are those of the evaluators. They do not necessarily represent those of British International Investment or any individuals and organisations referred to in the report.

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Acronyms

ADFD	Abu Dhabi Fund for Development
AIS	Automatic Identification System
BEZ	Berbera Economic Zone
BII	British International Investment
BMPH	berth moves per hour
CAGR	Compound Annual Growth Rate
CCECC	China Civil Engineering Construction Corporation
CPPI	Container Port Performance Index
DRC	Democratic Republic of the Congo
FCDO	Foreign, Commonwealth & Development Office
FDI	foreign direct investment
FEU	forty-foot equivalent unit(s)
GDP	gross domestic product
GEEIS	Gender Equality European & International Standard
GHG	greenhouse gas
GMPH	gross moves per hour
ITS	Interrupted Time Series
km	kilometres
KPI	key performance indicator
m	metres
MHC	mobile harbour crane
MT	metric tonne
PwC	PricewaterhouseCoopers
RTG	rubber-tyred gantry
STS	ship-to-shore
TEU	twenty-foot equivalent unit(s)
ToC	theory of change
UAE	United Arab Emirates
UN Comtrade	United Nations Comtrade Database

Executive summary

Investment context and purpose

This study assesses the economic impact of British International Investment's (BII) investment in the expansion of Berbera Port in Somaliland, undertaken as part of a wider evaluation of BII's infrastructure portfolio by Itad and Steward Redqueen. The analysis is designed to deepen BII's evidence base on the role of infrastructure investments in delivering development impact.

The expansion of Berbera Port is being driven primarily by DP World Berbera under a long-term public-private partnership with the Government of Somaliland. In early 2022, BII joined as a minority investor, as part of a broader partnership with DP World to support the modernisation and expansion of ports and inland logistics across Africa and to improve African trade with the rest of the world. Berbera is one of three initial investments under this partnership, alongside Dakar (Senegal) and Sokhna (Egypt).

Berbera Port is a strategic gateway for Somaliland and a potential alternative trade corridor for Ethiopia, which currently channels about 95% of its trade through Djibouti. Developing Berbera provides opportunity to strengthen Somaliland's economy by improving trade infrastructure, reducing costs for importers and exporters and serving as a platform for private sector investment. Berbera Port also offers the potential to strengthen regional trade resilience and diversification, offering Ethiopia an additional trade route that reduces dependence on Djibouti. This strategic benefit is expected to strengthen further as progress is made toward a formal transit and trade agreement between Ethiopia and Somaliland.

The investment is strategically significant for BII. Port infrastructure is a growing component of its transport and logistics portfolio and Berbera provides a case to examine how such investments contribute to BII's objectives in frontier and fragile markets where infrastructure gaps are most acute.

By articulating a theory of change for port investments and applying a light-touch methodology combining operational data, economic modelling and qualitative insights, the study also serves as a test case for how BII might assess the impacts of other port projects in its portfolio.

The results

In 2024, the UK Government's Foreign, Commonwealth and Development Office (FCDO) and BII commissioned this study to examine how the investment has influenced port capacity, efficiency and user outcomes, and to examine its wider economic and environmental effects. The study focuses in particular on changes in trade flows, transport cost savings, employment, value addition and greenhouse gas (GHG) emissions.

The impact study, conducted by independent evaluators, Itad and Steward Redqueen, finds that the immediate results of the upgrading of the container terminal by DP World Berbera are clear: the container volumes handled since 2017 would not have been feasible with the capacity of the terminal prior to the expansion. Moreover, the market share of the port of Berbera in the relevant port range grew three times as fast after 2017 than before 2017, which is a significant result. This is generating measurable economic impacts on the Somaliland economy, including through job creation and value addition, as well as environmental benefits. On the other hand, it is still too early to see the full impact of the Phase 1 expansion project; it was only completed at

the end of 2021 and its full capacity is not yet needed for handling the current volume. The impact of the Berbera Economic Zone (BEZ) also remains under way.

The expansion of Berbera Port has markedly increased its handling capacity. Container throughput capacity has expanded from 150,000 twenty-foot equivalent units (TEU) to 500,000 TEU, supported by new quay length, deeper draught and modern cargo handling equipment in Phase 1. The port can now accommodate larger vessels and is positioned for further expansion under Phase 2.

Operational efficiency has improved significantly. Vessel turnaround times have decreased from 64 hours in 2018 to 25 hours in 2024, supported by investments in digital systems and modernised management practices. These improvements are reflected in user perceptions and in Berbera's higher ranking in the World Bank's 2024 Container Port Performance Index.

Container traffic at Berbera Port has increased substantially since the expansion. Improvements to physical infrastructure and operational procedures have enabled the port to attract additional demand. From 2016 to 2019, annual throughput grew by 44% (a compound annual growth rate of 13%). Growth slowed during the initial period of the COVID-19 pandemic (2020–22) and during recent political unrest, but overall volumes have remained relatively stable and well above pre-expansion levels. In 2024, Berbera handled approximately 53,000 TEU more containers than in the year just before the expansion was completed. The share of regional trade handled by the port also grew steadily during this period from 9% in 2017 to 14.3% in 2024.

Average vessel size has increased, reflecting Berbera's improved capacity. The most recent data suggests that average vessel size rose from 1,314 TEU in 2018 to 1,898 TEU in 2024 (based on the first 20 weeks of 2024). This shift highlights Berbera's ability to handle larger ships, resulting in reduced per-unit shipping costs through economies of scale.

The port's competitive hinterland is expanding into eastern Ethiopia and Somaliland. Modelling shows that Berbera now offers cost-competitive access to parts of eastern Ethiopia, particularly areas lying beyond the reach of the Addis Ababa–Djibouti railway. Djibouti retains a cost advantage for trade to and from central and western Ethiopia where the rail corridor offers lower intermodal transport costs and shorter transit times (although rail capacity is currently limited and it handles a small fraction of total Djibouti volumes), but Berbera's position has strengthened across southeastern regions where trucking remains the dominant mode. These shifts are already encouraging a gradual rerouting of trade from Djibouti to Berbera, especially in the Somali region of Ethiopia.

Transport cost savings for importers and exporters are estimated at \$8.4 million in 2024. These savings come from larger vessel calls and shorter vessel turnaround times. Adjusting for new users, net cost savings amount to \$6.9 million. While the extent of pass-through to importers/exporters and ultimately to end-consumers is uncertain, the results support improved market access in underserved regions.

The expansion is generating measurable environmental benefits. Larger vessels, shorter berth times, and reduced trucking distances together deliver an estimated annual reduction of 7,651 tonnes of CO₂.¹

¹ This estimate reflects efficiency improvements on a pro rata basis. It does not account for the overall increase in trade volumes, which may offset some of the net environmental gains.

The expansion has generated direct and indirect job creation and value addition. In 2024, the upgraded port and its surrounding ecosystem, including DP World Berbera's operations, local supply chains, and the BEZ are estimated to support around 2,490 jobs and \$45.1 million in value added to the Somaliland economy. This includes approximately 1,315 direct jobs within the port, 175 jobs in supplying sectors, and 1,000 jobs associated with activities in the linked BEZ.

Additional economic benefit attributable to the expansion is estimated at 921 jobs and \$16.7 million in value added in 2024. These net results adjust for the proportion of container traffic (around 37%) that is considered additional since 2017 and would not have materialised without the expansion. On this basis, the port's expansion contributed an extra 0.4% of Somaliland's GDP in 2024.

DP World Berbera is making investments in workforce localisation and gender inclusion. DP World Berbera has trained Somalilanders to take on all crane operations and developed leadership programmes to support female employment. As of 2024, women made up 10% of the management team, with a target of 20% by 2030, in a traditionally male-dominated sector.

Method

The study applied a light-touch methodology designed to track changes before and after the Phase 1 expansion of Berbera Port and to estimate wider economic effects. An interrupted time series (ITS) approach was used to analyse port capacity, traffic volumes, operational efficiency and market share over a 10-year period. A logistics cost model compared total transport and logistics costs through Berbera and Djibouti to estimate Berbera's competitive hinterland and transport cost savings. A modelling framework was also applied to quantify direct and indirect impacts on employment and value addition in Somaliland, drawing on data provided by DP World Berbera and supplemented with industry benchmarks. Evidence was triangulated with interviews with key stakeholders, including port users, shipping agents, DP World Berbera and former government officials.

The analysis focuses on impacts within Somaliland and does not include potential effects on the wider Ethiopian economy,² nor on broader behavioural or consumer-level responses to improved port performance. The model also relies on a number of assumptions and proxy estimates given the limited availability of detailed economic and labour market data.³ The results were subject to an independent peer review by Dr Bart Kuipers (Erasmus UPT, Rotterdam), who found the overall framework and economic impact estimates to be reasonable and consistent with international practice

Implications and recommendations

The expansion of Berbera Port shows how carefully targeted infrastructure investments in fragile or underserved markets can generate meaningful improvements in trade connectivity, efficiency and economic opportunity. Key lessons for BII's future port and logistics investments, and for monitoring and evaluation, include:

1. Prioritise catalytic investments in underserved frontier markets

² Broader regional spill-over effects, particularly within Ethiopia, were not modelled due to data limitations.

³ Parameters for employment and value addition draw on Rebel's proprietary port impact models and industry averages from comparable ports in Oman, Indonesia, the Netherlands and Belgium.

The Berbera case demonstrates that well-structured investments can unlock substantial trade and economic benefits in low-income contexts, where commercial finance is limited and infrastructure needs are greatest. BII can continue to focus on projects that enhance regional connectivity and reduce logistics costs in historically underserved geographies.

2. Leverage partnerships with experienced global operators

Collaboration with DP World highlights the value of aligning with established developers and operators to manage risk, achieve operational improvements and attract additional private capital. Platform investments and strategic partnerships can de-risk frontier market projects and amplify impact. In the case of this investment, DP World offers industry-leading expertise in the transport sector with linked investments in logistics and warehousing and the ability to enhance value chain integration beyond port operations.

3. Integrate complementary ecosystem investments

The broader economic impact of Berbera's expansion has been reinforced by linked investments such as the BEZ and road upgrades. BII can identify opportunities to invest in these "linked ecosystems" to catalyse greater job creation and local value addition.

4. Embed inclusive and sustainable practices

Workforce localisation, skills development and gender-focused initiatives in Berbera show how port investments can enhance employment quality and diversity. BII can encourage investees to establish gender and youth-focused initiatives to maximise social returns.

5. Use early-stage measurement and modelling to track impact

Operational data, logistics modelling, and qualitative insights can help capture emerging results in capacity, efficiency and cost savings. BII can embed lighter-touch and more rapid techniques, such as modelling based on the logistics cost model demonstrated through this study, into its monitoring toolkit to get an early and robust assessment of the impact of port investments.

1. Introduction

1.1. Study context and purpose

This study aims to assess the economic impact of British International Investment's (BII's) investment in the expansion of Berbera Port in Somaliland. It forms part of a wider evaluation of BII's infrastructure portfolio being conducted by Itad and Steward Redqueen. This topic was identified as a relevant area to study to deepen BII's evidence base with regard to key investments in its portfolio.

Berbera Port is jointly owned by BII, DP World Berbera, and the Government of Somaliland. The investment is seen as having strategic potential to improve trade infrastructure in the region, enhance market access for Ethiopia, and stimulate economic activity in Somaliland. This study sets out the rationale and aims of the investment and proposes a theory of change (ToC) to explain how investments in port infrastructure can contribute to BII's objectives.

The study uses this ToC as an organising framework to discuss early evidence of impact from this investment. It focuses on outputs and emerging outcomes linked to improvements in port capacity, efficiency and traffic flows, and uses an economic model to consider changes to Berbera Port's 'competitive hinterland'⁴ as well as direct and indirect impacts for the Somaliland economy. These insights are triangulated with interviews with key informants. It is intended that the approach developed and tested through this study may be replicated by BII in future to identify the impact of port investments elsewhere in its portfolio, utilising a relatively light-touch and rapid methodology based on operational data, economic modelling and qualitative insight.

1.2. Strategic relevance to BII

This study was identified, through an in-depth review of BII's infrastructure portfolio conducted by Itad and Steward Redqueen, as a priority area in which BII could better understand how its investments are producing impact.⁵ There are several reasons why this case is considered useful:

- It provides an opportunity to understand the pathways to impact for port infrastructure, which is a growing part of BII's portfolio. Although transport & logistics makes up a relatively small share, it is the third-biggest and fastest-growing part of the infrastructure portfolio. Port investments comprise 80% of the transport & logistics portfolio.
- Findings from the portfolio review suggest that BII's additionality is likely to be greatest in lower-income countries, where infrastructure needs are more acute and commercial investment is more limited. This study focuses on an investment in such a context.
- It helps to test a potential assessment tool that could be adapted by BII for future analysis of port expansion. This includes identifying data requirements and key dimensions of impact to be considered in future evaluations.

⁴ The competitive hinterland of a port refers to the inland area from which the port can attract cargo or passengers in competition with other ports. It is determined by factors such as transport costs, travel time, logistics efficiency, service frequency, infrastructure connectivity and trade patterns.

⁵ <https://www.bii.co.uk/en/news-insight/insight/articles/evaluating-the-impact-of-british-international-investments-infrastructure-portfolio-our-high-level-response/>

1.3. Background to the investment being studied

1.3.1. Overview of the investment partnership

The expansion of Berbera Port is being driven primarily by DP World Berbera under a long-term public-private partnership with the Government of Somaliland. In early 2022, BII joined as a minority investor in the project. This partnership is part of a broader effort to support the modernisation and expansion of ports and inland logistics across Africa to improve African trade with the rest of the world.⁶ Berbera is one of three initial investments under this partnership, alongside Dakar (Senegal) and Sokhna (Egypt). DP World is notable within BII's wider investment strategy as a strategic 'platform' developer. The company offers industry-leading expertise in the transport sector with linked investments in logistics and warehousing and the ability to enhance value chain integration beyond port operations.

1.3.2. Strategic importance of Berbera

Berbera Port is the main overseas trade gateway of Somaliland and is located on the Gulf of Aden. It plays a strategic role in meeting the basic import needs of the Somaliland population. Berbera is also a potential alternative gateway to the much larger Ethiopian economy, which is landlocked and currently channels about 90% of its trade through Djibouti.⁷ Developing Berbera provides an opportunity for it to develop into a regional logistics hub with the potential to strengthen regional trade resilience and diversification, offering Ethiopia an additional trade corridor that reduces dependence on Djibouti.

Djibouti Port is a large, well-established container port that serves as the dominant maritime gateway for Ethiopia. It benefits from modern facilities and a direct standard-gauge rail link to Addis Ababa, offering high-volume, multimodal connectivity. This has made Djibouti the default route for Ethiopian trade; in this context, the development of Berbera Port under DP World Berbera's management, supported by BII's investment, is part of a wider vision to diversify Ethiopia's access to global markets and enhance regional trade connectivity.

The expansion of Berbera Port is also expected to provide significant benefits to the economy of Somaliland and serve as a platform for private sector investment in a frontier market with limited exposure to foreign direct investment to date. This aligns with BII's focus on investing in low-income and fragile countries, with a view to raising living standards over the long term.⁸

Somaliland's economy is heavily reliant on imports and informal livestock exports. Economic development has been constrained by challenges of market access linked to limited transport infrastructure and a reliance on inefficient trade corridors. Prior to the expansion, Berbera Port had limited capacity and limited international connectivity. Road connectivity is also poor; in Somalia and Somaliland, only around 13% of roads are paved and only 31% of the rural population have year-round road access.⁹ The neighbouring Somali region of Ethiopia is also underserved, depending primarily on long-haul routes to and from Djibouti. For Ethiopia, improved access to Berbera provides not only a shorter and potentially more cost-effective

⁶ <https://www.bii.co.uk/en/news-insight/news/were-partnering-with-dp-world-to-chart-a-stronger-course-for-african-trade-around-the-world/>

⁷ <https://www.worldpoliticsreview.com/djibouti-ethiopia-economy-trade>

⁸ BII (2022) *Productive, Sustainable and Inclusive Investment: 2022–26 Technical Strategy*.

⁹ <https://www.worldbank.org/en/news/press-release/2022/09/29/somalia-receives-58-million-in-world-bank-financing-to-develop-regional-transport-infrastructure-a-first-in-decades>

trade route for its eastern regions, but also a strategic alternative to the Djibouti corridor. Diversification in its access to ports is one of the objectives of the Ethiopian transport master plan 2022–2052. In the first phase, the focus is on developing corridors to the ports of Berbera and Assab (the so-called Trident axis, with Djibouti as the third prong). In later phases, the plan considers improvements to the transport links to Port Sudan, and the ports of Massawa, Mogadishu, Lamu and Mombasa.

1.3.3. Port investment timeline and scope

In 2016, DP World Berbera signed a public–private partnership agreement with the Government of Somaliland for the development and management of Berbera Port. The agreement spans an initial 30-year concession, with potential for a 10-year extension. It includes investment by DP World Berbera of up to \$442 million, phased over time and linked to throughput milestones. BII became a shareholder in early 2022, entering into a joint shareholding arrangement with DP World Berbera (with a 65% share in total, alongside the Government of Somaliland).¹⁰

Phase 1 of the port expansion was completed in 2021. This included deepening the draught to 17 metres (m), constructing a 400m quay, and adding three ship-to-shore (STS) gantry cranes and eight rubber-tyred gantry (RTG) cranes. Container capacity increased from 150,000 twenty-foot equivalent units (TEU) to 500,000 TEU.¹¹ The expansion also included a 25-hectare terminal yard. Phase 2 is planned to further increase container capacity to 2 million TEU by extending the quay to 1,000m and installing additional gantry cranes.¹²

DP World Berbera has also implemented a range of social, environmental and operational initiatives to modernise Berbera Port, including the introduction of automated systems, improvements in safety and traffic management, and environmental safeguards. These efforts have been accompanied by significant workforce development, including the localisation of technical roles, promotion of national staff into leadership positions, and the early stages of gender-focused initiatives. These are discussed further in Section 4.4.1 of this report.

1.3.4. Supporting investments

The investment also includes the development of a Special Economic Zone – the Berbera Economic Zone (BEZ) – located 15 kilometres (km) from the port along the Berbera Corridor and including serviced plots, warehouses, open yard storage and office space. The BEZ aims to support sectors such as logistics, manufacturing and trading, and offers a one-stop shop for customs and registration alongside tax and duty exemptions.

1.3.5. Road connectivity projects

Road connectivity projects are under way to support Berbera’s position as a trade route for Ethiopia. These include the Berbera Corridor Road upgrade project, co-funded by the Abu Dhabi Fund for Development (ADFD) and the UK’s Foreign, Commonwealth & Development Office (FCDO) (completed in 2022), and the 22.5km Hargeisa Bypass Road, funded by FCDO. Together, these projects aim to improve access from Berbera to the Ethiopian border and reduce

¹⁰ <https://documents1.worldbank.org/curated/en/927461561663095167/pdf/Main-Report.pdf>

¹¹ The TEU is a standard unit of measurement used in the shipping industry, particularly for cargo capacity on container ships and at container terminals. A TEU is based on the volume of a standard 20-foot intermodal container.

¹² This report’s analysis focuses on the impacts and developments associated with Phase 1 of the Berbera Port expansion, completed in 2021. The timing and implementation of Phase 2 remain uncertain and will depend on future throughput growth and operational needs.

congestion in Hargeisa. Together with the BEZ, these projects are key to unlocking the potential benefits offered by an expanded Berbera Port – they all have a contributing role to play in achieving the economic impacts described in this report, and in many cases it is not feasible to attribute particular results to individual projects, given the available data.

1.3.6. Expected development impact

The project aims to increase the availability and affordability of goods and indirectly support more than 50,000 jobs in and around Berbera. PricewaterhouseCoopers (PwC) estimates suggest that a 25% improvement in port performance across sub-Saharan Africa could reduce the cost of imported goods across the region by \$3.2 billion annually and add \$2.6 billion in export value.¹³ BII-commissioned estimates on the impact of upgrading Berbera Port indicate that, by 2035, the port could eventually facilitate trade equivalent to 27% of Somaliland's gross domestic product (GDP) and 75% of regional trade, while for neighbouring Ethiopia the port could eventually handle trade equivalent to 8% of GDP and support 1.2 million jobs, including 60,000 directly through the port.^{14, 15} As Somaliland's first major foreign direct investment (FDI) and first international concession outside of the mineral sector, the investment is also expected to demonstrate investability and crowd in additional private capital.¹⁶

1.3.7. Impacts of the Red Sea crisis

The Red Sea crisis, which escalated from late 2023, has affected Berbera and Djibouti ports in distinct ways. Berbera Port has seen a notable decrease in activity, with lower volumes in 2024. In contrast, Djibouti Port experienced a substantial increase in container handling in 2024, with additional transshipment activity taking place. Although there has been a reported 60% increase in ship traffic in the Red Sea since August 2024, overall volumes remain well below pre-crisis levels, and major shipping lines continue to reroute, indicating an ongoing impact on ports in the region.

¹³ https://safety4sea.com/wp-content/uploads/2018/04/PwC-Strengthening-Africas-gateways-to-trade-2018_04.pdf

¹⁴ As quoted by BII at <https://www.bii.co.uk/en/story/port-of-berbera/>

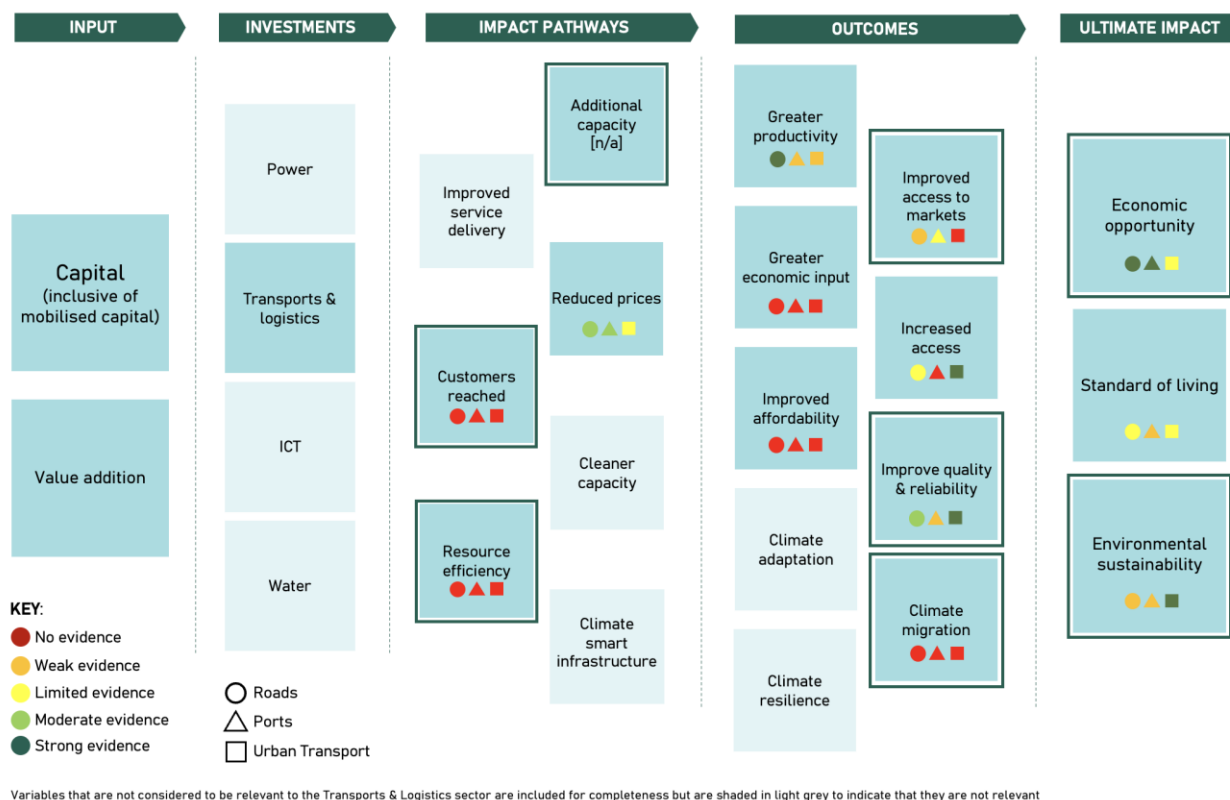
¹⁵ The figures developed through this earlier BII-commissioned study are not directly comparable to the figures presented in this report. The earlier study measured the value of goods passing through the port relative to the size of the economy only, whereas this report uses a detailed modelling approach to estimate the economic value generated to date by increased port efficiency and trade diverted to Berbera Port.

¹⁶ <https://www.bii.co.uk/en/story/port-of-berbera>

2. Impact framework and theory of change (ToC)

This study is framed by BII's infrastructure sector impact framework (see Figure 1). This sets out how investments in infrastructure projects produce greater economic impact and improved standards of living.

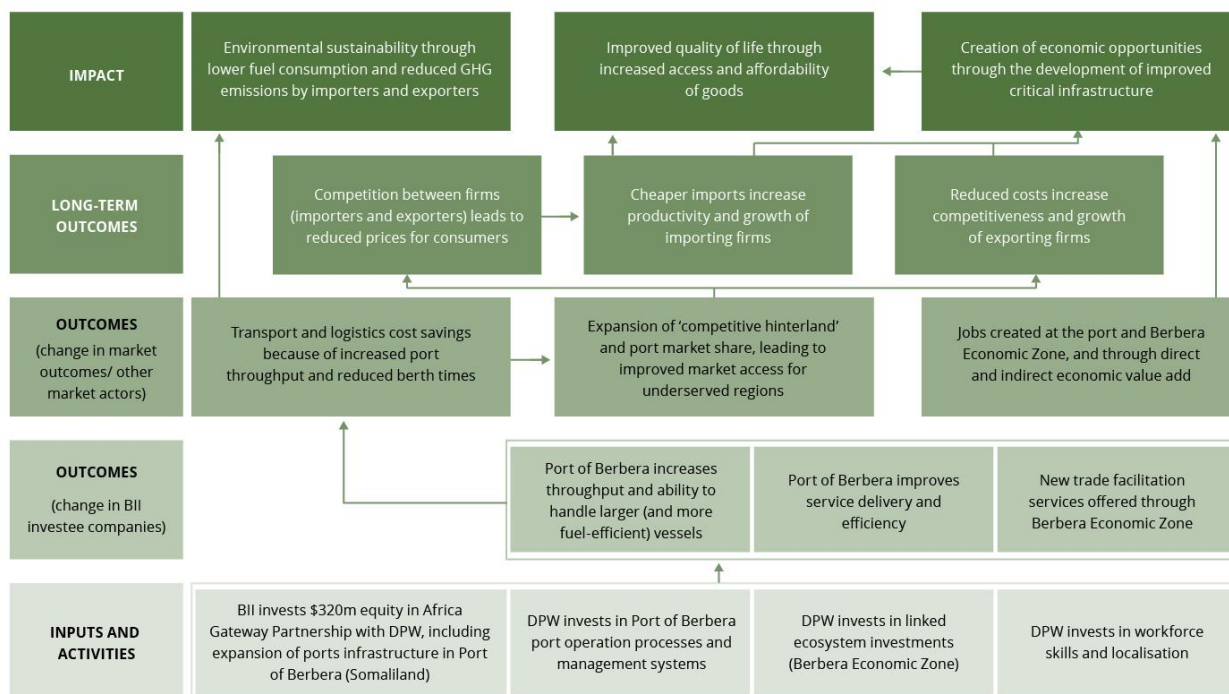
Figure 1. BII's impact framework for the infrastructure sector



The impact framework covers major infrastructure subsectors, including transport and logistics, but does not have a specific focus on investments in port expansion. As part of this study, an updated ToC has been developed which splits out and adds additional detail around the key impact pathways that are relevant to port expansion and upgrading (see Figure 2). This study focuses in particular on BII's impact pathways and outcomes outlined in blue. These are the impact pathways associated with additional capacity, efficiency of operation and customers reached.¹⁷ It draws on evidence from a range of sources to determine whether (and to what extent) these changes are being translated into outcomes (for port users), including improved market access, reduced costs of transportation, improved quality and reliability of service provision, and avoidance of greenhouse gas (GHG) emissions. It then considers emerging evidence that these changes are leading to improved economic opportunity in Somaliland in terms of direct and indirect job creation and value addition in the local economy. Given the data available to this study and resource limitations (see also Section 3), this study is not able to consider all impact pathways. In particular, it is not able to consider impact on standard of living for consumers resulting from cheaper imports, or whether cheaper inputs are benefiting producers based in Somaliland (although it does consider nascent evidence on the impact of the port expansion on exports from Somaliland).

¹⁷ Port use is used as a proxy for customers reached in this study.

Figure 2. Ports expansion ToC



The ToC in Figure 2 sets out in more detail how the investment in an expanded Berbera Port (brought about through inputs by DP World Berbera and BII) is expected to deliver wider development impacts.¹⁸

Activities: It describes four main categories of activities for port upgrading:

- investments in port infrastructure (for example, quay construction, larger-capacity cranes);
- investments in port processes and systems (including management practices and digital platforms);
- linked ecosystem investments (such as the BEZ and connecting roads);
- investments in workforce skills and localisation.

Outputs: These activities are expected to result in several immediate outputs, in particular increased throughput capacity and ability to handle larger vessels,¹⁹ improved service delivery and efficiency in handling vessels and new trade facilitation services offered through the BEZ.²⁰ These improvements are covered in Section 4.1 of this report.

Outcomes: Collectively, these outputs are expected to result in a number of improvements which are experienced by market actors in the wider economy. Transport and logistics cost savings are

¹⁸ This ToC intentionally focuses on measurable pathways at Berbera Port (capacity, efficiency, hinterland costs, etc.) which are the focus of this study. Administrative costs, geopolitical factors and broader contextual factors (such as the Addis–Djibouti rail link) are qualitatively acknowledged in this report but are out of scope for the current analysis.

¹⁹ This output area links to the 'additional capacity' Impact Pathway in BII's impact framework for the infrastructure sector (Figure 1).

²⁰ These output areas link to the increased 'resource efficiency' pathway within BII's impact framework for the infrastructure sector (Figure 1).

expected to result from the investments in port capacity and operations, which support increased port throughput and handling of larger vessels and reduced berth times. Evidence that these changes in the role and operations of the port are happening in practice are discussed in Section 4.2 of this report.

To estimate the degree of logistics cost savings which result from these changes, this study uses a 'transport cost model'; this is built on the core assumption that trade will naturally flow through the most cost-effective route, and that even small differentials in cost can affect routing choices. As such, as container handling at Berbera Port becomes more cost-efficient, its 'competitive hinterland' and market share is expected to expand vis-à-vis other ports in the region, which will result (in the medium-term) in improved access to market for port users, who will be able to take advantage of shorter (and cheaper) trade routes to Berbera Port.²¹ These outcome pathways are examined in Section 4.3 of this report.

Investments by DP World Berbera are also expected to generate immediate economic benefits. These are explored in Section 4.4 of this report, including direct job creation and value addition at the port and indirect value addition and job creation in the supply chain and in the BEZ.²² These benefits are explored through a modelling approach. This section of the report also uses a modelling approach to estimate reduced GHG emissions per tonne of cargo resulting from more efficient port operations and ability to handle larger, more fuel-efficient vessels.²³

Longer-term outcomes: The upgraded port is expected to generate longer-term outcomes and impacts, which (with the exception of GHG emissions avoided discussed above) are not explored in this study. Over the longer term, assuming competitive market conditions between port users (including shippers, freight forwarders and hauliers, etc.),²⁴ cost savings are expected to be passed on to end users in the form of reduced prices, resulting in three longer-term outcomes:

- i) lower prices of imported food and goods available to consumers;
- ii) increased productivity and growth of firms reliant on (now cheaper) imported inputs; and
- iii) enhanced competitiveness and growth of exporting firms.

In the context of Somaliland, of these three areas, the most immediate effect is expected to be lower prices of imported food and goods for household consumers. This is because Somaliland has a high trade intensity and is heavily reliant on imports, especially of foodstuffs (see Annex I: Trading balance and commodity composition profiles for Ethiopia, Somalia and Djibouti, focusing on containerisable goods of this report for further information on the trade profile of Somaliland and the wider region). The extent to which productivity and export-related benefits materialise is more uncertain given that the productive economy is more limited in Somaliland and neighbouring regions served by the port. Achieving such benefits is likely to take longer to emerge and depends on the existence of firms capable of scaling production in response to reduced input costs and the presence of a competitive export sector which is able to take advantage of improved logistics.

Impacts: At the impact level, the benefits of the upgraded port are ultimately expected to be felt in Somaliland and neighbouring regions in Ethiopia through improved quality of life as a result of

²¹ Links to the outcome on 'improved market access' within BII's impact framework for the infrastructure sector (Figure 1).

²² Links to the ultimate impact of 'economic opportunity' within BII's impact framework for the infrastructure sector (Figure 1).

²³ Links to the outcome on 'climate mitigation' and the ultimate impact of 'environmental sustainability' within BII's impact framework for the infrastructure sector (Figure 1).

²⁴ Analysis of these dynamics is beyond the scope of this study.

increased access and affordability of goods, and the creation of economic opportunities through the development of improved critical infrastructure. The port is also expected to contribute to improved environmental sustainability as a result of lower fuel consumption and reduced GHG emissions (per tonne).

3. Methodology

3.1. Overview of the methodology

This study fits within a set of wider evaluation designs developed by Itad and Steward Redqueen to assess the impact of selected investments in BII's infrastructure portfolio. These designs fit into three categories: (i) control-treatment designs based on the use of synthetic control groups; (ii) designs based on developing a modelled counterfactual; and (iii) interrupted time series (ITS) designs. This study uses an ITS-based approach, given that it is possible to track change in several key variables over time, before and after the Phase 1 expansion was completed. It is not possible, however, to observe change in wider impact indicators linked to the expansion of the port (such as impact on GDP), and a modelling-based approach using an industry-standard approach is used to estimate such impacts (as described below). While these modelled estimates provide insight into direct and indirect employment and economic output linked to port activities, the study does not assess broader behavioural changes by firms or end-consumers due to data limitations. As such, impacts on firm-level decisions, supply chain adjustments or consumer behaviour resulting from the port expansion remain outside the scope of this analysis. It is also not feasible to use a control-treatment based design for this study, given challenges in identifying a suitable control group.

This study was conducted in two stages. **Stage 1** reviewed data provided by DP World Berbera and available secondary data to assess changes in port capacity, traffic volumes and operational efficiency, and provided an initial assessment of Berbera Port's regional market share and cost-competitive hinterland using a proprietary transport cost model developed by Rebel.²⁵

Stage 2 built on this foundation to assess the wider economic effects of the investment. It used the same model developed by Rebel to estimate transportation cost savings, demand effects in the hinterland, employment generation and the growth of value-added services. The volume of containers handled in Berbera Port constitutes the basis for the estimation of direct and (part of) indirect value added and employment. Several economic activities (terminal, suppliers to the terminal and value-added logistics) can be quantified using parameters in function of number of containers processed. This analysis drew on data provided by the investee and was supplemented by industry averages taken from other Rebel studies in East and Southern Africa. The use of industry averages was necessary because of the absence of any data on the economic structure of the Berbera area or Somaliland. For the same reason, it was not possible to assess the wider impact of the expansion of the port on the Somaliland economy (firms relying on imports or exports). Interviews were conducted with key informants (including representatives of DP World Berbera, former government officials and port users, including logistics providers, importers and exporters) to check comprehension, supplement evidence collected from publicly

²⁵ Rebel is a consulting firm based in the Netherlands with significant experience with a range of clients in the ports and logistics sectors. This study draws on this experience and uses a proprietary logistics cost model developed by Rebel to estimate transport cost savings and wider economic benefits resulting from container terminal expansion.

available sources, and contextualise and deepen insights on the impacts of the partnership between BII and DP World Berbera.

3.2. Data points accessed and analytical approach

3.2.1. Stage 1

The first stage of the study analysed how Berbera Port expansion has affected port operations and regional competitiveness, using data provided by the investee and secondary data sources.

To assess **port capacity**, data from DP World Berbera was used to compare infrastructure features – such as quay length, draught depth, number of cranes, and throughput capacity – before and after the expansion.

To understand **port efficiency**, operational data from DP World Berbera was analysed, including key performance indicators (KPIs) such as berth moves per hour (BMPH) and gross moves per hour (GMPH). In addition, vessel time in port was assessed using Automatic Identification System (AIS) data from Alphaliner, to gauge changes in turnaround times.

To assess **port traffic and market share**, we compiled ten years of container throughput data for Berbera and comparator ports (e.g., Djibouti) from DP World Berbera, national statistics, port authorities' websites, and complemented with other credible informal sources. This enabled a view of changing traffic flows and relative market positioning over time. The study also examined Berbera's evolving role in regional trade, using vessel call data and deployed capacity to assess whether the port is accommodating larger vessels and attracting mainline services.

Finally, a **logistics cost model** developed by Rebel was used to estimate Berbera's competitive hinterland, comparing end-to-end transport costs from Berbera and Djibouti to different destinations in Ethiopia and Somalia. This model combined tariff data, vessel costs, distance matrices and GDP distribution to estimate where Berbera is cost-competitive.

3.2.2. Stage 2

Stage 2 builds on the above analysis to (i) compute an estimate of the total transport cost savings generated by the port expansion and improvement and (ii) assess direct and indirect economic impact for the Somaliland economy (contribution to GDP and employment). The approach draws on some data provided by the investee (throughput, employment and local sourcing of the container terminal). Additional input parameters were obtained from other port and economic impact studies conducted by Rebel in Oman (Sohar North expansion), Indonesia (Kuala Tanjung) and South Africa (Durban) among others. These parameters represent industry averages regarding share of value added in revenues, share of payroll in value added, and employment per hectare.

To isolate impacts which are attributable only to the expansion of the port (the net effect), the analysis in stage 2 takes into account that portion of the change in container volumes since 2017 (the year of the takeover of port operations by DP World Berbera) that is attributable to the upgraded port. This portion is determined by the observed change in the market share of the port in the relevant port range (Djibouti, Berbera and Mogadishu) since 2017. Data received on employment in the port and local sourcing is adjusted accordingly.

Table 1 Overview of analytical approaches used

Analytical approach	Purpose	Specific indicators and datasets used
Interrupted time series (ITS)	To determine the increase in container volumes attributable to the port expansion. Container volumes and market share of Berbera Port compared to Djibouti and Mogadishu ports before and after the upgrade.	Container throughput (TEU) for Berbera, Djibouti and Mogadishu ports from national and port statistics and informal company sources over a 10-year period; Observed change in the port's market share within the relevant port range since 2017.
Logistics cost model	To compare total transport and logistics costs via Berbera and Djibouti to estimate Berbera Port's competitive hinterland and total transport cost savings as a result of port upgrading.	End-to-end transport costs, including maritime transport costs, port handling and shipping costs, headline tariff and storage rates from the tariff books of Berbera and Djibouti ports. Distance matrices used to calculate transport costs. ²⁶ Container demand allocated based on regional GDP distribution (based on official GDP and population statistics).
Modelling for job creation and value addition	To estimate the direct and indirect economic impacts on the Somaliland economy, including job creation and value addition in the local economy.	Container throughput, payroll and local sourcing data from DP World Berbera. Industry averages on the share of value added in revenues, share of payroll in value added and employment per hectare taken from other Rebel port economic impact studies (mainly in Oman, Indonesia, Netherlands and Belgium).

3.3. Interviews conducted

Interviews were conducted with six stakeholders purposively selected for their knowledge of Berbera Port operations, including:

- 1 × interview with a former employee of the Ministry of Finance & Economic Affairs, Somaliland
- 3 × interviews with port users, including a logistics firm and two large importers and exporters, covering a range of sectors including leather, sugar, rice, flour, tuna, soap, cement and steel
- 1 × interview with an agent for a shipping line
- 1 × interview with representatives of DP World Berbera.

3.4. Limitations

The analysis in this study is constrained primarily by the almost complete lack of data on the labour market and the economic structure of Somaliland. As a result, the analysis draws to a large extent on industry averages taken from earlier studies conducted by Rebel, including work with Djibouti Port. Data was provided by the investee on port operations and headline data on container throughput, in addition to aggregate data on employment and local sourcing. More granular data on container origin/destination and type (such as reefer, as a proxy for content) was not made available, which prevented more detailed analysis of economic impact by sector.

²⁶ Refer to cost tables presented in Annex IV: Mapping the cost-competitiveness of Berbera Port and possible hinterland expansion.

Due to a lack of data, no analysis has been made of the impact of the upgraded port on the general cargo activities, which could have been analysed with additional data. These activities are likely to have been positively affected in a similar way as the container activities.

Resource limitations prevented the collection of primary data 'on the ground' with port users and other stakeholders. Available resources allowed for online interviews with six key respondents.

In addition to the data constraints noted above, the analysis does not incorporate potential macro-economic or trade-related effects in neighbouring Ethiopia. This exclusion reflects both the absence of formal trade data and uncertainty around the policy environment governing cross-border logistics.

The robustness of the results was reviewed through an independent peer review conducted by Dr Bart Kuipers (Erasmus UPT, Rotterdam), who confirmed that the ToC and overall approach are consistent with international cost-benefit analysis practice and that the magnitude of estimated impacts is plausible.

4. Key findings

4.1. Changes to port capacity

The Berbera Port expansion has significantly increased container handling capacity and enabled the port to accommodate larger vessels.

The investment has substantially enhanced Berbera Port's physical capacity. Completion of Phase 1 works in 2021 expanded container throughput capacity from 150,000 TEU to 500,000 TEU per year. This was achieved through major infrastructure upgrades, including the construction of a new 400m quay, deepening of the draught to 17m, and the installation of three STS gantry cranes and eight RTG cranes. These changes have enabled the port to receive larger container vessels and position Berbera to handle increased volumes as regional demand grows. A second phase of expansion is planned to further increase capacity to 2 million TEU, with additional quay length and crane equipment (see Table 2).

Table 2. Berbera expansion overview

	Before DP World (2016)	At Phase 1 expansion (2017)	Post-Phase 1 expansion (2021)	Future Phase 2 expansion
Container (TEU)	100,000	150,000	500,000	2,000,000
General cargo, bulk & break bulk (MT)	1,000,000	1,500,000	2,000,000	4,000,000
Livestock (head)	4,000,000	4,000,000	4,000,000	4,000,000
Cranes	None	3 mobile harbour cranes (MHCs)	3 STS QC and 3 MHCs	10 STS QC and 3 MHCs
Quay length (m)	650	650	1,050	1,650
Draft (m)	8–11	8–11	9–17	9–17
Reefer plugs	16	36	336 (624)	672 (1,248)
Berth moves per hour	8	30	50–75	100+

Port operations and management systems have been modernised.

Since assuming operational control of Berbera Port, DP World Berbera has implemented a range of soft infrastructure upgrades to improve port management and cargo handling. These include the introduction of automated systems and digital platforms for port management, which have enhanced tracking capabilities with the aim to improve operational efficiency.²⁷ This forms part of the broader shift away from previous ad hoc operational practices to a more structured,

²⁷ Including the Zodiac Terminal Operating System, Oracle Finance System, and Maximo Enterprise Asset Management System.

systems-based management approach which aligns Berbera with international standards in terminal operations and logistics systems.²⁸

The linked investment in the BEZ offers a further platform to improve trade facilitation.

The BEZ, located 15km from the port, was formally launched in March 2023 and is now operational,²⁹ offering serviced land plots, prebuilt warehouses, office space, and built-to-suit facilities for commercial and industrial users. A one-stop shop facility has been established to streamline business registration and customs procedures. The zone offers such incentives as corporate tax exemptions, duty-free storage, and allowances for 100% foreign ownership and profit repatriation. A number of companies have relocated to the BEZ or made commitments to do so, including multinationals from the food processing and logistics sectors.³⁰ Several respondents highlighted the BEZ's role (alongside the port itself) in improving trade facilitation and accelerating the adoption of more modern practices. Users of the port noted that the zone has brought together new trade-related services – such as freight forwarding, warehousing, inventory management and customs brokerage – that had not previously existed in Somaliland.

4.2. Changes to port operation and role

Port efficiency has improved, with an increase in container handling productivity since the expansion.

Available evidence suggests that the Berbera Port expansion has led to improvements in operational efficiency, particularly in container handling productivity. Data provided by DP World Berbera indicates that both BMPH and GMPH have increased sharply since the completion of the expansion (see Figure 3). These trends point to more efficient use of quay equipment and improved performance during vessel loading and unloading. This is supported by analysis of AIS data, which indicates that the average berth time per vessel call has decreased from 64 hours in 2018 to 25 hours in 2024.³¹

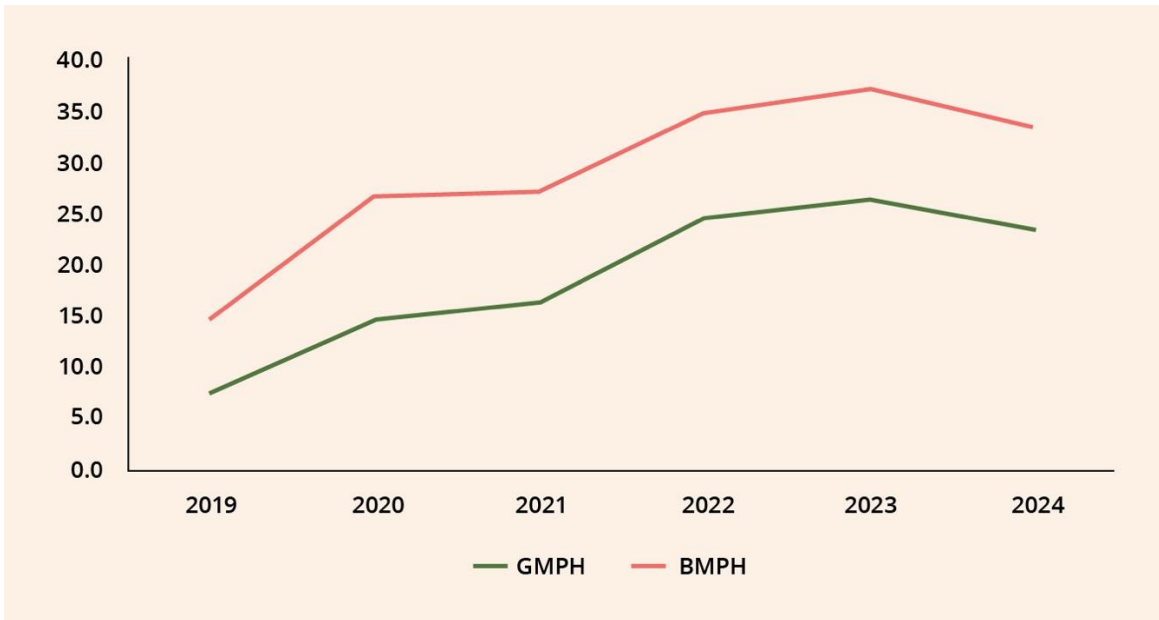
²⁸ Interview with representatives of DP World.

²⁹ <https://www.bii.co.uk/en/news-insight/news/british-international-investment-supports-inauguration-of-berbera-economic-zone/>

³⁰ Including IFFCO – a United Arab Emirates (UAE)-based edible oil packing plant – and CEVA Logistics.

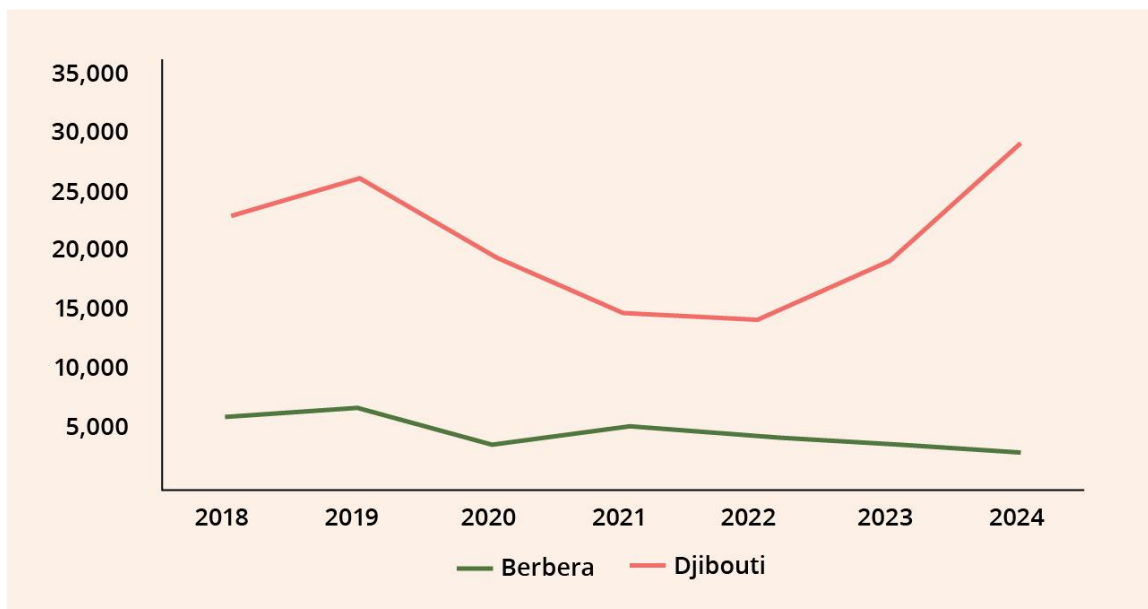
³¹ Analysis of publicly available AIS data.

Figure 3. Increase in port efficiency as measured by operational KPIs



The total aggregate time that vessels spend in Berbera Port has been falling over time (see Figure 4); this contrasts with Djibouti, which has seen an increase in total aggregate time in port in the last two years because of increasing congestion.

Figure 4. Total aggregate time (in hours) that vessels spend in Berbera and Djibouti ports



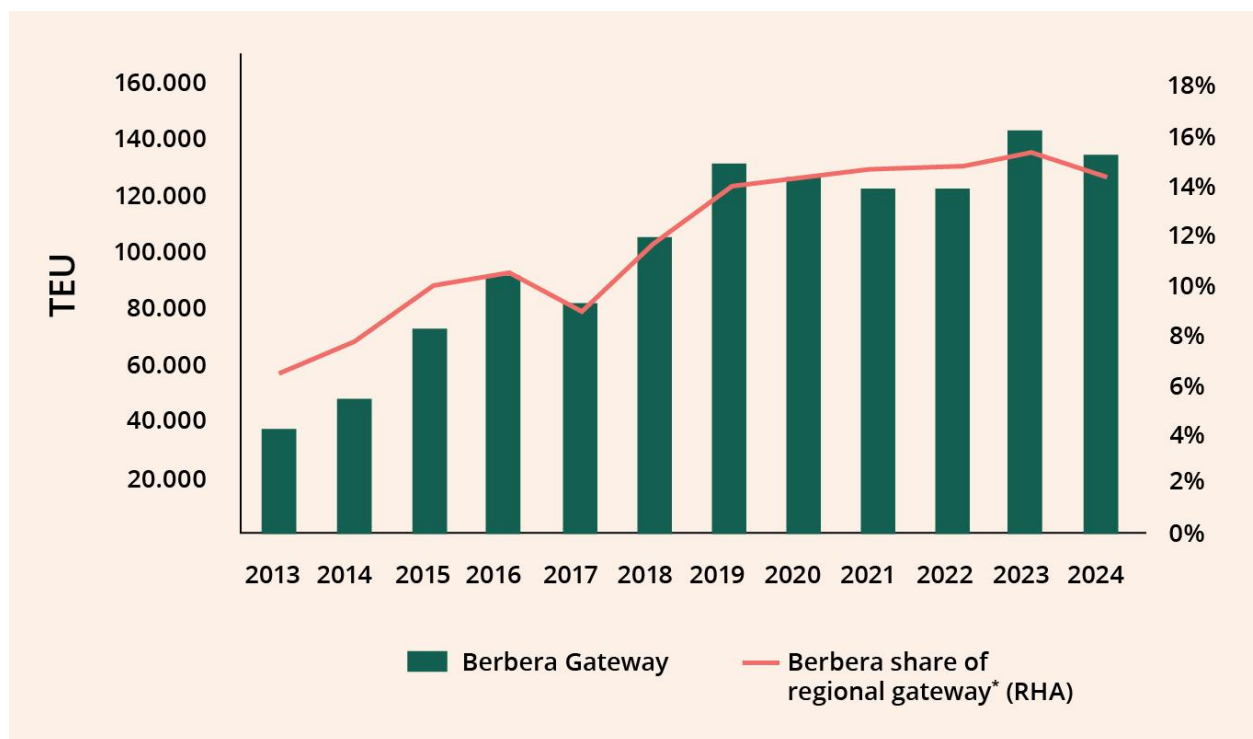
Berbera Port’s improvements in operational performance were recently reflected in the fourth Container Port Performance Index (CPPI) (2024), published by the World Bank and S&P Global Market Intelligence, which ranked Berbera Port above Djibouti Port, underlining Berbera as an increasingly credible competitor to Djibouti in the regional port ecosystem, although Djibouti challenged the calculations that led to this conclusion. Phase 2 of the expansion will increase Berbera’s container handling capacity primarily through lengthening the quay and adding additional equipment. This physical expansion may also enable greater operational efficiency by accommodating larger vessels.

The secondary data on port efficiency analysed through this study was widely supported by interviews with port users, who consistently noted improvements in cargo handling at the port since it was expanded and its systems modernised. Respondents consistently highlighted faster vessel turnaround times, improved operational efficiency and increased reliability (especially over alternative ports) in recent years, leading to faster delivery times for goods. An area for future improvement identified by respondents is digitisation, including for customs clearance, bills of lading and transit permits, which will further improve the experience of port users.

Port throughput and vessel size have increased, reflecting the impact of infrastructure and efficiency improvements.

Container traffic at Berbera Port has increased substantially since the expansion, suggesting that improvements to physical infrastructure and operational procedures have enabled the port to attract additional demand. From 2016 to 2019 growth was especially quick, with annual throughput increasing by 44%, representing a compound annual growth rate of 13%. As Figure 5 indicates, growth rates have slowed since 2019 in a period which has been marked by the COVID-19 pandemic (2020–22), the Red Sea crisis and wider political unrest in the region. Nevertheless, overall volumes remain well above the period before the port was expanded (pre-2016) and efficiency gains have not been eroded. Berbera Port handled approximately 53,000 TEU more containers in 2024 than it did in the year just before the expansion was completed. The share of regional trade handled by the port has also grown steadily during this period, to around 14.3% in 2024 (as discussed further below).

Figure 5. Container throughput (TEU) at Berbera Port and share of ports in the region



Source: National statistics for respective countries, Rebel analysis

*Total of Djibouti, Berbera and Mogadishu ports

The most recent data available suggests that average vessel size increased from 1,314 TEU in 2018 to 1,898 TEU in 2024, based on the first 20 weeks of 2024.³² This shift reflects Berbera Port's

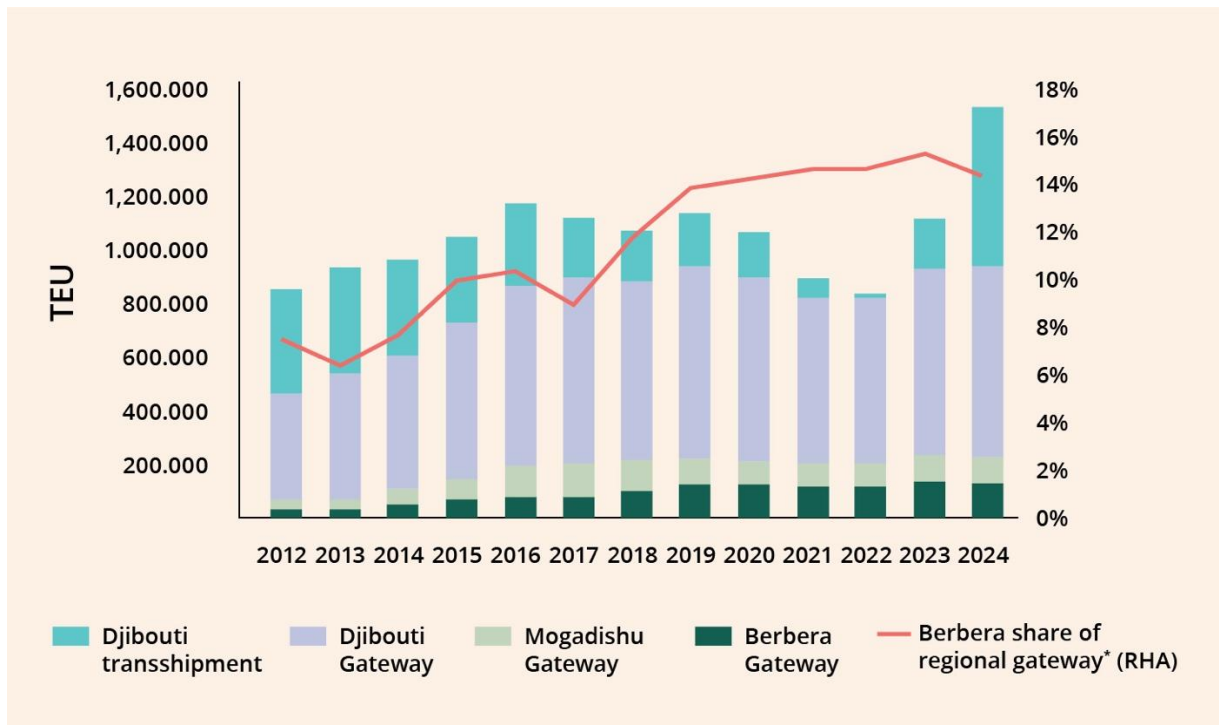
³² Analysis of Alphaliner data.

improved capacity to handle larger ships, resulting in reduced per-unit shipping costs through economies of scale (explored further in Section 4.3).

Berbera's market share has increased, emerging as a gateway port to hinterland regions.

Alongside growth in throughput, data suggests that Berbera Port's market share (among ports in the region) has also increased during the same period, although starting from a relatively low base. As shown in Figure 6, Berbera's share of regional gateway container traffic (not including transshipment) has nearly doubled over the period since the expansion began, rising from 9% in 2017 to just over 15% by 2023, although it has fallen back slightly (to around 14.3%) in 2024 as volumes at Djibouti Port (which were more significantly affected by COVID-19 and the Red Sea crisis) have recovered.

Figure 6. Container throughput East Africa – gateway/transshipment split

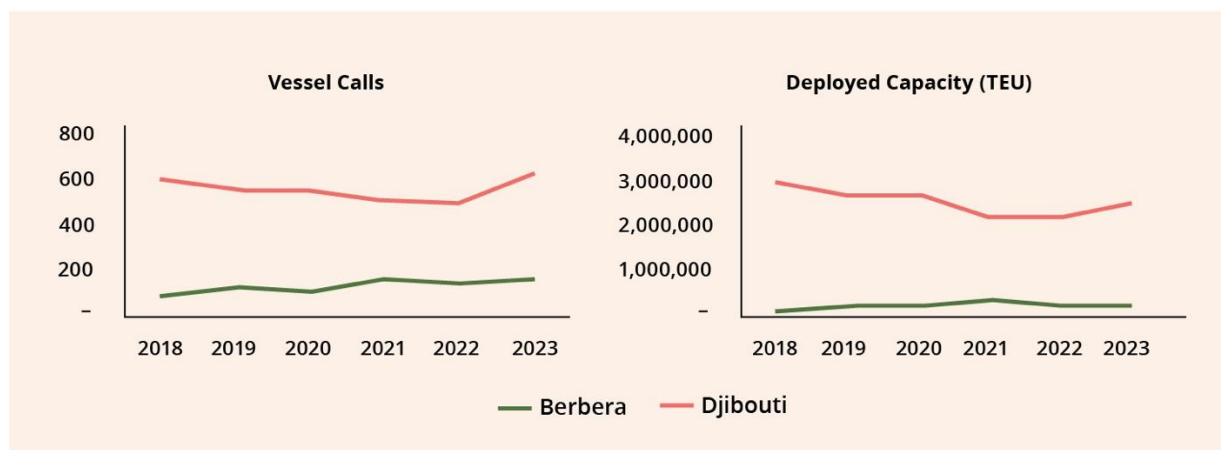


Source: National statistics for respective countries, Rebel analysis
 *Total of Djibouti, Berbera and Mogadishu

Figure 6 further indicates that container volume growth at Berbera Port consists largely of gateway traffic – that is, trade flows serving local and inland markets rather than transshipment. The significant volatility in volumes in 2021–23 experienced at Djibouti Port has largely been the result of fluctuating transshipment flows. In contrast, the steady growth in volumes at Berbera Port has been through (more predictable) gateway trade flows. This indicates that gateway traffic is being rerouted to Berbera Port, with more regions linking to the port to facilitate their imports/exports (as explored further below).

Although market share has grown quickly, Djibouti Port continues to handle significantly higher volumes overall (see Figure 7) and has recently seen a recovery in vessel call figures and annual cargo volumes (in TEU). Figure 7 further indicates Berbera Port’s role to date as a gateway rather than a transshipment hub, when interpreting the data in the charts to calculate the average deployed capacity per vessel. The average vessel size calling at Berbera remains significantly smaller than at Djibouti: whereas Djibouti sees an average deployed capacity of around 3,500 TEU, the figure for Berbera in 2023 was approximately 1,600 TEU. Early data suggest the average deployed capacity of vessels calling at Berbera has risen to approximately 1,900 TEU. However, this remains well below the average vessel sizes at Djibouti. This reflects the fact that most of Berbera’s container traffic is carried on feeder services that connect to major transshipment hubs such as Djibouti, Salalah, Colombo and King Abdullah and are provided by relatively small vessels. In addition, Berbera has two mainline services to date (CMA CGM and ESL) connecting to Far East Asian or European ports directly.

Figure 7. Vessel calls and deployed shipping capacity to the ports of Berbera and Djibouti



Source: Alphaliner, Rebel analysis

A further increase will require an expansion of the competitive hinterland served by the port and the improvement of hinterland transport links with Ethiopia.

As noted above, since 2019 growth in both absolute container volume and the market share of Berbera Port has slowed as a result of a number of geopolitical factors. Hence, the increased capacity under Phase 1 of the expanded port has not yet been utilised fully. A further significant increase in Berbera's utilisation and market share will likely require an improvement in hinterland transport connections with Ethiopia, building on the upgraded road between Berbera and the border in Tog Wajaale completed in 2023. The construction of a railway link between Berbera and Aysha in Ethiopia (where it would connect to the Addis Ababa–Djibouti railway) would provide an additional strong boost to the hinterland competitiveness of the port of Berbera. A formal transit agreement between Ethiopia and Somaliland would both streamline customs procedures and further enhance the competitiveness of the port for Ethiopia-bound trade.

4.3. Outcomes for port users

This section explores the 'outcomes' level of the BII impact framework and the port's ToC introduced in Section 2. It sets out the concrete benefits emerging from increased capacity at Berbera Port (Section 4.1) and from changes to its operation and role (Section 4.2). Specifically, it examines how Berbera's competitive hinterland is expanding into new areas, which is improving market access in previously underserved regions. It then considers what this means in terms of estimated transport cost savings for shippers and the environmental gains from shorter transport routes and more efficient port operations.

Berbera has begun to expand its competitive hinterland and to serve new regions of Ethiopia cost-competitively, which is improving market access in previously underserved regions.

Berbera has begun to expand its competitive hinterland, serving new regions of Ethiopia and improving market access in previously underserved areas. Recent traffic trends and modelling through a transport cost model (see Box 1) indicate that its captive hinterland now extends into parts of eastern Ethiopia and northeastern Somalia. Analysis based on total logistics costs

shows that Berbera can serve these areas at costs comparable to Djibouti, particularly where locations fall beyond the reach of the Addis Ababa–Djibouti railway.

Further analysis presented in Annex IV: Mapping the cost-competitiveness of Berbera Port and possible hinterland expansion (Table 13–Table 15) highlights that Djibouti retains a clear cost advantage to and from Addis Ababa and Robe³³ when the rail connection is taken into account, reflecting lower intermodal transport costs and shorter distances along the Addis–Djibouti corridor. These rail-based savings explain Djibouti’s continued dominance in Ethiopia’s central and western markets, while Berbera’s competitive reach has expanded mainly across southeastern and peripheral regions where trucking remains the primary mode and where distance advantages favour Berbera.

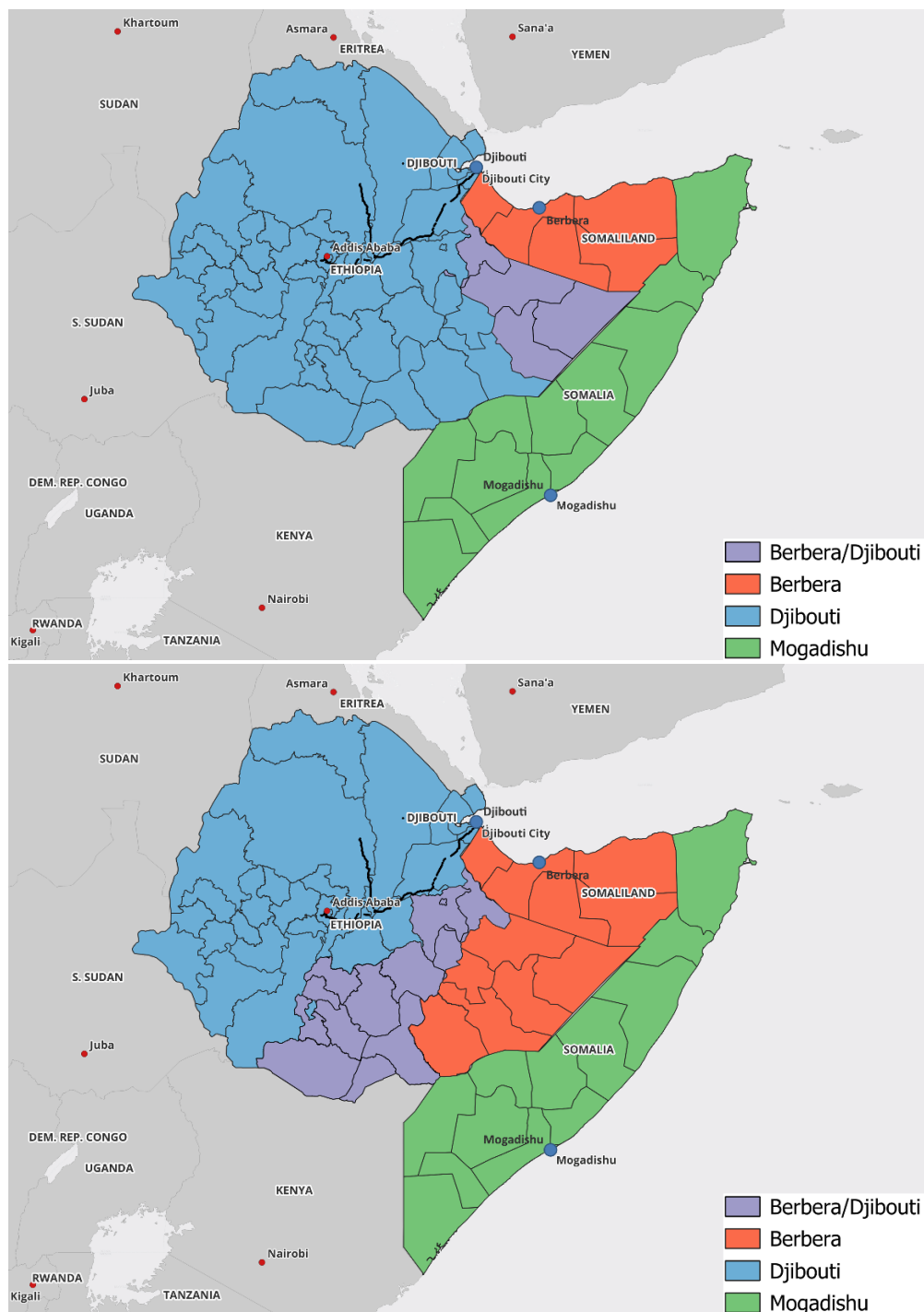
Figure 8 illustrates this geographic shift in areas where containers can be routed through Berbera and Djibouti at roughly the same total cost, marking the zones where competition between the two ports is strongest. These areas (shown in lighter dashed green) have expanded considerably since the investment.³⁴ Berbera’s competitive hinterland now reaches parts of northeast and southwest Ethiopia, just beyond the railway’s range and roughly equidistant from both ports – likely the source of increased traffic being rerouted from Djibouti to Berbera.

Berbera’s competitive hinterland, areas where it offers the lowest cost of access, has also widened, from northern Somaliland into parts of southeastern Ethiopia and northeastern Somalia, shortening transport routes and improving access in these regions. Djibouti’s captive hinterland, meanwhile, continues to cover most of western, southern and northern Ethiopia, where shorter trucking distances and the rail link give it a clear cost advantage.

³³ Addis Ababa and Robe in the Oromia Region of Ethiopia are selected as locations within the competitive hinterland of Djibouti Port.

³⁴ These maps are developed through a transport cost model. Modelling is used in the absence of actual data on the inland destination of containers and costs incurred by importers/exporters. See methodology for further explanation.

Figure 8. Areas of the region where Berbera (orange) and Djibouti (solid green) offer most competitive transport cost, comparing competitive hinterland before (top) and after (below) Phase 1 expansion



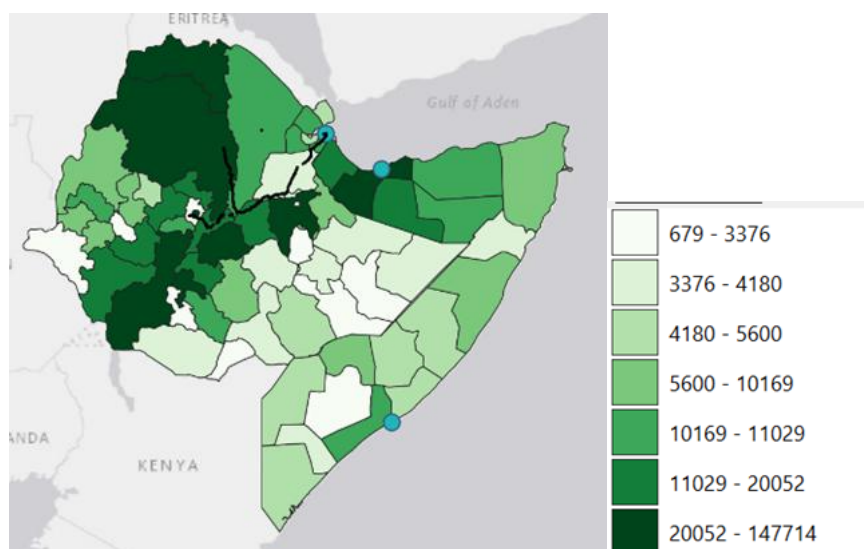
Source: Rebel analysis

It should be noted, however, as illustrated in Figure 9, that the level of cargo demand in these newly competitive areas remains relatively low. Figure 9 maps container demand across East Africa, using regional GDP as a proxy³⁵ (see Annex IV: Mapping the cost-competitiveness of

³⁵ Combined with data on container demand per port, market intelligence on transit volumes and intermodal volumes.

Berbera Port and possible hinterland expansion), showing that most demand is concentrated in western Ethiopia. The economic and population centre of Addis Ababa continues to be more competitively served by Djibouti because of proximity and infrastructure advantages.

Figure 9. Estimated TEU allocation per region in the hinterland (2023 TEU)



Source: Rebel analysis

Estimates suggest that of the 53,000 TEU increase in Berbera’s container volume since 2017, approximately 50,000 TEU has been rerouted from Djibouti (resulting in a gain of regional market share from 9% to 14%), while 3,000 TEU is attributed to demand growth in the hinterland of Berbera.^{36,37} Given the limited economic activity in its current competitive hinterland, future gains are likely to depend on Berbera Port’s ability to lower total logistics costs through strategies such as reduced tariffs, improved border processes, and better hinterland transport connectivity.

Box 1. Explanation of the logistics cost model

To assess the expansion of Berbera’s competitive hinterland, a logistics cost model was developed using industry-standard assumptions to compare total transport and logistics costs via Berbera and Djibouti. These costs include inland distribution at both origin and destination, port handling charges and ocean shipping costs. The model is built on the core assumptions, consistent with the ToC, that trade will naturally flow through the most cost-effective route, and that even small differentials in cost can affect routing choices. Improved port infrastructure in Berbera has enabled the port to handle larger vessels and operate more efficiently. This creates the conditions for direct vessel calls to Berbera that were previously not possible, shortening transport routes for certain inland regions.

³⁶ These estimates are calculated based on: (i) GDP figures from the Central Statistics Department of the Ministry of Planning and National Development of Somaliland, which show declining imports since 2017; and (ii) data on total gateway container throughput to ports in East Africa, which has been largely constant in the same period (see Section 4.2). Using these figures, it is possible to estimate the ‘additional’ container volume which is passing through Berbera as the result of the rerouting of cargo flows from neighbouring ports, rather than additional demand in Somaliland. Rerouting is thought to be a significant majority of the total growth in container throughput, and is occurring as a result of capacity and productivity increases achieved in the port.

³⁷ The container throughput of the port of Berbera rose from 82,000 TEU in 2017 to 135,000 TEU in 2024, which represents an increase of 53,000 TEU. In the same period the regional market share of the port of Berbera in gateway container traffic (i.e. without transshipment traffic) in the relevant port range (Djibouti, Berbera and Mogadishu) rose from 9% to 14.3%. If the market share of the port of Berbera had remained at 9%, its throughput in 2024 would have been only 85,000 TEU instead of 135,000 TEU ($85,000 = 135,000 \times 9/14.3$, rounded to thousands). The difference of 3,000 TEU with the throughput in 2017 reflects the increase due to hinterland demand growth. The other 50,000 TEU of the increase of throughput between 2017 and 2023 reflects rerouting from other ports (almost all from Djibouti).

As a result, Berbera now offers reduced transportation distances and lower associated costs for some locations.

The model assumes that the container volume handled by the port of Berbera depends on total logistics costs compared to rival ports (the most nearby port, Djibouti, in particular). If Berbera's total logistics cost is lower – or no more than 10%–20% higher – than Djibouti's for a given location, it has a probability of capturing the traffic originating from or destined for that location, with the probability depending on the degree of the cost advantage.³⁸ In other words, the larger the cost disadvantage, the lower the market share, with only a small market share expected to be captured with cost differences over 10%. Other factors (such as reliability and schedule frequency) can compensate for differences in measurable costs, so that even a route with measurable costs that are 10–20% higher than the best alternative may capture some market share. It is not possible to take these factors into account in this study. At the same time, the costs of switching transport mode (such as switching from rail to road transport or vice versa) can be significant, meaning larger cost differentials at the higher end of the scale may be needed. In this context, the rail link from Addis Ababa to Djibouti is likely to continue offering substantial cost advantages over road transport in the catchment area of both ports. For the purposes of this study, it is assumed that at present no rail-based container flows to and from Djibouti Port have switched to Berbera Port.

Areas that meet the 10–20% cost differential between Djibouti Port and Berbera Port are considered part of Berbera's competitive hinterland. These cost comparisons have been used to generate the maps in Figure 8, which illustrate how Berbera's competitive position has expanded geographically since the investment. See Annex IV: Mapping the cost-competitiveness of Berbera Port and possible hinterland expansion and Annex V: Regional container demand for a more detailed statement of the analysis performed, including a summary of each category of cost analysis used.

Evidence collected through interviews with port users and other key stakeholders provides more detailed insight into the benefits for importers and exporters located in Berbera Port's expanded competitive hinterland. Several respondents noted, for example, that Ethiopian businesses – particularly in the Somali region closer to Somaliland, which shares cultural and economic ties with Somaliland – have begun to use Berbera Port more actively, attracted by shorter transport distances, lower costs and faster turnaround times. For instance, one logistics firm reported that Berbera has become cost-competitive with Djibouti, potentially offering savings of 10%–30%, depending on cargo type and region served. Respondents consistently described a gradual rerouting of trade from Djibouti to Berbera in the years since Berbera Port was expanded. At the same time, respondents identified a number of residual challenges constraining Berbera Port from capturing additional trade to/from Ethiopia, including the absence of a formal transit agreement between Somaliland and Ethiopia and gaps in customs coordination and regulatory clarity.

Transport cost savings in 2024 are estimated at \$8.4 million for importers and exporters.

The development of the new container terminal and improvements in port operations have created two main channels for lowering transport costs for importers and exporters: the ability to accommodate larger vessels and a reduction in vessel turnaround times. As noted in Section 4.2, the average size of container vessels calling at Berbera increased from 1,314 TEU in 2018 to 1,898 TEU in 2024. Over the same period, the average berth time per vessel declined from 64 hours to 25 hours. These changes translate into estimated savings of \$26.80 per TEU³⁹ shipped to

³⁸ A bandwidth of 10–20% is taken into account, because port choice not only depends on measurable logistics costs, but also on non-observed factors such as reliability and schedule frequency.

³⁹ Calculation by Rebel based on its own 'vessel cost database' and length of main shipping routes to and from Berbera.

or from Berbera, because of vessel size-related economies of scale, and \$40,625 per call in time-related savings, because of shorter berth times. In 2024, Berbera was projected to handle around 135,000 TEU across 118 vessel calls.⁴⁰ Based on this volume, the total value of transport savings is estimated at \$8.4 million: \$3.6 million from larger vessel calls (size-related savings) and \$4.8 million from shorter turnaround times (time-related savings). Because Berbera is a gateway port rather than a transshipment hub, these cost savings accrue directly to shippers (and are potentially passed on to importers and exporters depending on competitive dynamics – see below) operating in the Somaliland and Ethiopian hinterland region of the port.

Net transport cost savings in 2024 (when adjusted for the reduced benefits experienced by ‘new’ port users) are estimated at \$6.9 million.

Following standard cost-benefit methods, only a share of the total transport cost savings can be counted towards net economic benefits. Benefits for ‘existing users’ (i.e. traffic that would have used Berbera anyway) are fully counted, while benefits for ‘new users’ (i.e. rerouted traffic attracted due to the expansion of the port) are weighted at 50%.⁴¹ The volume of ‘new’ traffic can be derived from the increase in market share of Berbera Port (as discussed in Section 4.2, this grew from 9% in 2017 to 14.3% in 2024). Of the total 135,000 TEU predicted to be handled by Berbera Port in 2024,⁴² approximately 85,000 TEU is treated as existing traffic and 50,000 TEU as new.⁴³ When applying the ‘rule of half’, the total transport cost savings of the project amount to \$6.9 million in 2024. These cost savings accrue to importers/consumers and exporters in the hinterland of Berbera Port. The difference with the estimate above is that the gains of new users have been corrected for the cost advantages that they enjoyed compared to Berbera before the port upgrade project. These previous cost advantages are subtracted from the cost savings generated by the upgrade project to obtain the net gains.

The extent to which cost savings are passed on to end users remains uncertain.

The available data does not allow for a precise estimate of the extent to which the transportation cost savings modelled through the transportation cost model are being passed on to final users (importers, exporters, and ultimately consumers). It is likely that part of the savings generated is being retained by actors directly related to port operations, including shipping lines and container terminal operators. The degree of pass-through depends on the level of competition within the maritime logistics sector, both between shipping lines and between terminal operators. A degree of rivalry can be inferred in the regional market: the set of shipping lines serving Berbera and Djibouti – the port’s main competitor – is only partially overlapping, and the container terminals in the two ports are managed by different entities with distinct ownership structures (see Annex III: Services calling at Berbera and Djibouti). This suggests that some

⁴⁰ Projection by Rebel based on latest available secondary data and trend analysis.

⁴¹ The use of the ‘rule of half’ is motivated as follows. The cost savings generated by the upgrade project attract new cargo that, before the project, preferred other routes (or no transport movement at all). For cargo units close to the tipping point, a very small cost saving (just above zero) would have been sufficient for shifting the cargo to Berbera Port. However, the actual cost decrease is much larger than zero. So these units achieve (almost) the full cost savings (like existing traffic). Other units, on the other hand, previously had much better alternatives than Berbera. If the cost saving had been a little bit smaller, they would not have shifted. Hence, for these units the net gains from shifting to Berbera (after subtracting the cost advantages of the previous route) are just above zero. The other units of new cargo are assumed to be distributed evenly between these two extreme points. The net cost savings achieved by all units of new cargo are therefore equal to, on average, one-half of the unit cost decrease generated by the project.

⁴² Calculation by Rebel.

⁴³ Calculations by Rebel. When calculating the market share, only gateway volumes (i.e. import/export cargo) are considered. The Berbera container terminal presently handles no transshipment cargo. The benefits analysed here only apply to import/export cargo.

competitive pressure is present, which would support partial pass-through of cost reductions to other stakeholders in the logistics chain.

As noted in Section 4.3, several port users interviewed for this study noted that Berbera Port has become more price-competitive with Djibouti Port. This provides some supporting evidence that cost savings are being passed on down the logistics chain. In the absence of firm-level data on pricing or margins, however, it is not possible to quantify the magnitude of pass-through cost savings to final users and consumers. One may expect that the competition between the ports will further intensify when a trade and transit agreement between Somaliland and Ethiopia is in place and Berbera Port can compete for mainstream trade to/from Ethiopia.

4.4. Economic and environmental benefits (direct and indirect)

This section investigates emerging evidence that the benefits of the expanded port are being translated into direct and indirect economic impacts for Somaliland. These speak mainly to BII's overarching objective to improve economic opportunities (see sector impact framework in Section 2). Direct economic impacts covered by this report include direct job creation in the port and value addition (resulting from wages paid by DP World Berbera) captured by the Somaliland economy. Indirect economic impacts include job creation and value addition in supplying sectors as a result of local sourcing by DP World Berbera and an estimate of the contribution of the BEZ to local job creation and value addition. Calculations are based on industry-standard benchmarks, drawing on data provided by DP World Berbera and information sourced from the public domain.⁴⁴

Given the data available, the report is not able to provide results which are relevant to BII's objective to improve quality of life through increased access and affordability of goods. Observations linked to broader economic impacts (such as increased competitiveness of export firms, firms using imported inputs, and improved location factors for the establishment of new firms) are also limited, given the paucity of economic data in Somaliland. They are presented in a qualitative manner where feasible.

4.4.1. Direct employment and value addition

The expansion of the port has generated significant direct employment.

Based on payroll tax data provided by DP World Berbera, the total number of workers employed by DP World Berbera in 2023–24 is estimated at 1,315.⁴⁵ Not all of these jobs can be considered additional. Data to estimate employment before the port was expanded was not available, however. An estimate of additional job creation is made in Section 4.4.4.

Total direct value added from port employment is estimated at around \$31 million.

This estimate is derived by first inferring the overall wage bill for port employees using standard relationships between employment, typical payroll tax rates in Somaliland⁴⁶ and sector-specific earnings structures, with base values for employment provided by DP World Berbera. The wage bill is then converted into total value added by applying a benchmark ratio (70%) that reflects the

⁴⁴ The new Berbera container terminal was opened in the third quarter of 2021. However, the upgrading of container operations started in 2017, when DP World took over the management of the port. Therefore, the impact analysis is based on the comparison of the situation in 2017 and 2024 (although data from other years is used when 2017 or 2024 data is not available).

⁴⁵ Payroll tax data provided by DP World; further calculations by Rebel. Number of employed persons valid at the end of 2023, which is believed not to have changed in 2024.

⁴⁶ Taken from Ministry of Finance and Economic Development, Somaliland (2024) 'Tax types'. <https://slmof.org/tax-types/PT>

share of labour costs in overall value creation for port operations.⁴⁷ Based on these industry-standard parameters, the analysis indicates that port operations generated approximately \$31 million in direct value added to the Somaliland economy. This represents the direct GDP contribution of the container terminal.

DP World Berbera has focused on localising jobs at Berbera and has adopted a number of initiatives to increase female employment.

To ensure the jobs created by the expansion of the port benefit the local workforce, DP World Berbera has made a number of investments in training and in local workforce development in Berbera since 2017. Key among these initiatives has been technical training in RTG and STS crane operations, enabling all terminal cranes to be operated by Somalilanders by 2023. In addition, through DP World's global GROW programme, which aims to develop early-career local talent, 52 local graduates have been recruited and trained since 2020, further supporting the company's long-term workforce localisation goals.⁴⁸ The significance of these workforce localisation initiatives was recognised by several interview respondents, who noted that they have opened up well-paying and secure jobs in the formal sector for local Somalilanders (including a number of international opportunities). This is having a notable knock-on impact in terms of increased financial inclusion, with port employees being able to access mortgages and build houses.

Women face structural disadvantages in the labour market in Somaliland, and the infrastructure sector is male-dominated globally. With this in mind, DP World has introduced several targeted initiatives to promote female participation and leadership. The SheLeadsAfrica programme aims to upskill and empower regional female talent through leadership training, peer learning and mentoring, with one Berbera staff member participating in the 2023 cohort. This is complemented by broader development schemes in DP World, such as GROW, MentorHer and Technology 4 Women, which are designed to establish pathways for female career advancement. As of 2024, women made up 10% of the Berbera management team, with a target of 20% by 2030.⁴⁹ In 2024, DP World Berbera was recertified to the Gender Equality European & International Standard (GEEIS).

These workforce and gender inclusion initiatives have largely been driven by DP World itself, rather than being materially supported by BII. However, DP World Berbera notes that its objectives in this area closely align with those of BII, and that BII's partnership has helped lend additional legitimacy to its efforts.

4.4.2. Direct environmental benefits

The deployment of larger vessels, a more efficient port and the rerouting of cargo to Berbera have resulted in CO₂ savings.

With the development of the new terminal, larger and more fuel-efficient vessels are now calling at Berbera Port. This shift contributes to lower CO₂ emissions per transported TEU, because of improved vessel economies of scale. Additionally, the terminal's enhanced operational efficiency has led to a reduction in berth times, thereby decreasing the duration that vessels remain in

⁴⁷ Calculations by Rebel; parameter derived from business cases of container terminals analysed by Rebel in other assignments.

⁴⁸ DP World (2024) *Sustainable Development Impact Disclosure (SDID) Report*.

⁴⁹ DP World (2024) *Sustainable Development Impact Disclosure (SDID) Report*.

port. This translates to lower fuel consumption during port stays, and consequently to reduced emissions. Moreover, a share of container volumes previously routed through Djibouti has been redirected to Berbera, driven primarily by logistical cost advantages. In regions where Berbera offers a shorter overland distance compared to Djibouti, this rerouting yields further CO₂ reductions, because of lower trucking distances.⁵⁰

In quantitative terms, this means that the deployment of larger vessels has resulted in an average 15% reduction in fuel consumption per TEU, leading to an estimated 139 tonnes of CO₂ savings.⁵¹ The decrease in vessel berth time – on average by 39 hours per call – has a more significant impact, saving over 500 tonnes of fuel and corresponding to approximately 1,600 tonnes of CO₂ emissions avoided. Finally, the rerouted containers have led to a reduction of approximately 5.9 million truck-kilometres, which translates into an estimated 5,910 tonnes of CO₂ savings from overland transport.

Table 3. CO₂ reduction

Item	CO ₂ reduction (tonnes)
Larger vessels	139
Decrease in berth time	1,602
Rerouted container volumes	5,910
Total CO₂ reduction	7,651

Source: Rebel analysis

4.4.3. Indirect value addition and employment

Local sourcing by DP World Berbera is estimated to generate \$2.1 million in local value addition and create 175 jobs.

Local sourcing by DP World Berbera generates income and employment across Somaliland's supply chain. DP World Berbera sourced approximately \$4.2 million of goods and services from domestic suppliers in 2023.⁵² If 50% of local procurement is retained as local value added,⁵³ this translates to a \$2.1 million contribution to the local economy in 2023.

Payroll in the supply chain is estimated to be \$1.05 million (50% of value added).⁵⁴ The average salary in the formal sector in Somalia and Ethiopia is estimated at \$100–\$500 per month,⁵⁵ with the same salary level assumed to apply in Somaliland. Taking the upper end of the range (\$500 per month, or \$6,000 per year, to account for higher salaries in economic centres like Berbera), this translates as an estimate of indirect employment in local supplying firms of 175 people.⁵⁶

Respondents interviewed for this study consistently highlighted the wider economic benefits emerging in Berbera and its surroundings as a result of the expanded port. For example, a

⁵⁰ This analysis does not take into account increased emissions due to additional trade volumes. The reason for this is that this impact is small at present and no data is available on points of destination and origin of trade flows. In calculating environmental benefits, the analysis assumes no change of transport mode, i.e. containers transported by rail to Djibouti Port are not being rerouted by truck to Berbera Port given the cost advantages of rail transport.

⁵¹ These figures are based on calculations by Rebel based on industry-accepted benchmarks and previous work.

⁵² Information obtained from DP World.

⁵³ There is no data on the sector structure of the economy of Somaliland. As a result, approximative parameters were based on other economic impact studies carried out by Rebel to make this calculation.

⁵⁴ Calculation by Rebel based on previous assignments.

⁵⁵ <https://statistics.timecamp.com/average-salary/somalia/>

⁵⁶ Calculation by Rebel.

former senior government official described the port expansion as a 'game-changer' for the city, observing that Berbera had become 'one of the fastest-growing cities in Somaliland', with visible increases in hotel construction, business activity, and employment in supporting services such as transport and retail. Two port users reported rapid growth in their business activities, which they attributed directly to the expanded port and economic zone: a freight forwarder operating at the port reported that their business activity had grown by approximately 70% since the port was expanded, and an importer noted that their company now had 12 warehouses in operation (up from two) in the same time frame.

The BEZ is estimated to be contributing \$12 million in value addition and 1,000 jobs.

In addition to upstream indirect economic impacts in supplying firms, the container terminal generates downstream or forward economic impacts in logistics and industrial activities which are directly dependent on the port. Many import containers are processed in the vicinity of the port before the goods are distributed to end users (for example stripping of containers, sorting, repackaging and order picking). These container-linked activities are being established in the BEZ, of which approximately 20 hectares of the site is occupied.⁵⁷ The availability of maritime transport links is also expected to create opportunities for light manufacturing and export industries (for example, processing of locally sourced inputs or contract manufacturing), although the region in Berbera Port's competitive hinterland in Somaliland and eastern Ethiopia currently has a limited productive base.

Logistics and light manufacturing activities typically generate about 50 jobs per hectare.⁵⁸ The employment of the presently occupied area of the BEZ is therefore estimated at 1,000 persons. Using the salary estimate presented above, the total payroll can be estimated at \$6 million per year. This corresponds to value added of \$12 million.⁵⁹

The important contributory role played by the BEZ is highlighted by several port users interviewed for the study. For instance, a logistics firm and an agent for a shipping line identified a notable clustering of freight forwarding, customs clearance and warehousing services in and around the BEZ (a significant change for Somaliland), and increasing demand for these services. A number of international companies are now using Berbera as a logistics base as a result of the co-location of the BEZ around the expanded port.

Some early evidence suggests that exporters based in Somaliland are becoming more competitive.

Access to a well-performing and better-connected port is expected to generate broader economic impacts that go beyond the value added linked to container handling and logistics activities described above. It was not possible to estimate impacts in this area, as a result of a lack of data on the structure of the economy of Somaliland. An approximate figure can be obtained from the evolution of non-livestock exports. Since 2017, non-livestock exports have expanded by 2.2% of GDP (representing a GDP value of \$90 million in 2023).⁶⁰ This increase of exports cannot be fully attributed to the expanded container terminal. However, this figure presents a rough estimate of the potential impact of the expansion and upgrading of the port on the broader economy. In the future, the port may serve as an export platform for new

⁵⁷ Google Earth.

⁵⁸ Parameter based on other economic impact studies carried out by Rebel.

⁵⁹ Calculation by Rebel. This assumes that payroll represents 50% of value added, which is based on other economic impact studies carried out by Rebel.

⁶⁰ Calculation by Rebel based on available secondary data.

manufacturing activities. The most likely sectors are the processing of local products (for instance processing of meat, leather and minerals) and contract manufacturing for foreign markets (such as textiles and apparel and pharmaceuticals). The development of such activities must, however, be regarded as uncertain (at least in the short term) given the absence of any significant manufacturing companies and jobs in Somaliland that can serve as a base.

4.4.4. Assessment of additional economic benefit

The additional contribution of the port expansion to GDP amounts to \$16.7 million or 0.4% of GDP. Additional job creation is estimated at 921 jobs.

The estimates of economic benefit presented above describe the total number of jobs and value addition in the Somaliland economy supported by the expanded port in 2024. Not all of this can be considered 'additional', however; some of these jobs, and some of the contribution to GDP, would have existed if the port had remained at its previous size and had not been expanded. Calculating the additional impact of the expanded port is challenging (for example, baseline figures for jobs are not available), but it can be estimated by pro-rating these figures by the proportion of container volume which is considered additional (i.e. the proportion that would not have happened without the expansion).

The estimate of the total/gross economic impact (direct and indirect) of the expanded port described in Sections 4.4.1 and 4.4.3 amounts to a total of \$45.1 million of value added and approximately 2,490 jobs. This corresponds to value addition of approximately 1.1% of the 2023 value of the GDP of Somaliland (which was almost \$4 billion).⁶¹

The additional container volume attributed to the expansion of the port and productivity improvements in the terminal since 2017 is estimated at 37% (50,000 TEU out of 135,000 TEU, as explained in Section 4.2). Considering the economic impact of only this additional container volume since 2017, the net contribution to GDP amounts to \$16.7 million, or 0.4% of GDP in 2024. Net job creation amounts to 921 jobs.

When interpreting contribution to GDP, it should be highlighted that this analysis focuses specifically on impacts linked to enhanced container traffic, as defined in the scope of the study, and does not include effects related to general cargo operations. In addition, as set out in Section 3.4, the study faced significant data gaps in relation to Somaliland's labour market and economic structure and as such the true contribution to GDP is likely to be higher than reflected in the values reported here.

Table 4 Summary of value addition and jobs created by impact channel, 2024

Impact channel	Result	Calculation	Assumptions
<i>Direct economic impact</i>			
Direct employment by DP World Berbera	1,315	Based on payroll tax data provided by DP World Berbera.	
Direct value addition	\$31 million	(Payroll tax / Payroll tax rate) / Labour percentage of value added	Assumes 6% payroll tax rate and labour accounting for 70% of total value added

⁶¹ Figure obtained from Central Statistics Department, Somaliland.

Impact channel	Result	Calculation	Assumptions
<i>Indirect economic impact – supplying sectors</i>			
Indirect value added (local sourcing by DP World Berbera)	\$2.1 million	Local procurement * % retained as local value added	Data on local procurement provided by DP World Berbera. Assumes local procurement retained as local value added 50%
Indirect employment	175	(Indirect value added * Payroll as % of value added) / Average annual salary	Assumes payroll as % of value added: 50%. Average annual salary in supplying sectors: \$6,000
<i>Indirect economic impact – Berbera Economic Zone</i>			
Employment	1,000	Occupied hectares * Jobs per hectare	Assumes occupied area of BEZ: 20 hectares; Jobs per hectare: 50
Value added	\$12 million	(Occupied hectares * Jobs per hectare) * Average annual salary / Payroll as % of value added	Assumes average annual salary: \$6,000; Payroll as % of value added: 50%
<i>Total economic impact (direct and indirect)</i>			
Total (gross) value added	\$45.1 million	Direct value added + Indirect value added + BEZ value added	
Total (gross) jobs	2,490	Direct employment + Indirect employment + BEZ employment	
<i>Total additional economic impact (adjusted for proportion of container traffic attributable to expansion)</i>			
Total additional value added	\$16.7 million	Total (gross) value added * Proportion of additional container volume	Assumes additional container volume attributed to expansion: 37%
Total additional value added	921	Total (gross) jobs * Proportion of additional container volume	

5. Conclusions and recommendations

In this section, key conclusions are structured around the three main levels in the ToC presented in Section 2 covering changes in port capacity and role, outcomes for port users, and direct and indirect economic impacts. Key recommendations are made, which speak to BII's investment strategy and approach to monitoring and evaluating early signs of impact in similar investments.

5.1. Changes to port operations and role

The expansion of Berbera Port has markedly improved its capacity and efficiency.

Operational performance has strengthened, with BMPH rising sharply – for example from 8 BMPH before the expansion to 50–75 BMPH by 2024 and average vessel turnaround times decreasing from 64 hours in 2018 to 25 hours in 2024. These efficiency gains have supported a substantial increase in throughput, with container volumes growing by approximately 44% between 2016 and 2019. The port is now routinely handling larger vessels – average ship size increased from 1,314 TEU in 2018 to 1,898 TEU in 2024 – and its regional market share of container gateway volumes has risen from around 9% in 2017 to over 14% in 2024.

These capacity upgrades and improved performance position Berbera Port as a credible regional alternative to Djibouti Port.

Beyond efficiency gains, the expansion also enhances the resilience and diversification of regional trade by providing Ethiopia, in particular, with an additional maritime access route and reducing its dependence on a single corridor through Djibouti. This strategic benefit is expected to strengthen further as progress is made towards a formal transit and trade agreement between Ethiopia and Somaliland, which would enable Berbera to realise its full potential as a complementary gateway for the Horn of Africa.

5.2. Outcomes for port users

The port's expansion is delivering cost savings and emissions reductions across Somaliland and eastern Ethiopia, improving market access and sustainability for historically underserved regions.

With Berbera Port's increased capacity and efficiency, its competitive hinterland now extends deeper into eastern Ethiopia and Somaliland, creating shorter and more cost-effective routes for trade. Modelling suggests that these efficiencies translate into approximately \$8.4 million in annual transport cost savings for port users (some of which will be passed on to importers and exporters across the region), or additional/net annual savings of \$6.9 million once adjusted, using standard cost-benefit methods, to reflect that some of the benefits for new users (e.g. cargo diverted from Djibouti) would have been partly realised on alternative routes. Although it is not possible to fully quantify how much of these savings are passed on to end users, they support better market access in an area with historically poor transport infrastructure. In addition, Berbera's modernisation and the deployment of larger, more fuel-efficient vessels reduce greenhouse gas emissions by an estimated 7,651 tonnes of CO₂ annually – achieved through improved vessel utilisation, shorter port stays, and fewer overland trucking miles. Cost savings and emissions reductions are expected to increase further if a formal transit agreement is reached between Ethiopia and Somaliland.

5.3. Direct and indirect economic impacts

The port's expansion is driving inclusive economic growth – creating local jobs, value and skills in a region long marked by high youth unemployment and low female workforce participation.

Since its upgrade, Berbera Port and its surrounding ecosystem, including the BEZ and local supply chains, have generated approximately 2,490 direct and indirect jobs and an estimated \$45.1 million in value added to Somaliland's economy, of which \$16.7 million is net value attributable to the expansion. DP World Berbera is investing in upskilling Somalilanders through training for crane operators and other technical roles and placing a strong emphasis on local recruitment. Targeted initiatives to support women's career advancement, including mentoring and leadership programmes, are also diversifying the workforce in a context of historically low female participation and high youth unemployment.

5.4. Recommendations

1. Prioritise catalytic investments in underserved frontier markets

The expansion of Berbera Port illustrates that carefully targeted infrastructure investments in fragile or low-income contexts can unlock substantial economic and trade benefits. BII can deepen its focus on projects that improve regional connectivity and reduce logistics costs in historically underserved geographies.

2. Leverage partnerships with experienced global operators

Experience across Africa's ports sector suggests that financial investors tend to achieve greater success when partnering with experienced global operators. Such partnerships can help manage commercial and operational risks in frontier markets while enabling the transfer of technical and management expertise. BII's co-investments with DP World Berbera in Berbera Port and Banana Port (in the Democratic Republic of the Congo (DRC)) illustrate how this platform approach can support the delivery of complex infrastructure projects in underserved contexts. In the case of Berbera, collaboration with an established operator has contributed to operational improvements and the development of linked logistics and warehousing activities, strengthening integration across the wider transport value chain.

3. Integrate complementary ecosystem investments

Economic impacts accruing to the expansion of Berbera Port are magnified and reinforced by parallel investments such as the BEZ and road upgrades. BII can identify opportunities to invest in these 'linked ecosystems' to catalyse greater job creation, industrial clustering and local value addition.

4. Embed inclusive and sustainable practices

The economic impacts being delivered by the expansion of Berbera Port are being deepened within Somaliland by targeted initiatives for workforce inclusion and skills development by DP World Berbera. These initiatives are highly significant in an area of high unemployment and limited human capital. BII can encourage investees to establish gender and youth-focused initiatives to maximise social returns.

5. Use early-stage measurement and modelling techniques to track impact

Impacts from large-scale transport infrastructure projects can take years to fully materialise and are often costly to evaluate in detail. This study has demonstrated a practical, low-cost

approach that enables early estimation of emerging impacts using a combination of time-series analysis and logistics cost modelling. BII can apply similar modelling-based techniques in future assessments to generate credible, timely insights into the economic and connectivity effects of its port investments.

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Annex I: Trading balance and commodity composition profiles for Ethiopia, Somalia and Djibouti, focusing on containerisable goods

This annex provides contextual analysis of regional trade patterns to help interpret the findings presented in the main report. It examines the scale and direction of containerised trade for Ethiopia, Djibouti and Somalia (including Somaliland, where data allow), and the composition of traded goods that move through these ports. This context supports the main analysis by showing the degree of import dependence, the structure of demand that underpins port activity, and the potential channels through which logistics cost savings might affect consumers and producers. Data are drawn primarily from UN Comtrade; separate statistics for Somaliland are not available, as these are reported under Somalia.

Trade intensity and trade balance

This subsection compares containerised imports and exports across Ethiopia, Djibouti and Somalia, highlighting the region's strong import orientation. Imports outweigh exports by a wide margin (typically representing over 90% of containerised trade), reflecting limited industrial output and the dominance of consumption-driven imports. For the main analysis, this imbalance explains why import cost reductions (through shorter transit times or more efficient port operations at Berbera) are a key channel of impact. The findings underscore that Berbera's growth potential lies largely in capturing import flows currently routed through Djibouti.

Key commodities imported to Somalia are food products, animals and their products, and textiles, and this underlines the key importance of Berbera Port for the population in the region. The commodities shown in the overviews below are all shipped in and hence underline the importance of good port access for keeping the economy running. The trade to/from Djibouti and Ethiopia includes a larger share of industrial goods, metals and chemicals than to Somalia. The commodity profiles of each country are varied but remained relatively stable, indicating the stable demand across sectors in the economy.

The economy of Somaliland has a high trade intensity. Exports and imports account for more than 50% of GDP. In 2024, the value of imports was twice as high as exports and the imbalance has been even higher in preceding years. The trade deficit is funded by remittances and foreign aid. This section covers some trade statistics for the broader economy, also including non-containerisable trades. This is drawn from Comtrade data (for Somalia) and from Somaliland Government departments where available. Note that because Somaliland is not officially recognised, the international organisations (UN, World Bank, IMF) do not publish data for Somaliland.

Table 5 Trade intensity of Somaliland

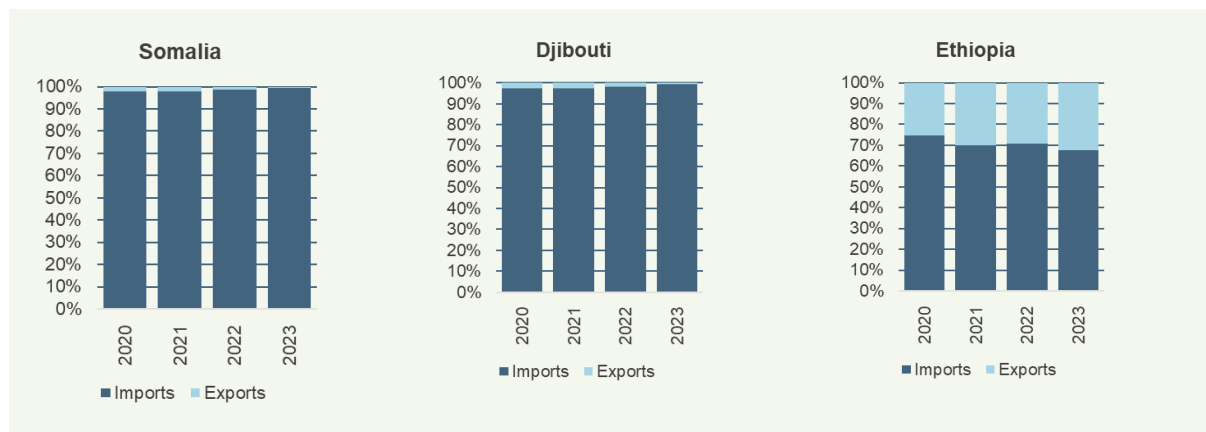
	2020	2021	2022	2023	2024
Million US\$					
GDP at purchasers' prices	2,926	3,297	3,571	3,977	4,280
Exports of goods and services	229	292	387	586	686
of which: livestock	171	183	246	392	515
other exports	58	109	141	194	171
Imports of goods and services	1,337	1,433	1,475	1,480	1,452
% of GDP					
Exports of goods and services	8%	9%	11%	15%	16
of which: livestock	6%	6%	7%	10%	12

other exports	2%	3%	4%	5%	4
Imports of goods and services	46%	43%	41%	37%	34

Source: Ministry of Planning and National Development, Central Statistics Department, GDP Report 2023

Of the three neighbouring countries, only Ethiopia has sizeable containerisable export volumes. Figure 10 below shows the share of containerisable import and export trade for Somalia, Djibouti and Ethiopia.

Figure 10. Share of containerisable commodities imports and exports of Somalia, Djibouti and Ethiopia (million tonnes)

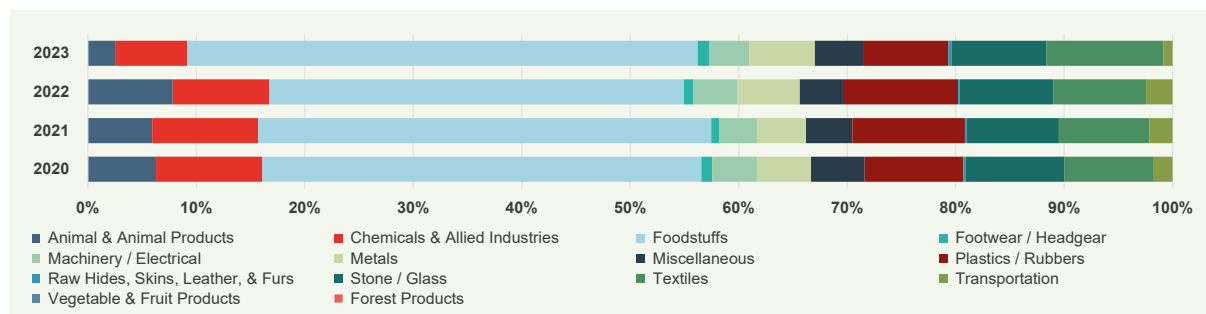


Commodity composition profiles by country

This subsection summarises the types of goods traded through the region’s ports. Imports are dominated by basic foodstuffs, manufactured consumer goods, machinery and construction materials, while exports consist mainly of primary and agricultural commodities. These patterns have remained relatively stable over time, pointing to limited diversification of the regional economy and (in the case of Somaliland in particular) the relatively small manufacturing sector. Although no data is available to determine how much of any logistics cost saving calculated through this study is being passed through to end-consumers, wider evidence suggests that for essential goods such as foodstuffs, competitive markets tend to transmit at least part of those savings to consumers, improving affordability and access. This provides useful context for interpreting the potential welfare implications of Berbera’s improved efficiency.

For Somalia between 2020 and 2023, foodstuffs were the main containerised commodity traded, and this remained stable during this period. This shows the stable demand structure across sectors in the hinterland. After food products, key commodities include animals and animal products, and textiles. Other commodities’ proportions have changed minimally, with no visible changes in animals, animal products, and transport equipment. Most imports into Somaliland (2/3) consist of necessities: food, fuel and building materials. They are mostly sourced from the wider region: Gulf countries, Turkey and neighbouring countries. Consumer articles and electronics make up about a quarter of imports. They are likely to arrive as containerised cargo. The category of oleaginous products includes khat, which is imported from Ethiopia. The trade in khat is subject to high taxes, both in Ethiopia and Somaliland (about 30% import duties). As a result, import statistics, based on customs data, are likely to understate actual trade.

Figure 11. Commodities imported – total (% of total net weight) – Somalia



Source: United Nations Comtrade database (UN Comtrade), Rebel analysis

Some information is available from the Government of Somaliland which supports this general picture, as illustrated in the table below.

Table 6 Composition of imported goods of Somaliland (2022)

Item	Value (US\$)	%
Food	554,980,455	39%
Oleaginous products*	144,268,110	10%
Fuel & transportation	145,921,111	10%
Consumer articles	117,972,774	8%
Building material	205,785,271	15%
Electronics	213,470,593	15%
Other	26,369,307	2%
Total	1,408,767,622°	100%

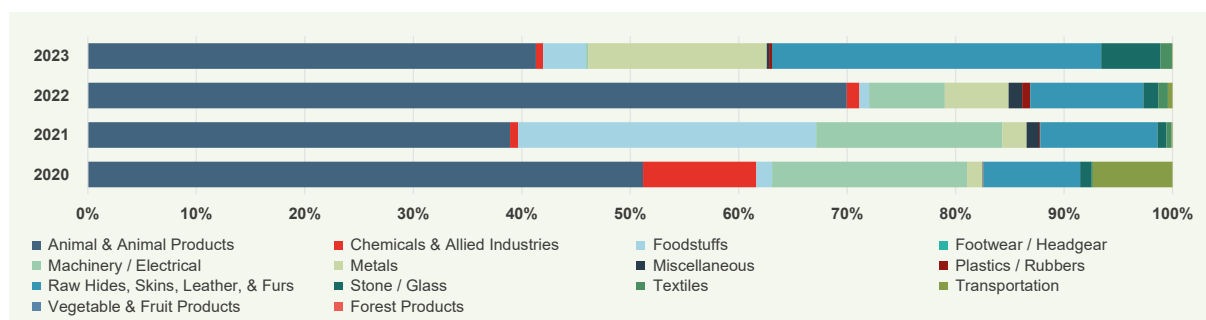
* Includes khat, tobacco, cigarettes and medicines

° The value slightly differs from that shown in the table above. The source of both values is different, and probably the sources used different data collection and estimation methods.

Source: Trade Statistical Bulletin 2022 (Ministry of Finance, Macroeconomics & Statistics Department)

Given the very low export volume, not much importance can be given to the commodity composition of exports, which can easily fluctuate over time. Somalian exports are dominated by animal products (including hides). These commodity flows are complementary to the much larger, non-containerisable exports of live animals (not shown here).

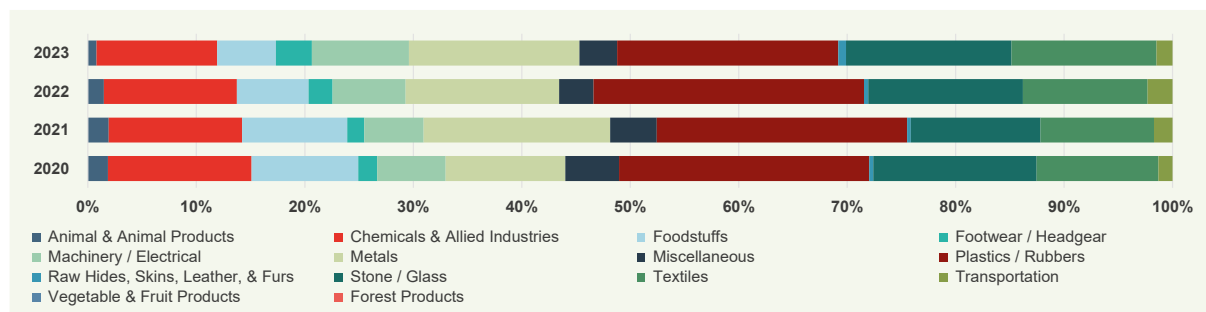
Figure 12. Commodities exported by container (% of total net weight) – Somalia



Source: United Nations Comtrade database (UN Comtrade), Rebel analysis

The import commodity distributions of Djibouti and Ethiopia are very similar. That is logical given the role of Djibouti as the main port of import for landlocked Ethiopia.

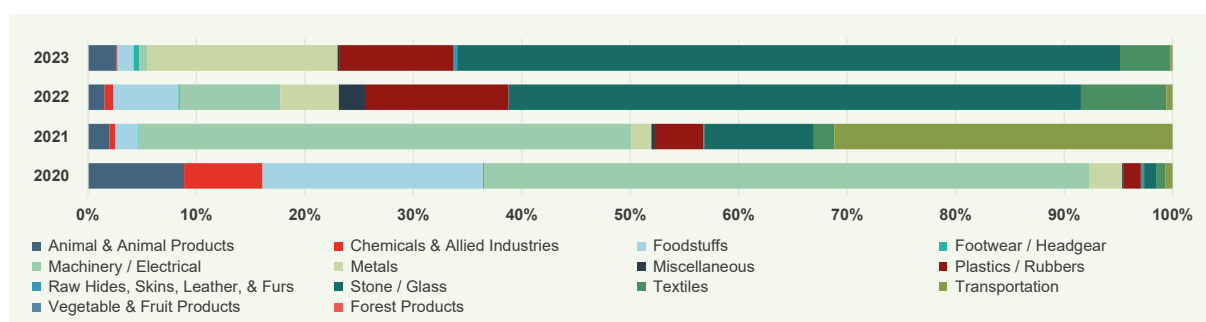
Figure 13. Commodities imported by container (% of total net weight) – Djibouti



Source: United Nations Comtrade database (UN Comtrade), Rebel analysis

As in the case of Somalia, not much importance can be attributed to the commodity composition of Djibouti exports due to their very low volume. The low volume also explains the large variability of the commodity composition over time. While Djibouti serves as one of the main import gateways for the Ethiopian economy, it has no such role for exports.

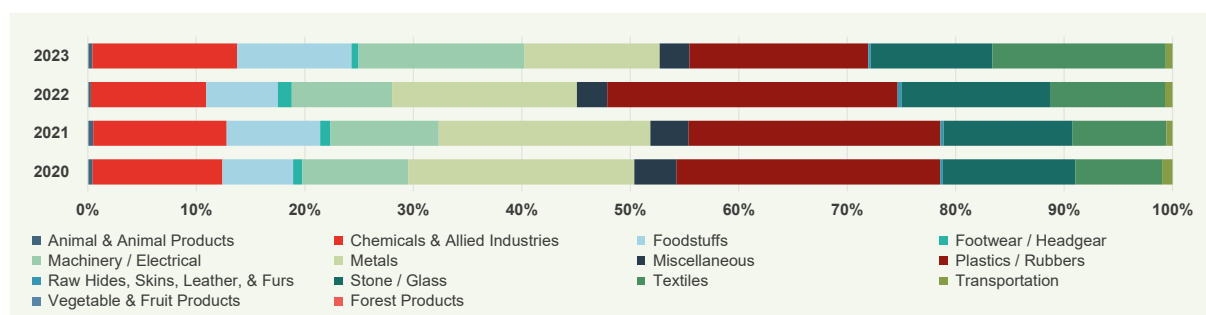
Figure 14. Commodities exported by container (% of total net weight) – Djibouti



Source: United Nations Comtrade database (UN Comtrade), Rebel analysis

Ethiopian imports are very diverse. They span a wide range of commodities, as seen in Figure 15 below and generally well reflect the broad consumption profile of the larger Ethiopian economy.

Figure 15. Commodities imported by container (% of total net weight) – Ethiopia



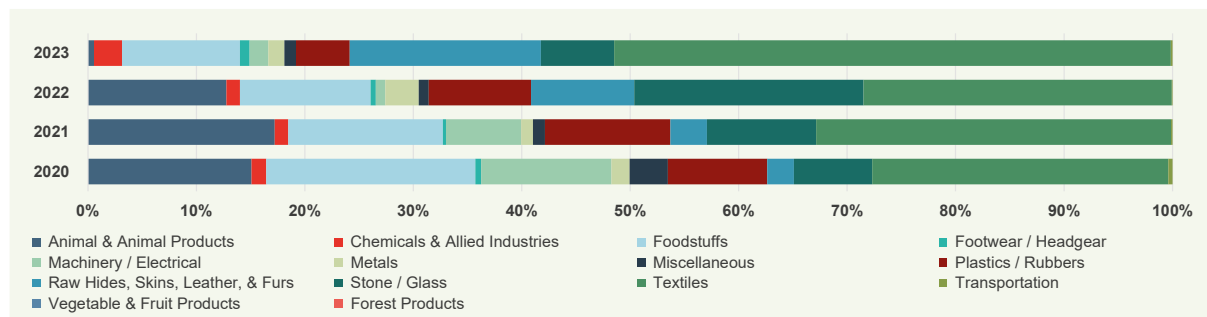
Source: United Nations Comtrade database (UN Comtrade), Rebel analysis

The most important Ethiopian export segment (in terms of weight) is textiles. The share of textiles has strongly increased in recent years. In 2023 the share further increased; however, this was not the result of an absolute volume growth of textile exports, but was rather caused by a decrease in other export goods. This seems to be caused by some incomplete data reported for 2023. It is expected that 2023 has a similar profile as previous years.

The port of Djibouti has no significant role in the shipping of Ethiopian exports. Exports of food products are mainly intended for neighbouring countries and travel over land. The airport of

Addis Ababa serves as an export gateway for high-value and time-sensitive goods (flowers, fresh vegetables, fashion).

Figure 16. Commodities exported by container (% of total net weight) – Ethiopia



Source: UN Comtrade, Rebel analysis

Volume of containerised imports and exports by country, including analysis of principal trading partners

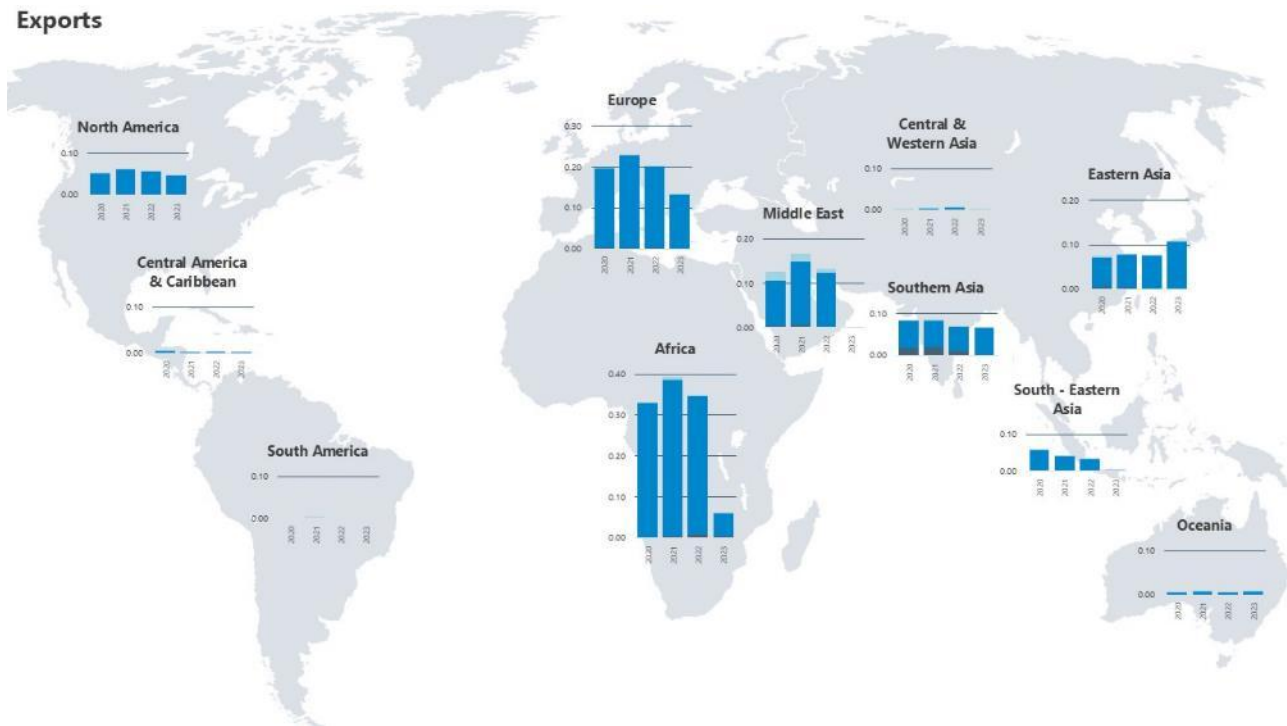
Taking a broader view, this section summarises volumes of containerised cargo flows of Ethiopia, Djibouti and Somalia to/from other parts of the world. The analysis primarily draws on customs data; since the customs data of East African countries is sometimes incomplete, customs records of the trading partners to East Africa are used as a supplementary source.

The data presented in this section further illustrates the strong trade imbalance in the region, with containerised exports accounting for less than 10% of the region's total containerised trade. Because containerised imports far exceed exports, large numbers of empty containers must be repositioned, raising hinterland transport costs. This situation is reflected in the logistics cost modelling presented in this report.

Containerised exports

Containerised exports account for less than 10% of the region's total containerised trade, as estimated using customs records provided by UN Comtrade. Containerised exports from Somalia, Ethiopia and Djibouti are low compared to imports. Most of the exports are to the African continent itself, the Middle East and Europe. Ethiopia is the largest exporter of the three countries and is almost solely responsible for trade with western countries. Somalia has some trade with the Middle East, and Djibouti exports to southern Asian countries on a smaller scale.

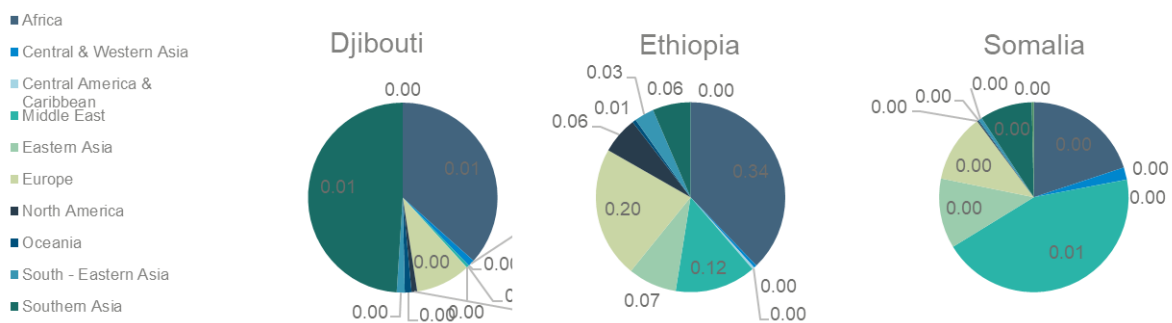
Figure 17. Containerisable exports from Ethiopia, Djibouti and Somalia



Source: UN Comtrade, Rebel analysis

Trading partners vary largely by country. Djibouti exports the most containers to southern Asian countries and Africa, Ethiopia mostly to Africa, Europe and the Middle East, and Somalia to the Middle East and Africa. However, because the containerised exports are small in general, these numbers do not tell us much. This trade imbalance results in significant repositioning of empty containers and also results in relatively high hinterlands transportation costs, because the repositioning of empties is borne by the import of full containers.

Figure 18. Trade partners by country for containerisable exports

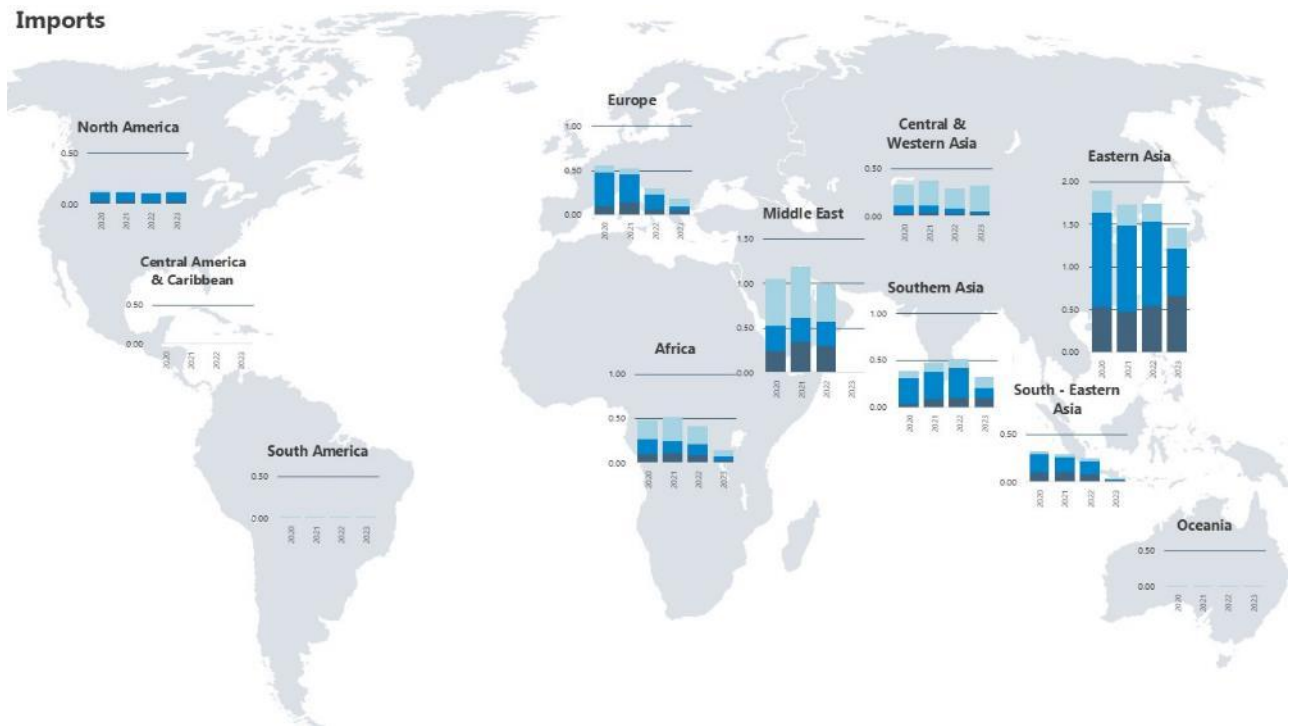


Source: UN Comtrade, Rebel analysis

Containerised imports

Containerised imports are significantly greater than exports and make up the dominant category for most of the containerised trade for Somalia, Ethiopia and Djibouti. Here, most containers are imported from eastern Asia, followed by the Middle East. In this sector, trade is more evenly distributed between the three countries, but Ethiopia still accounts for most of the imports.

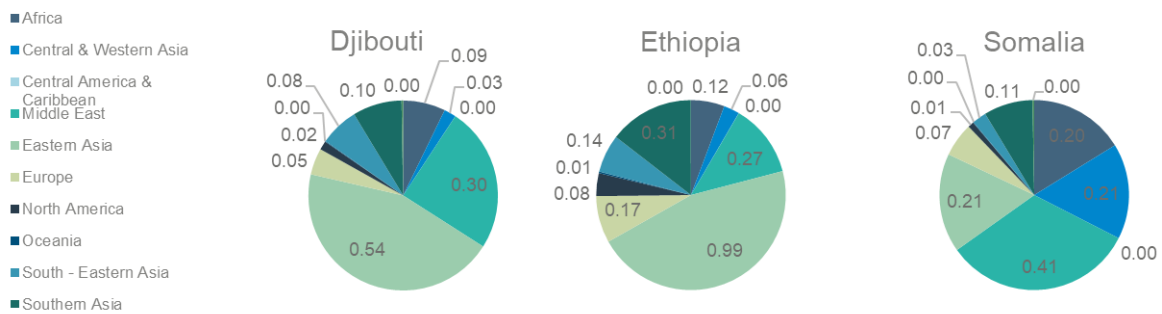
Figure 19. Containerisable imports from Ethiopia, Djibouti and Somalia



Source: UN Comtrade, Rebel analysis

Containerised imports are the main drivers of container handling in the ports and countries of interest. Djibouti and Ethiopia have a rather similar trade profile. Most container imports into both countries are coming from eastern Asia and the Middle East. For both, southern Asia is the third-largest import region. For Somalia, imports are mainly from the Middle East, with imports from Africa and central, western and eastern Asia being of a similar magnitude.

Figure 20. Trade partners by country for containerisable imports

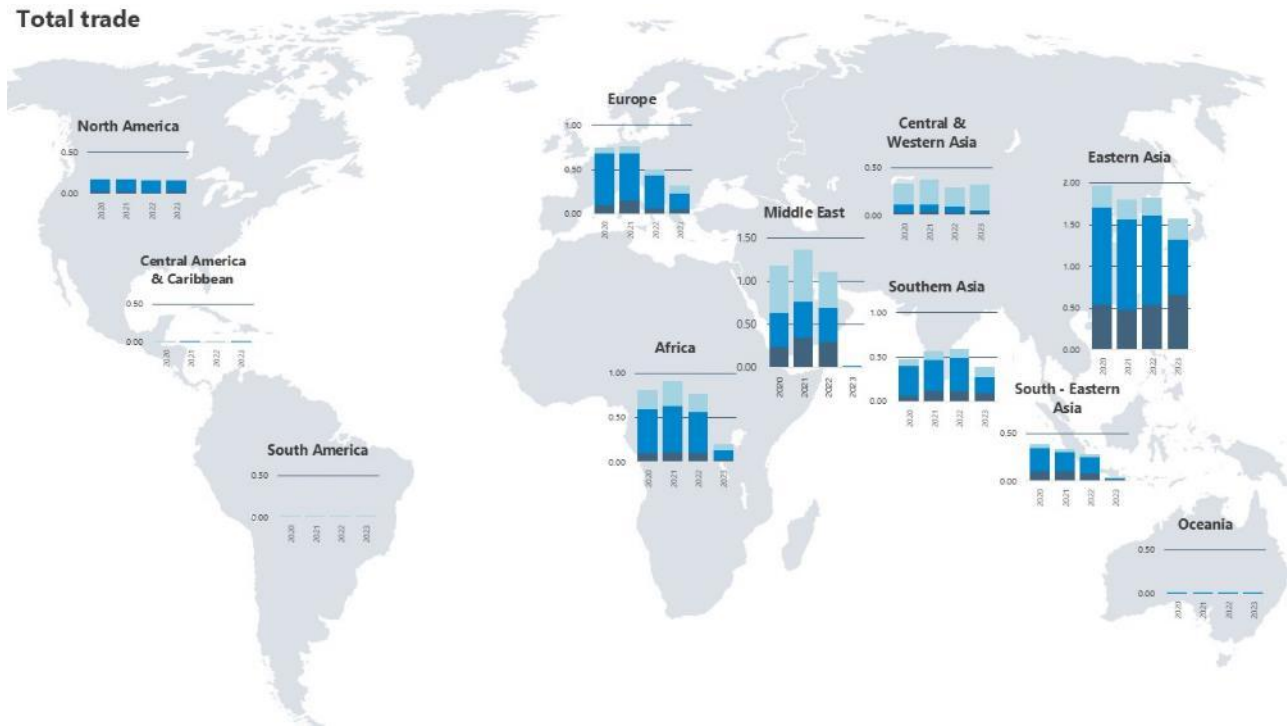


Source: UN Comtrade, Rebel analysis

Total containerised trade

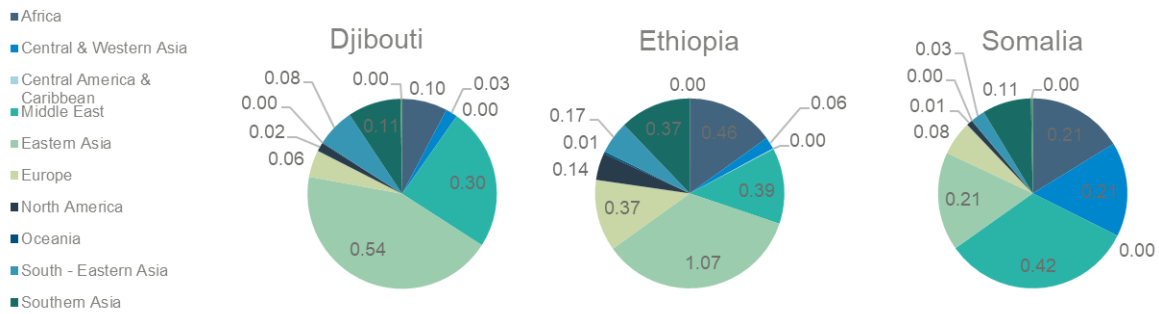
Figure 21 and Figure 22 summarise the overall development of the combined import and export markets. Given the dominance of imports into the region over exports, the charts are very similar to the charts for the import profile.

Figure 21. Containerisable trade from Ethiopia, Djibouti and Somalia



Source: UN Comtrade, Rebel analysis

Figure 22. Trade partners by country for total containerisable trade



Source: UN Comtrade, Rebel analysis

Annex II: Details of Berbera Port competitors

Djibouti investments

China has become an important trading and military partner for Djibouti. The Chinese completed a high-capacity standard-gauge railway in 2016. The Addis Ababa–Djibouti Railway terminates at the nearby Doraleh Port and restores Ethiopia’s railway access to the sea.

In September 2013 construction began on the Damerjog port, financed by China Merchants Group and the Government of Djibouti and constructed by the China Civil Engineering Construction Corporation (CCECC). The terminal is now used for livestock and as a repair yard for vessels and a liquid bulk port.

Also in 2013, work on the Doraleh multipurpose port was initiated. Doraleh Port now relieves congestion at the original Djibouti Port, which had narrow terminals and old infrastructure. The new project added around 29 million tonnes of annual capacity.

Mogadishu

Mogadishu Port is in Mogadishu, the capital of Somalia. In contrast to the Djibouti Port, Mogadishu Port is used mainly for Somali trade and not for container transits to neighbouring countries such as Kenya and Ethiopia. It is not as well connected to Ethiopia as Djibouti. Kenya has its own port, with the Mombasa Port and Lamu Port. Mogadishu Port has a lower TEU capacity than that of Berbera Port, and the 2023 volumes of around 96,000 TEU confirm that the container terminal is underutilised.

Lamu

Lamu Port was recently developed and designed as a transport corridor and transshipment hub. However, since its completion it has not yet received any regular calls from container vessels, and thus significant container volumes have not yet been recorded. With its container capacity of 1.2 million TEU, it has a very large capacity in comparison to other container ports in the region. When in business, Lamu Port might offer limited competition at the margin to the Somali and Djibouti ports. The main market for containers will be Kenya, South Sudan and parts of Southern Ethiopia (this area of Ethiopia may overlap to some extent with the hinterland of Berbera Port). However, plans for the rail corridor incorporate a railway line from Lamu to Addis Ababa. The Kenyan Port Authority will be seeking a private partner to develop and operate the port in the future. The table below outlines the current comparative capacity of each port.

Table 7. Competitive port descriptions

Port	Capacity (TEU)	Capacity utilisation 2023	Depth at quay (m)	No. berths	Cranes	Intermodal connections
Berbera	500,000	29%	17	1	3× super post Panamax STS	-
Djibouti	1,250,000	71%	18	2	8× super post Panamax STS	Rail to Addis Ababa
Mogadishu	200,000	~48%	14	2	~7× MHC	-
Lamu	1,200,000	0%	17.5	3	~5× MHC and 3× STS	-

Source: Rebel, Google Earth

Annex III: Services calling at Berbera and Djibouti

Table 8. Berbera vessel calls

Shipping line/service	Port rotation
CMA CGM	
CMA CGM – Middle East–Somalia–Mozambique service (Noura Express)	Jebel Ali (Dubai), Mogadishu, Mombasa, Beira, Nacala, Port Victoria, Jebel Ali (Dubai)
CMA CGM – Red Sea feeder service (East Africa side) (Mona Express)	Jeddah, Massawa, Berbera, Hodeidah, Djibouti, Jeddah
CMA CGM – Red Sea–Kenya–Comoros service (Jeddah Express – JEDDEX)	Le Havre, Fos, Mersin, Jeddah, Genoa, Barcelona, Antwerp, Rotterdam, Norfolk, Jeddah, Le Havre, Fos, Mersin
Ethiopian Shg Line	
Ethiopian Shg Line – Asia–Red Sea service	Yokohama (Honmoku), Kobe, Singapore, Djibouti, Aden
Ethiopian Shg Line – Djibouti–Arabia–India service	Nhava Sheva, Mundra, Jebel Ali (Dubai), Djibouti, Sharjah, Dammam
MSC	
MSC – Colombo–Salalah–Djibouti service (Yemen Express 1)	N/A
MSC – Djibouti feeder service (Djibouti Express)	N/A
MSC – Lower Red Sea feeder services (KA–Yemen & Somali) (Yemen Express 2)	N/A
MSC – Red Sea feeder service – Port Sudan	N/A
MSC – Red Sea Feeder Service 3	King Abdullah City, Dhuba, Sokhna, King Abdullah City
Others	
Extra sailers (Middle East & ISC-related services)	-
Global Feeder Shg – Jebel Ali–Yemen shuttle (JYS)	Jebel Ali (Dubai), Salalah, Berbera, Aden, Djibouti, Aden, Jebel Ali (Dubai)
PIL/UniFeeder – Red Sea/ME Gulf/Pakistan/India service (RGS)	Mundra, Jebel Ali (Dubai), Djibouti, Jeddah, Berbera, Mundra
X-Press Feeders – Jebel Ali–Red Sea service (JRX)	Jebel Ali (Dubai), Sokhna, Aqaba, Jebel Ali (Dubai)

Source: Ais data and Alphaliner

Table 9. Djibouti vessel calls

Shipping line/service
CMA CGM
CMA CGM – Red Sea feeder service (East Africa side) (Mona Express)
Ethiopian Shg Line
Ethiopian Shg Line – Asia–Red Sea service
Ethiopian Shg Line – Djibouti–Arabia–India service
Maersk
Maersk – Blue Nile Express (BNX)
Maersk – India–ME–US service – MECL / UMX (US flag service)
MSC
MSC – Djibouti feeder service (Djibouti Express)
MSC – Red Sea feeder service – Port Sudan
PIL
PIL – Far East–Red Sea Express service 2 (RS2)
PIL – Intra Red Sea feeder service (IR2)
PIL/UniFeeder – Red Sea/ME Gulf/Pakistan/India service (RGS)
Others
Extra sailers (Middle East & ISC-related services)
Global Feeder Shg – Jebel Ali–Jeddah–Sokhna service (JJS)
Global Feeder Shg – Jebel Ali–Yemen shuttle (JYS)
Horizon Shipping Co – Yemen–UAE–India service
Maersk – Blue Nile Express (BNX)
Maersk – India–ME–US service – MECL / UMX (US flag service)

Source: Ais data and Alphaliner

Annex IV: Mapping the cost-competitiveness of Berbera Port and possible hinterland expansion

This section provides the detailed preliminary analysis and methodology used to identify how the competitive hinterland of Berbera Port has changed since the port development. Previous analysis tells us that when a port is roughly over 10% more expensive over the total logistics costs (hinterland distribution costs at both ends, port handling and shipping costs) than its closest competitor, it will only be able to attract a small share of potential cargoes. When ports are equally expensive on a total logistics cost basis, they will split the market share (assuming equal service levels). The hinterland costs are a very important component in this comparison, because the differences in shipping costs between ports are typically relatively small. In this section we analyse these aspects by breaking down demand by region and determine the cost-competitive position of Berbera Port vis-à-vis its regional competitors.

Regional container demand

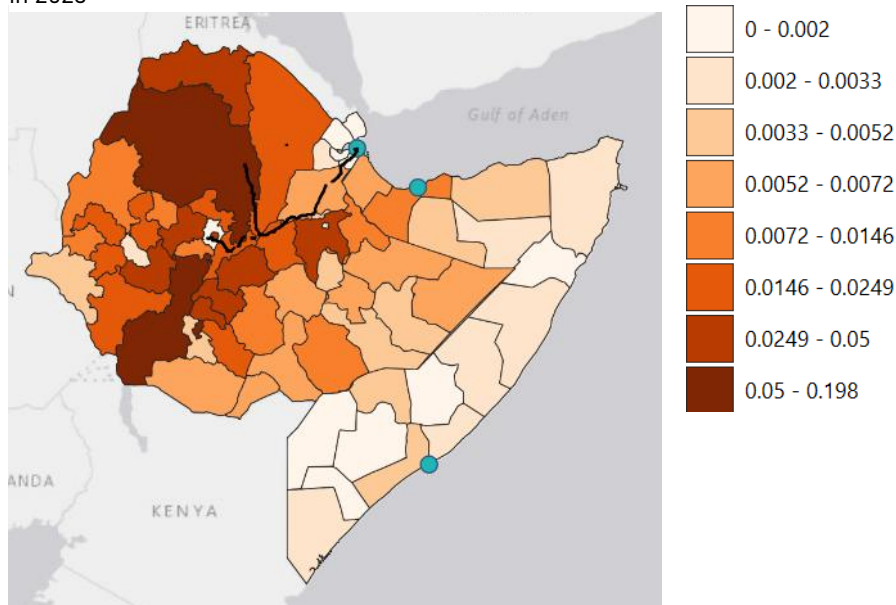
Looking at the geographical container demand in East Africa, demand is clustered in the capitals, Somaliland, western Ethiopia and along the rail corridor. The eastern part of Ethiopia has relatively low container demand relative to the size of the area, owing to low population density.

The 2023 container throughput in the East African region can be allocated to the hinterland region based on the regional GDP distribution and container demand per port, complemented with data and market intelligence on transit volumes and intermodal volumes (i.e. anecdotal information and statistics of how many containers cross the borders). This figure confirms that most container traffic goes to Ethiopia, and more specifically to western Ethiopian regions. In addition, capital cities of the three countries have large quantities of containers allocated to these region as well as the regions surrounding the three ports of interest, i.e. their immediate hinterlands.

Geographical distribution of the container demand in the region closely follows GDP distribution typically; therefore the maps below provide insight into container distribution in the hinterland.

When analysing regional GDP in the three countries, it is observed that a significant share of the region's GDP lies in the west of Ethiopia, including Addis Ababa.

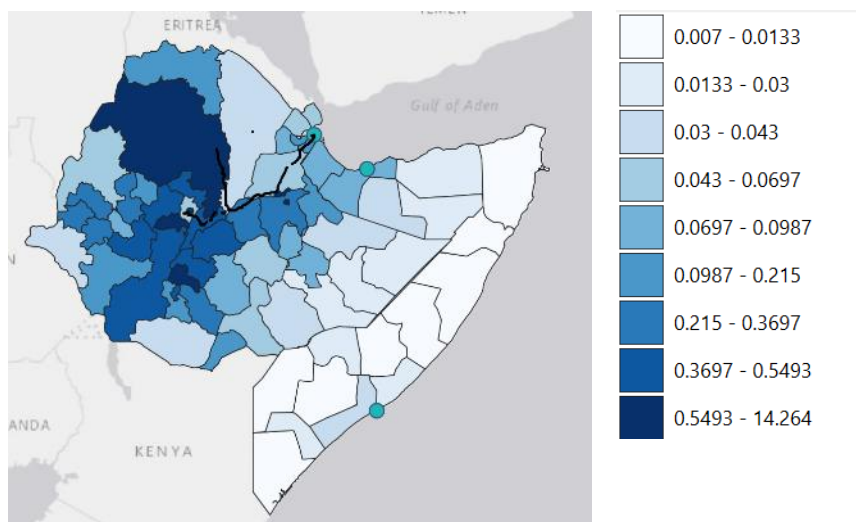
Figure 23. GDP as share of total East African countries' GDP in 2023



Source: National statistics offices, Rebel analysis

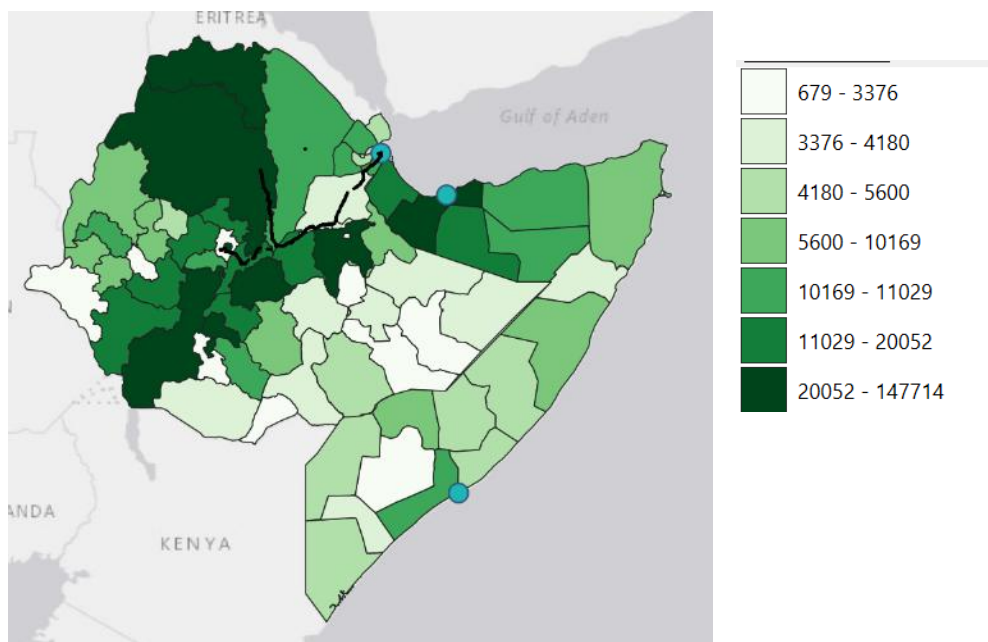
GDP per square kilometre (km²) tells us more about the density of economic activity. Here, it can be observed that the regions around the capitals of the three countries have the highest GDP per km² in their countries. After these regions, the western Ethiopian regions detailed in the previous graph also have a significant GDP per km².

Figure 24. GDP per square kilometre in 2023



Source: National statistics offices, Rebel analysis

Figure 25. Estimated TEU allocation per region in the hinterland (2023 TEU)



Source: Rebel analysis

Logistics costs

Logistics costs are a key decision criterion in the routing of containers and, as such, the major driver to analyse the trade flows and the impact of the development of Berbera Port. The inputs are based on Rebel’s experience in the region, our in-house developed logistics cost model, and information from the ports. The logistics costs include all costs from its origin–destination in the East African hinterland to the overseas port. These include hinterland trucking, intermodal yard and transport costs if applicable, port handling costs, port dues, border crossing costs/admin and deep sea shipping costs.

Port handling costs

The terminal handling charges in Berbera are almost identical to those in Ethiopia in terms of both the level of tariffs and the structure of the tariff book. Total port handling charges are on the high side in comparison to global standards and leave space for reduction or undercutting Djibouti to compensate for the additional logistics costs to key markets; however, DP World Berbera may wish to recoup their investment in Berbera Port by applying higher tariffs.

Table 10, Table 11 and Table 12 summarise the headline container handling tariffs charged at both container ports. Port charges consist of a range of charges, but the ones summarised in these tables are typically the most important elements. These rates have been obtained from the official tariff books. In reality, discounts will be agreed with key shipping lines bringing in important services or large volumes. These are commercially sensitive and typically are kept confidential.

1. Berbera Port tariffs for import/export containers are almost identical to those at Djibouti Port. Both the structure and tariff levels are close to each other, and it can be concluded that the tariff strategy is to match each other’s tariffs. This holds for the charges both to the shipping lines and to the cargo owners. The difference in import delivery charges is offset

again by the wharfage in Djibouti. Berbera is marginally cheaper on the rates for 20ft containers, but more expensive for full 40ft gateway containers.

2. For storage charges, Berbera Port seems slightly cheaper than Djibouti.
3. Transshipment rates in Berbera are in line with Djibouti for full containers but higher for empty containers. Overall, the rates in both ports are somewhat higher than at the large liner dedicated terminals in Oman and Saudi Arabia. However, it is noted that discounts to the official tariffs will apply for CMA CGM and Cosco.
4. When combining overall tariffs, the charges to both cargo owners and shipping lines are relatively high. This leaves space for further decreasing if needed, although in the case of Berbera the investments in a greenfield development need to be recouped.

Comparison of headline tariff

Table 10. Comparison of headline container handling tariffs (USD) for both ports to shipping lines (according to tariff books)

Gateway	Discharging/loading full		Discharging/loading empty	
	Up to 20ft	>20ft	Up to 20ft	>20ft
Berbera	130	195	80	120
Djibouti	133	166	94	121

Transshipment	Full		Empty	
	Up to 20ft	>20ft	Up to 20ft	>20ft
Berbera	141	175	124	159
Djibouti	141	201	112	137

Table 11. Comparison of headline container handling tariffs (USD) for both ports to cargo owners (according to tariff books)

Import delivery (transit)	Full		Empty	
	Up to 20ft	>20ft	Up to 20ft	>20ft
Berbera	320	635	-	-
Djibouti	272	544	50	75

Export reception	Full		Empty	
	Up to 20ft	>20ft	Up to 20ft	>20ft
Berbera	156	287	60	115
Djibouti	116	232	17	34

Wharfage – full container	Import		Export	
	20ft	40ft	20ft	40ft
Berbera	N/A	N/A	N/A	N/A
Djibouti	49.80	99.60	24.65	49.30

Table 12: Comparison of storage rates (USD) for both ports (according to tariff books)

Storage fees – full	Free days	Details of fees
Berbera	8 days	\$2/day/TEU (day 9-14) \$5/day/TEU (day 15-21)
Djibouti	3 days local, 8 days transit and TS	\$5.65/day/TEU (day 9-14) \$7.05/day/TEU (day 15-21)
Storage fees – empty		
Berbera		\$1.5/day/TEU from day 1 onwards
Djibouti		Same as for full

Sources for above tables: *Tariff books of Port of Berbera and Port of Djibouti*

Logistics cost comparisons

For each region in the hinterland, the total logistics costs can be calculated for routing containers over the different ports.

The tables in this annex present logistics cost estimates for routing containerised cargo to and from Addis Ababa, using Djibouti Port and Berbera Port as alternative gateways. Owing to the standard-gauge rail connection between Addis Ababa and Djibouti, the Djibouti corridor currently maintains a clear cost advantage for central Ethiopian markets.

Tables 13, 14 and 15 summarise the estimated logistics cost structure along an east–west axis from Berbera, illustrating how relative competitiveness changes with distance. Kebri Dehar, located in Ethiopia’s Somali Region, lies closest to Berbera Port; analysis indicates that for this area, Berbera provides the lowest-cost access compared with Djibouti. Further west, around Robe, overland trucking costs are broadly similar for the two corridors, but Djibouti gains a marginal advantage through its intermodal (rail-plus-road) connectivity. For Addis Ababa, which sits still farther west, both the rail connection and shorter total distance make Djibouti the more cost-efficient route, whether using rail or all-road transport options.

1. The shipping costs in these comparisons are set as equal. These will depend on the exact overseas port and deployed vessels. Although Berbera has deepwater draught, at the moment Djibouti receives, on average, larger vessels. As a consequence, Djibouti Port will enjoy a slight shipping cost advantage of around \$30–\$70/forty-foot equivalent unit (FEU) to most locations. The shipping cost advantage of Berbera and Djibouti is significantly larger. For the comparison below, we have assumed an overseas port to which Berbera can match the shipping costs over Djibouti.
2. For simplicity we have set the border crossing costs between Ethiopia and Djibouti as equal to those of the crossing to Somalia. In practice these costs would be expected to be marginally lower for the crossing to Djibouti.

From these results, the cost advantage realised by the rail connection between Addis Ababa and Djibouti can be clearly seen. It is, however, noted that the rail line has capacity constraints, partly because of the availability of rolling stock. As such, the trucking option is still adopted from many regions, despite rail perhaps being cheaper.

Table 13. Logistics cost comparison (in \$/FEU) port routings for Addis Ababa

Origin	Destination	Mode of transport	Distance	Hinterland trucking	Intermodal costs*	Border crossing /admin costs	Port costs**	Shipping costs	Total
Addis Ababa	Djibouti	Trucking	894	1,799	n/a	200	556	1,000	3,555
Addis Ababa	Djibouti	Intermodal	752	n/a	706	200	556	1,000	2,462
Addis Ababa	Berbera	Trucking	951	1,997	n/a	200	563	1,000	3,760
Addis Ababa	Mogadishu	Trucking	1,647	3,541	n/a	200	621	1,000	5,362

Table 14. Logistics cost comparison (in \$/FEU) port routings for Robe in Oromia region (Ethiopia)

Origin	Destination	Mode of transport	Distance	Hinterland trucking	Intermodal costs*	Border crossing /admin costs	Port costs	Shipping costs	Total
Robe (Oromia)	Djibouti	Trucking	1,078	2,149	n/a	200	556	1,000	3,905
Robe (Oromia)	Djibouti	Intermodal	825	n/a	1244	200	556	1,000	3,000
Robe (Oromia)	Berbera	Trucking	1,038	2,172	n/a	200	563	1,000	3,935
Robe (Oromia)	Mogadishu	Trucking	1,260	2,734	n/a	200	621	1,000	4,555

Table 15. Logistics cost comparison (in \$/FEU) port routings for Kebri Dehar in Somali region (Ethiopia)

Origin	Destination	Mode of transport	Distance	Hinterland trucking	Intermodal costs*	Border crossing /admin costs	Port costs	Shipping costs	Total
Kebri Dehar (Somali)	Djibouti	Trucking	500	1,050	n/a	200	556	1,000	2,806
Kebri Dehar (Somali)	Berbera	Trucking	362	822	n/a	200	563	1,000	2,585
Kebri Dehar (Somali)	Mogadishu	Trucking	588	1,329	n/a	200	621	1,000	3,150

* Intermodal costs include intermodal yard handling costs and rail transport costs.

** Stevedoring charges, export receipt, import delivery and wharfage, +10% other charges.

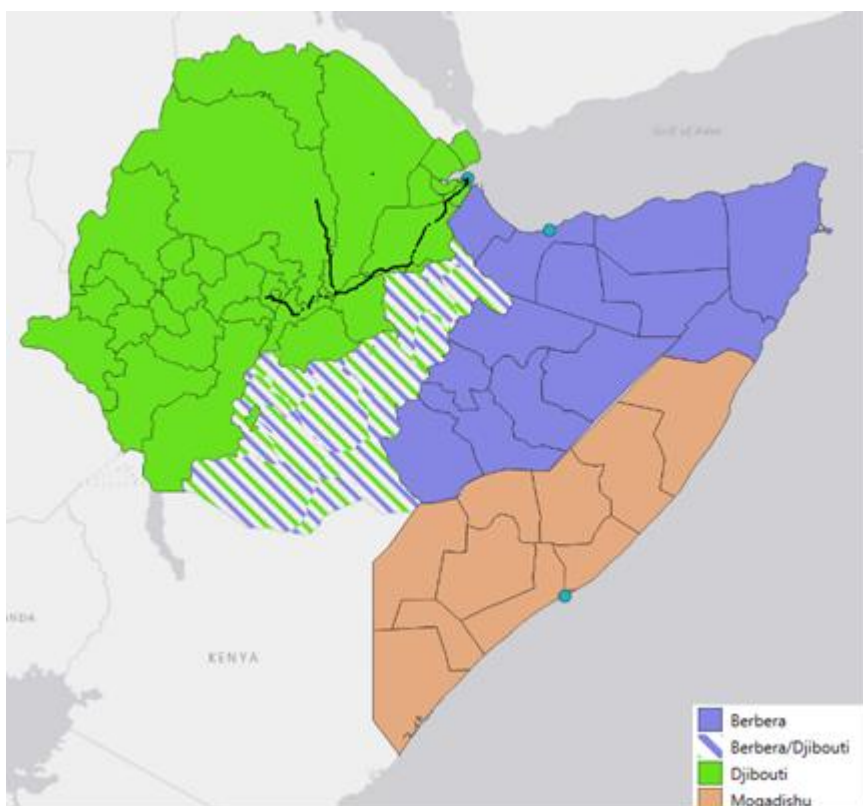
Annex V: Regional container demand

Preferred port per hinterland region

The rail connection to Djibouti makes trucking to Berbera less competitive where both modes compete; as a result, the hinterland of Berbera mainly lies to the east of Addis Ababa. Container demand volumes in these regions are, however, smaller than in the westerly regions with high economic activity. The offering of Berbera Port should strongly focus on qualitative aspects and on locking in volumes from these competitive regions.

Using the logistics cost assessment for each region in Ethiopia, Djibouti and Somalia, a profile can be drawn up for the preferred port over which cargo is routed in each region. This is derived from a combination of overall transport cost structures and other factors influencing port choice. Within a 10% cost difference over the entire logistics cost chain, service levels and other qualitative aspects play a role in the choice of routing.

Figure 26. Overview of the captive hinterland for each port in each region



Source: Rebel analysis

1. The difficult and long border crossing from Mogadishu to southeastern Ethiopia prevents Mogadishu from capturing any significant share of these hinterland regions.
2. The Addis Ababa–Djibouti Railway ensures that most western, southern and northern Ethiopian regions have Djibouti as the preferred port, based on logistics costs. Capacity constraints of the railway play a role. However, in particular from the more westerly regions, Djibouti also enjoys a trucking distance advantage.
3. For Berbera, the captive region is partly southeastern Ethiopia – which is easier to enter from Berbera than Mogadishu – and the northern parts of Somalia.

4. Competition between Djibouti and Berbera is most prominent in the regions from the northeast to the southwest of Ethiopia. These regions have a similar distance to both ports and fall just out of the range of railway from Djibouti. The logistics cost differences of shipping containers over either port fall within the 10% cost difference, and hence aspects such as service levels play a role. This will be the focus of competitive pressures between the two ports and for the containers which have been rerouted to Berbera Port since its expansion.



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mail@itad.com

Itad Ltd

International House
Queens Road
Brighton, BN1 3XE
United Kingdom

Tel: +44 (0)1273 765250

Itad Inc

c/o Open Gov Hub
1100 13th St NW, Suite 800
Washington, DC, 20005
United States