Analyzing Douala-Abéché Humanitarian Corridor Towards Strengthening Resilience

A path towards humanitarian supply chain planning improvement

May 2024
Assessment of the Douala-N’Djamena-Abéché corridor

The Chad-Sudan border area has been facing significant issues such as violence, conflicts, and political instability for several years, which have resulted in a severe humanitarian crisis. The Douala–N’Djamena–Abéché corridor is a critical transportation route that connects the port city of Douala in Cameroon to the capital city of N’Djamena in Chad and further extends to the city of Abéché in eastern Chad. It is the primary route for humanitarian aid and support to the region. However, the corridor has been facing challenges that impact the efficiency and effectiveness of supply chain operations along the corridor and disrupt the smooth functioning of humanitarian supply chains. Understanding the impact of these challenges on the logistics operations in the corridor and suggesting operational and practical recommendations for mitigation is essential to improve the accuracy of supply chain planning in the region.

This operational research originates from continuous conversations and requests from various humanitarian actors responding to the humanitarian situation on the Sudan-Chad border. Seven humanitarian partners (Alima, Danish Refugee Council, International Rescue Committee, ICRC, Save the Children, UNHCR and UNICEF) guided the problem statement of this research. Given the amplitude of the crises and the protacted nature of the response required, the operational research aims to contribute to an improvement of strategic and tactical planning practices by humanitarian actors on the corridor.

This report is primarily intended for humanitarian organizations operating in Chad, specifically targeting their supply chain teams. It offers a comprehensive analysis of the supply chain components along the corridor from Douala to Abéché, presenting the operational, infrastructural and administrative challenges faced along the corridor. In addition, this report provides an estimation of lead times and delays for both transport and customs operations, along with an overview of the seasonal and cyclic fluctuations of the capacity and availability of supply chain assets, thus supporting organizations in enhancing their supply chain planning capabilities. Furthermore, the report offers practical recommendations to alleviate the impact of the numerous challenges on the efficiency of the supply chain operations along the corridor. By doing so, it equips humanitarian organizations with valuable insights to streamline their operations and improve the resilience of their supply chains in the region. Beyond these operational insights, the report includes strategic recommendations for the governments of Chad and Cameroon, as well as international and governmental organizations, donors, and other institutions. These recommendations emphasize priority improvements and opportunities for public-private partnerships with the commercial sector and humanitarian organizations. Implementing these recommendations will not only enhance the efficiency of humanitarian efforts but will also contribute to the overall functioning of the corridor, benefiting all sectors involved.

For this assessment, mixed-method research was used combining both qualitative and quantitative data collection and analysis approaches. An extensive academic desk study based on the available literature and past reports on the corridor was carried out to identify patterns and trends in the historical data and gain insights into the underlying causes of the current challenges in the supply chain along the corridor. This historical analysis was complemented by a contemporary local assessment in which interviews and surveys of various stakeholders along the corridor were used to collect both qualitative and quantitative data. The data collected was subsequently analyzed to obtain a comprehensive visualization of the different supply chain modalities and routings along the corridor and a seasonality matrix, especially for transport and warehousing.

The operational research deliberately does not start from the premise of a dedicated humanitarian supply chain but focuses on existing and proven supply chain setups of commercial traffic on the corridor. The findings and recommendations are thereby often applicable to all humanitarian stakeholders, but also to non-humanitarian actors with an interest on the economic activities on and along the corridor. The main observation from this assessment is the potential for supply chain efficiency improvements by focusing on supply chain planning in conjunction with the existing actors and variables on the corridor. The subsequent sections delineate the conclusions drawn from the assessment findings, accompanied by recommendations aimed at mitigating the identified challenges.

Transport modes, capacity and seasonality

The primary modes of transportation along the Douala – N’Djamena – Abéché (DNA) corridor are road and rail, with road transport accounting for 90% of passenger travel and 60% of freight traffic. There are different road transport routing options to navigate the corridor between Douala (or Kribi) to Abéché. The average road transit time along the Douala – N’Djamena corridor is estimated between 12 and 14 days. An additional 4 to 7 days must be considered for the clearance formalities at the border. Three routes have been identified as being the most frequently used by the truck drivers:

- Douala/Kribi-Yaoundé-Abéché
- Douala/Bertoua-Garoua-Boulai-N’gouandéré-Tchadi-Ivory Coast
- Douala/Tchadi-Ivory Coast

While a longer distance, this road benefits from more recent road infrastructure, and is overall more efficient compared to the rail transport option which is less reliable due to the lack of regular service schedules.
in better condition. It is less exposed to armed robbery and presents less informal stops and payments.

• Douala/Kribi/Yaoundé-Abong Mbang-Bertoua-Garoua Boulaï-Meïanga-Ngounoué-Garoua-Maroua-Kousouni- N’Djamena-Abéché (2,560 km): Historically, this is the most commonly used road, with improved road conditions and offering the possibility to drop off and/or pickup of partial loads along the road. However, the northern portion of the road presents security concerns.

• Douala/Kribi/Yaoundé-Abong Mbang Bertoua-Garoua Boulaï-Ngounoué-Garoua Faguil-Léré- N’Djamena- Abéché (2,771 km)

Flatbed and bulk trucks make up the majority of the fleet available in both countries. However, a significant proportion of the trucks are old and even over 30 years of age, especially the trucks that are in individual ownership. Private sector actors estimate the on-time delivery performance of the transport providers along the corridor at a low 60%, which indicates a moderate level of reliability in the available transport services and highlights the need for advanced planning to ensure the timely delivery of goods.

The rail network from Douala to Ngaoundere carries approximately 39% of the freight traffic in Cameroon and rail transports more than two-thirds of Chad’s imports. Since the privatization of the railway concession to CAMRAIL, the rail infrastructure has been modernized and upgraded. Over the years, CAMRAIL, the Government of Cameroon, and development partners have instigated and implemented various initiatives and projects to improve the quality of rail services and infrastructure along the rail network.

It takes about 22 days for freight transit from Port of Douala to Abéché and transport costs via the rail-road combination along the corridor are estimated to be 40% less expensive than by road. Due to the nature of the roads within the corridor, rail transportation becomes a better option for freight movement starting from the end of October until January, causes higher demand for transportation and an increase in prices.

During the dry season, trade activities tend to thrive along the rail network as porters and traders take advantage of the favorable road conditions, allowing a smoother and swifter transportation of goods between Cameroon and Chad. However, the improved movement of goods during the dry season can lead to truck congestion at border crossings.

The religious celebrations such as Christmas and New Year (in December and January), Easter (in April), Ramadan and Eid (which occurred in April in 2022) also cause disruptions in the availability of transport and the pricing. The seasonal impacts on the price and availability of transport can be summarized in the following table:

Table 1: Seasonal impacts on the price and availability of transport services along the corridor

<table>
<thead>
<tr>
<th>Month</th>
<th>Transport prices</th>
<th>Traffic on the roads and unavailability of transport services</th>
<th>Negative impact of the social and religious events on the timely delivery along the corridor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>Moderate</td>
<td>Low</td>
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<td>Feb</td>
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<td>Mar</td>
<td>Low</td>
<td>Low</td>
<td>Moderate</td>
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<td>Apr</td>
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<td>High</td>
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<tr>
<td>May</td>
<td>Low</td>
<td>Low</td>
<td>Moderate</td>
</tr>
<tr>
<td>Jun</td>
<td>High</td>
<td>High</td>
<td>Moderate</td>
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<tr>
<td>Jul</td>
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<td>High</td>
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<tr>
<td>Aug</td>
<td>High</td>
<td>High</td>
<td>Low</td>
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<tr>
<td>Sep</td>
<td>Moderate</td>
<td>High</td>
<td>Moderate</td>
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<tr>
<td>Oct</td>
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<td>Nov</td>
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<tr>
<td>Dec</td>
<td>High</td>
<td>Moderate</td>
<td>High</td>
</tr>
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</table>

Based on the findings above, the following recommendations can be explored to enhance the efficiency of the transport operations along the corridor:

1. Humanitarian organizations should start considering multimodal transportation (railway + road) along the corridor, following the example of commercial actors. The rail-road combination has proven to be an interesting alternative to the roads, especially during the wet season, while also being more cost effective and environmentally friendly.

2. The information on the seasonality of the transport availability and pricing must be leveraged by the organizations and integrated in their supply chain planning to optimize their shipments when the prices are at their lowest and increase the cost efficiency of their operations.

3. Organizations are also encouraged to optimize their shipments outside of the identified peak periods (rain season, during religious celebrations and during the post-harvest periods). For shipments that cannot be organized outside of those critical periods, the extended transport lead times must be factored into their supply chain planning to anticipate the additional delays and ensure a timely arrival of their goods at the destination point.

4. Collaborative supply chain initiatives, between humanitarian organizations or with non-humanitarian actors can be useful to leverage synergies, reduce redundancies, and ultimately enhance the overall performance of the corridor logistics network.

5. Humanitarian organizations can also advocate for OCHA to negotiate with the transport regulating authorities in Cameroon and Chad (resp. BGFT and BNFT) to prioritize humanitarian cargo in this corridor, considering the humanitarian situation and frequent emergencies in the region.

6. For their shipments to be less exposed to informal stops and informal payments on the corridor, it is recommended for humanitarian organizations to run regular shipping operations. The port of Kribi offers enhanced operational effectiveness, especially in handling containerized goods. Increasingly utilizing the Port of Kribi will help streamline logistics, reduce delays, and also contribute to decongesting the Douala port and improving overall trade and humanitarian operations in the region.

Wearhousing capacity and seasonal availability

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Wearhousing capacity and seasonal availability

The corridor houses various storage facilities of different types and sizes, including public, private, bounded, transit, and consolidation warehouses. The warehousing facilities (along the corridor) in Cameroon predominantly cluster in Douala, Yaoundé, Bafoussam, Bertoua and Ebolowa, with the cities of Yaoundé and Paris emerging as key hubs as well. Manufacturers in Cameroon generally own their warehousing facilities, which

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have a larger capacity than they usually need for their operations. This presents an opportunity for humanitarian partners to collaborate with the private sector by renting their unused storage space. On the other side of the border, the warehouses are located in Ndjamena, Gassi, Fachra, Abéché and Lamadj. The average size of warehousing facilities in Chad is however four times smaller than in Cameroon, especially in Abéché.

Public organizations such as the National Cereals Board and the Cameroon National Shippers’ Council in Cameroon, the National Agency for Rural Development Support, and the National Food Security Office in Chad have substantial warehouse capacity, which is sometimes made available to humanitarian organizations at low or no cost.

Warehouses along the corridor have limited storage capacity, which is insufficient during periods of high demand, particularly for cold storage. In contrast to 40% of the warehouses in Cameroon, just 10% of the warehouses in Chad have cold storage facilities. Added to that, some warehouses lack adequate thermal insulation and face challenges such as an unstable power supply.

Most warehouses lack a stock-monitoring system and automation technologies. This leads to lower operational efficiency due to increased manual labor and challenges to accurately track inventory levels in real-time and make informed decisions about inventory for strategic supply chain planning.

From November to February, which is the agricultural harvest period, the warehousing facilities in both countries are for the majority mobilized for the storage of agricultural products. This spike in storage space demand affects the overall availability of warehousing facilities all along the corridor, especially at the Douala port, the Kribi port and the central market in Douala. The months between December and April have also been flagged as periods of high commercial activity in both countries, which appeals to a higher demand for storage capacity in the main cities. The seasonal spikes in the demand for warehousing space also have an impact on the pricing for warehouse rental, which tends to be higher during periods of high demand. The prices can increase by up to 50% from November to February.

The seasonal impact of agricultural harvests and commercial trends on the availability of warehousing space along the corridor is captured in the following table:

| Table 2: Seasonal impact of agricultural harvests and commercial trends on the availability of warehousing space along the corridor |
|---|---|
| Month | Warehousing availability in Cameroon | Warehousing availability in Chad |
| Jan | Low | Low |
| Feb | Low | Low |
| Mar | Moderate | Low |
| Apr | Low | Low |
| May | High | High |
| Jun | High | High |
| Jul | High | High |
| Aug | High | High |
| Sep | High | High |
| Oct | High | High |
| Nov | Low | Low |
| Dec | Low | Low |

**Source:** Local Assessment (December 2021)

2. Organizations could also explore joint ownership, long-term leasing, or outright purchasing, whether along the corridor or at the last mile, with their counterparts with similar needs to improve efficiency and reduce overhead costs.

3. Establishing partnerships with government agencies, especially in Chad, could help in leveraging their storage capacities effectively. In return, the organizations could support in the adoption of warehouse automation and other essential technologies.

**Customs clearance processes**

Cameroon and Chad are both members of the Economic and Monetary Community of Central Africa (CEMAC). They adhere to the common trade regulations and standards of the CEMAC, which simplify the customs procedures and reduce the trade barriers between the two countries.

However, the complexity of the customs framework varies between the two countries. Cameroon has a digitized customs clearance process. With the implementation of the Cameroon Customs Information System (CAMCIS), a fully automated, paperless system designed for efficiency and speed, Cameroon has significantly reduced face-to-face interactions and manual document handling for the customs-related processing.

Chad follows the CET (Common External Tariff) of the CEMAC closely and appears to have a more structured and predictable duty system.

Chad, on the other hand, has an extensive customs network, with essentially manual procedures. The customs duties in Chad are based on the CEMAC CET, with a number of country-specific measures and exceptions, which suggests a more flexible and perhaps less predictable system.

Humanitarian organizations can receive exemptions from duties and taxes in both countries, but the process is cumbersome and time-consuming, especially in Chad.

The majority of the drivers estimate less than 6 hours the time required to complete their customs clearance process, with the exceptions of the border seemingly having a more rapid process thanks to the improved technology that has been introduced. However, the significant difference between the time required for customs formalities (less than 6 hours for more than 70% of the border crossings in Chad) and the overall time spent at the border points (estimated at 4 to 7 days) indicates high levels of inefficiency in the customs process at the border points. The high volume of shipments and limited resources available for customs processing, combined with still relatively low levels of digitalization in the customs procedures (administrative verifications and compliance checks), cause trucks to wait for a long duration of time in a queue before they can undergo formalities. These slow customs clearance processes account for over 50% of total logistics costs along the corridor.

Many of the challenges pointed out by the humanitarian partners regarding the efficiency of the customs clearance processes between Douala and Abéché are of an administrative nature (delays in obtaining import authorization in Chad, long waiting times for the approval of the documents, lengthy port operations and container release procedures, etc.). The most impacting hurdles that can lead to delays at border crossings are related to the various certificates and compliance requirements (rules of origin, classification codes used, sanitary and phytosanitary requirements, etc.) that are asked for at the border points. It is therefore essential to ensure beforehand that the documentation is complete and structured so that truck drivers do not need to navigate through too much paperwork, which can be overwhelming and delay the verification process.

Custom clearance is a major hurdle for bidders or unoffical payments in exchange for expedited processing or the avoidance of bureaucratic hurdles has also been flagged as one of the main challenges on this corridor. The additional informal payments that the truck drivers usually need to make during their customs clearance process can also increase the overall costs of the truck drivers and transportation companies and increases the cost of transportation on the corridor.

While the majority of the actions to be undertaken in order to reduce the time and costs involved tend to delays, congestion, and corruption require intervention from governmental authorities, there are still a few operational suggestions that can help partners navigate customs more smoothly:

1. Even though customs operations are usually outsourced, organizations should familiarize themselves with the customs procedures, processes, exemptions, waivers, and safeguards of each country they operate in. This knowledge can help them identify any preparatory work or additional documentation needed to assist their provider in navigating the clearing process smoothly.

2. Humanitarian organizations could offer to provide technical assistance and support to Customs and other agencies in Cameroon and in Chad. This support could include capacity building, modern equipment, and improved facilities to boost the efficiency and overall productivity of the customs services in both countries. It’s advisable for organizations to incorporate this support into their initial project proposals, as donor regulations may restrict their ability to do so later if it wasn’t included from the outset.

3. Customs codes in Cameroon and Chad do not provide special treatment for humanitarian goods. However, humanitarian organizations can obtain various exemptions and waivers, although the application process is complex and tedious. It is recommended that humanitarian organizations contact the relevant government entities (as listed in the report) to determine which exemptions they are eligible for, how to apply, and the expected duration of the process.

4. Humanitarian organizations could advocate with the World Customs Organization (WCO) and IMPACT to facilitate the creation of a comprehensive customs clearance guide for the transit and importation of humanitarian relief items from Cameroon to Chad in collaboration with local cross-border agencies. This guide would offer detailed and comprehensive information on customs laws and regulations, along with practical guidance and recommendations for complying with transit and import requirements, obtaining waivers and exemptions and sharing best practices for smoother customs operations along the corridor.

Addressing the many challenges identified in this report, whether infrastructural or administrative, requires a concerted effort from authorities, government agencies, private stakeholders, and international organizations. This process has been underway for a few years and will take many more years to come. In the meantime, the operational insights and the recommendations formulated in this report can be used to support the supply chain planning in the corridor for a more efficient and effective aid delivery in the region.
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Abbreviations

3PL Third-party logistics
AfCTA African Continental Free Trade Area
AFDB African Development Bank
AVI Attestation of Verification to Import
BAD Banque Africaine de Développement (African Development Bank)
BAL Bolloré Africa Logistics
BGFT Bureau de Gestion de Fret Terrestre Camerounais
BNFT Bureau National de Fret Tchadien
CAMCIS Cameroon Customs Information System
CAR Central Africa Republic
CEMAC Communauté Économique et Monétaire de l’Afrique Centrale (Central African Economic and Monetary Community)
CENAME Centrale Nationale d’Approvisionnement en Médicaments et Consommables Médicaux Essentiels
CET Common External Tariff
CFS Container Freight Station
CMA-CGM Compagnie Méridionale d’Affrètement – Compagnie Générale Maritime
CNSC Cameroon National Shippers Council
CONAC Cameroon’s National Anti-Corruption Commission
CRED Centre for Research on the Epidemiology of Disasters
DLCAs Digital Logistics Capability Assessments DLCAs
DNA Douala-N’Djamena-Abéché
ECTN Electronic Cargo Tracking Note
GPAC Groupement Professionnel des Acconiers du Cameroun (Professional Group of Dockers of Cameroon)
GUCE Guichet Unique du Commerce Extérieur
IMPACCT Importation and Customs Clearance Together
IOM International Organisation for Migration
LLDCs Landlocked Developing Nations
LPG Liquefied Petroleum Gas
MINATD Ministère de l’Administration de Territoriale et de la Décentralisation
MINREX Ministère des Relations Extérieures
OCTRAC Central African Transport and Transit Organisation
PAD Port Autonome de Douala (Autonomous Port of Douala)
PAK Port Autonome de Kribi
PCA Pre-shipment Conformity Assessment
RoRo Roll-on Roll-off
RTG Rubber-tired Gantries
STS Ship-to-Shore
TTU Titre de Transit Unique (Unique Transit Title)
WFP World Food Programme
WTO World Trade Organization
Assessment of the Douala-N’Djamena-Abéché corridor

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Introduction

Project background

The Chad-Sudan border region has been marred by longstanding violence and conflicts. Especially recently, Sudan has experienced various armed conflicts and political instability, resulting in a significant humanitarian crisis. The prevalence of violence in Sudan has created a large population displacement. IOM reports that since the start of the violence in April 2023, no less than 6.3 million people have been displaced, with around 1.3 million seeking refuge in Chad.

The Douala – N’Djamena - Abéché corridor serves as a critical gateway for humanitarian assistance and supply chain operations. It connects landlocked Chad with the strategically important but bordered port of Douala.

The port of Douala faces several challenges that can hinder the smooth transit of goods and impact supply chain operations. Some of the main problems with transiting through the Port of Douala include:

- Congestion
- Inadequate Infrastructure
- Customs and Administrative Procedures
- Corruption and Informal Fees
- Security Concerns
- Inefficient Port Services
- Limited Connectivity

Addressing these challenges requires a concerted effort from port authorities, government agencies, private sector stakeholders, and international partners. This process has been underway for years and will take many more years to come. To answer to the current and urgent requirements of the humanitarian crises in Chad, mitigation activities are required. In these, concerted and coordinated approaches between humanitarian stakeholders, NGO and UN, in combination with fact-based planning could mitigate partly the negative impacts of these challenges.

Given the ongoing nature of the crisis and the foreseeable need for humanitarian aid and support in the region, long-term supply chain planning becomes crucial. It is not sufficient to address immediate needs alone by ad hoc solutions such as charterd cargo flights; a comprehensive and sustainable supply chain strategy is required from each humanitarian actor to ensure consistent and efficient delivery of aid over an extended period.

Several non-governmental organizations (NGOs) and United Nations (UN) agencies have approached HELP Logistics to provide assistance in improving supply chain operations on the concerned corridor. The high demand for HELP Logistics’ expertise underscores the urgency and criticality of addressing supply chain challenges in the area.

Project objective

The Douala-N’Djamena-Abéché corridor assessment focuses on conducting an in-depth analysis of the corridor connecting Douala to N’Djamena and Abéché. The primary purpose of this assessment is to gain a detailed understanding of the historical supply chain context and challenges faced along the corridor, and evaluate the current condition and functionality of this specific supply chain corridor, with a particular emphasis on identifying and navigating the challenges, and opportunities of the corridor and improve their overall supply chain planning processes.

The key objectives of the assessment were to:

- Provide a comprehensive overview of the entire supply chain corridor, encompassing physical infrastructure and regulatory aspects and identify areas that require attention to streamline supply chain operations.
- Contribute to supply chain planning for various humanitarian agencies operating in Chad by providing a detailed matrix with delay estimates per modality and routing. This will equip agencies with critical data to optimize their supply chain planning and empower them to make informed decisions and strategize their operations effectively.
- Identify the strengths and weaknesses of the different corridor options, modalities and routings, recognizing their positive aspects as well as potential bottlenecks and challenges. Included in this are both road and railway options.
- Assess Customs and Administrative Regulations in Cameroon and Chad that impact the flow of goods along the corridor and identify potential delays and hurdles in the customs clearance process, which can significantly influence the efficiency of humanitarian supply chains.
- Contribute to the development of a corridor-specific supply chain planning strategy, including a detailed matrix with delay estimates per modality and routing, to support humanitarian operations in the border region of Chad and Sudan. By providing operational guidelines and essential information on the supply chain dynamics of the Douala corridor, the assessment aims to help humanitarian stakeholders navigate the challenges and opportunities of the corridor and improve their overall supply chain planning processes.

Project approach

The assessment was performed using two parallel approaches:

- An extensive academic desk study based on the available literature and past reports on the corridor. The objective of the academic desk study was to understand the historical challenges related to transportation, handling, warehousing, and customs clearance activities along the corridor. A qualitative research method was employed. The information obtained through a comprehensive literature review was analyzed to identify patterns and trends in the historical data and gain insights into the underlying causes of the current challenges. The literature review included identifying and mapping past reports and archives that provided historical data on the corridor, as well as recent satellite observation data on the corridor.
- Another approach was to interview key stakeholders, including governmental agencies, NGOs, and other relevant parties operating in the corridor and provide operational guidelines and essential information on the supply chain dynamics of the Douala corridor. The assessment more specifically addressed the following key supply chain activities along the corridor:
  - Transport: Analyzing the transportation methods and modes utilized for the movement of goods and humanitarian aid along the corridor. This includes assessing the efficiency, reliability, and capacity of transportation options.
  - Handling: Evaluating the availability of handling providers at various points within the corridor.
  - Warehousing: Assessing the availability, capacity, and suitability of warehouse facilities along the corridor.
  - Clearance: Evaluating the customs clearance procedures at different border points and checkpoints within the corridor. This involves understanding the regulatory requirements and potential delays in the clearance process.

Presentation of the corridor

Corridors can be viewed from an economic and social development perspective as efficient transport systems that facilitate trade and economic activities, also attracting investment opportunities along a specific territory (Baranzelli et al., 2022). From the humanitarian logistics viewpoint, corridor performance can be a factor in the success or failure of any humanitarian endeavor; it is no surprise that the several aspects of logistical operations in disaster relief are broad, making logistics (or supply chain) the most important part of disaster relief operations (Ndabakabwa & Farahani, 2011; Logistics Cluster, 2019a, 2019c). Stumpf et al. (2023) found that managing humanitarian supply chain operations account for approximately 75% of the overall cost in the emergency phase of humanitarian operations, making it a crucial factor for success.

The Douala-N’Djamena-Abéché Corridor (DNA) is a strategic transportation route that links the Chadian cities of N’Djamena and Abéché to the city of Cameroon, facilitating trade between several countries. The Corridor is the main economic trade route linking landlocked Chad and Cameroon, providing sea access to the former. Chad relies on Cameroon for 80% of its imports, while Cameroon sources essential food items such as sorghum, onions, and groundnuts from Chad.

In 2021, 228,000 tons of goods were exported to Chad from Cameroon, valued at $159 million; more than 16% are food and agriculture-related (Business in Cameroon, 2022). The corridor is at risk due to climate change, which results in irregular weather patterns and threatens various industries such as agriculture and transportation. Moreover, the region is also experiencing political unrest, violence, and conflicts, seriously disrupting the transportation and supply chains.

As a result, delays, gridlocks, and road congestion are more frequent. Cumbersome customs clearance procedures are also adding to the problem, leading to further delays and inefficiencies in the transportation of goods. All these factors combined make the corridor increasingly difficult to navigate and hinder the region’s economic growth.

Cameroon houses two major ports - the Port of Douala and the Port of Kribi. The Port of Douala is one of the most competitive ports in terms of market structure in the Central Africa sub-region and was the market leader in 2009, 2015, 2016 and 2018 (Balla, 2020). The strategic location of the Douala Port, close to the main landlocked countries of Chad and Central Africa Republic, presents a substantial competitive advantage to the port. The Kribi Port (Port Autonome de Kribi, PMK) is located in Lomé, 35km from the city of Kribi. It was commissioned in...
The Douala Seaport

The Douala seaport is located along the Douala-N’Djamena-Abéché corridor and is the main seaport and most important port in Cameroon. It is situated on the Wouri River estuary, accessible from the sea through a 50 km channel. Since the mid-19th century, it has been a trading port for Cameroon and neighboring landlocked countries in the Sub-Saharan African region, including Chad and the Central African Republic. It handles approximately 89% of Cameroon’s port cargo and is one of the top industrial centers of the Central African region (CNSC. 2023).

According to the Logistics Cluster’s Digital Logistics Capacity Assessment (DLCA, with updates in 2019, 2022, and 2023), some of the key highlights of the Port of Douala are:

- As of 2019, the port had an annual cargo handling capacity of 7 million metric tons and a storage capacity of over 11 million metric tons.
- The port operates at 80% capacity, with an average vessel quay time of 3.4 days as of 2019.
- In 2022, the port handled 6,280,500 tons of cargo, 187,500 TEU, and serviced 2,800 vessels (Ahmed, 2022).
- The port is a multipurpose harbor equipped with facilities to handle various types of cargo, such as dry cargo, liquid bulk, container goods, Roll-on Roll-off (RoRo), and more.
- It boasts a quay length of 27,000m with a water depth of 8m, making it possible for cargo ships with a maximum length overall (LOA) of 200m and a draught of 8m to dock.
- It has a general cargo terminal and a container terminal.
- The general cargo terminal has 11 berths, each 150m long, a warehouse area of 59,000 m², functional port equipment, and a total open storage space of 39,000 m². Additionally, an 8,000m³ warehouse provides cold storage facilities for fruits, vegetables, and other perishable goods.
- The container terminal consists of three berths, each measuring 500 meters, and the stacking yards can handle up to 5000 TEUs per day. The terminal also has four cranes, 18 reach stackers, 15 forklifts, 30 tractors, 29 trailers, 120 reefer connections, and a container storage yard that spans 385,000m². Additionally, it has a built-in ramp for handling Roll-on Roll-off (RoRo) cargo.
- The port features nine conventional berths, two container berths, a shipyard, and berths for tankers, fruit, and bulk wheat.
- Its major export products are bananas, gasoline, timber, cocoa, cotton, aluminium, coffee, forest products, and fruits.
- The typical imports are fuels like gasoline, LPG, cereals, chemicals, bauxite, construction equipment, and machinery.

The Port Autonome de Douala has a concession agreement with private cargo handling companies that are organized into syndicates. The largest syndicate is the Groupement Professionnel des Sociétés de Gestion de Concession de Douala (GPAC), a public-private partnership that manages the port’s operations.

2018 to alleviate vessel delays and reduce operational costs caused by disruptions at Douala Port.

N’Djamena is the Capital of Chad and an important economic and logistical gateway to the landlocked Saharan regions. The city performs the strategic role of a transport hub, consolidation and redistribution center for goods and cargo along the Douala-N’Djamena-Abéché corridor. Chad is one of the poorest and most landlocked countries in Sub-Saharan Africa, whose primary economic concern is trading activities. The main access to Chad is through the Cameroon transit corridor, originating from the port of Douala through N’Djamena either by rail or road. Abéché is Chad’s fourth-largest city and the final destination point of the Douala-N’Djamena-Abéché corridor. This city is a huge humanitarian logistics echo point through which vital aid reaches more challenging and rugged terrains in the Central African region.

Port and waterways infrastructure

Assessment of the Douala-N’Djamena-Abéché corridor

1948. This association specializes in docking, transhipping operations, and handling goods at the port of Douala and manages the dockers.

Douala Port is organized into eleven (11) terminals/sections handling different operations and goods such as wood, general merchandise, minerals (Alumina and Aluminium), containers, fruit (and conventional cargo), oil, fisheries, ship repair, logistical support, oil research, and storage areas with shops. The PAD and GPAC are equipped with facilities and equipment to handle cargo operations at the port (see 2.2.3 Port and Waterways Infrastructure).

The Régie du Terminal à Conteneurs (RTC), on behalf of the PAD, has been in charge of managing, operating, and maintaining the container terminal since January 2020 after the end of a 15-year concession granted to DIT (Douala International Terminal, a joint venture between Bollore and Maersk). Some strategic equipment for efficient cargo handling available at the PAD includes a Quay or ship-to-shore (STS) gantry, Mobile cranes, Rubber-tyred gantry (RTG), Reach Stackers, Spreaders Elevators, and Forklifts. The availability and functioning of this equipment and facilities make RTC to be regarded as one of the best-equipped terminals in Central Africa (Port Technology International, 2021). Between 2020 and 2023, RTC invested in improving the container terminal’s handling capacity through software upgrades (going from an on-the-premises solution to a cloud-based solution to handle fluctuations and efficiently run its operational ecosystem) and the acquisition of modern handling equipment (Port Technology International, 2021; Business in Cameroon, 2024).

These investments helped RTC rightsize its operation to handle fluctuations and improve the terminal operational ecosystem.

The inefficiencies of the port of Douala are one of the main hindrances on this corridor. In 2018, the average cargo dwell time was estimated at 22 days, which is five times higher than the Port of Durban (Kaminsato, 2016). Despite some notable improvements on the handling abilities at the port of Douala, many operational challenges remain, such as:

- Cargo handling delays due to cumbersome customs procedures and language barriers between customers and workers, as the most used language at the port is French (Ako, 2022).
- Congestion at the berth due to a high occupancy rate (89%) (Ahmed, 2022) causes a long queue of ships at the base buoy.
- Inadequate handling equipment.
- Fridays and Saturdays account for over 50% of the traffic at Douala port, leading to inconsistent cargo handling, operations, and delays.
- Chaotic traffic in the port area.
- Lack of space dedicated to processing goods in transit and insufficient storage capacity.
- High port handling costs. Port and cargo-handling costs in the port of Douala are estimated at $6.5 per ton of general cargo on average. This is twice the global average (Balla et al., 2016).
The Kribi Seaport

Due to the increased demand at Douala port and the seasonal congestion it experiences during peak periods, the destination for container ports has been changed to Kribi port (see appendix). The Port of Kribi, located in South Cameroon, was commissioned to alleviate vessel delays and reduce operational costs caused by disruptions at Douala Port.

The Port of Kribi became operational in 2018 and is the only deep-sea port in Central Africa. It is undergoing rapid expansion and is strategically positioned to evolve into a free-trade zone, encompassing manufacturing and industrial facilities alongside energy and mineral terminals (International Trade Administration, 2024). In the second quarter of 2023, it is estimated that the port of Kribi accounted for 12% of the overall port traffic in Cameroon and 24% of the container traffic.

The port of Kribi was initially described as a bulk-handling port. In 2018, containerized goods only represented 18% of the traffic of goods in the Port of Kribi. Liquid bulk (hydrocarbons, gaseous, etc.) and solid bulk (mainly wood) accounted respectively for 79% and 3% of the traffic (PAK, 2018). However, containerized traffic has been progressively increasing, especially with growing infrastructural investments to facilitate the handling of containerized goods. In 2023, containerized goods represented 49% of the traffic at the Kribi port (CNSE, 2023).

According to the UNICEF assessment report (2020), the Kribi Seaport, also known as Port Autonome de Kribi (PAK), is connected to the sea through a channel that is 750 meters long, 200 meters wide, and 16 meters deep. The seaport has advanced port infrastructure, including a container terminal that accommodates vessels carrying more than 8,000 containers. The various equipment and facilities available at the port, according to the UNICEF report and Ahmed (2022), are:

- 750 meters of quay for conventional and container berths to receive two vessels of over 250 meters simultaneously, carrying 50,000 metric tons of commodities (more than double that of the Douala port).
- Three operational porticos with lifting capacities of 68 MT, 35 MT, and 25 MT, respectively. These porticos can process up to 350,000 TEU per year.
- Two post-Panama ship-to-shore (STS) gantries, five rubber-tired gantries (RTG), three mobile cranes, five units of Reach stacker, RoRo Tugmaster with twenty tractors and fifteen trailers, and five units of Transstaker.
- A Container Freight Station (CFS) with a capacity of 10,000 20-foot units and a daily take-off capacity of 60 containers per hour.
- Refrigerated container station with 192 units capacity (to be plug at once).

According to the UNICEF report, the port boasts several significant features expected to play a crucial role in facilitating the transportation and distribution of humanitarian aid and relief materials through the DNA corridor. Some of these features are:

- Lower customs rates and faster processing time (3 days).
- No berthing delay or congestion. Customs formalities take 1-3 days.
- Shorter transit time and lower sea freight due to direct calls.
- Higher vessel capacity than Douala port (16m).
- Efficient handling system due to paperless and simplified procedures.
- Possibility of priority berthing and special stacking arrangement for humanitarian cargo. Especially during emergencies or high seasonal demands.
- Truck gating-IN, loading, gating-OUT takes an average of 10 minutes.
- Adequate trucking capacity.
- No significant increase in total road transport rate from Kribi to N’Djamena despite an additional 80km.
- Automated container facilities.

In 2022, a new Kribi Logistics Hub, covering a total of 24,000 sqm next to the Kribi Container Terminal (KCT), was inaugurated for the reception, storage and delivery of imported and re-exported products (Maritime Gateway, June 2022).

This multimodal logistics platform, built by the Bollore Group, represents a pivotal addition to the region’s logistics framework, playing a crucial role in streamlining operations not only for Cameroonian economic stakeholders but also for those in the hinterland, notably Chad and the Central African Republic. The first phase of the infrastructure, which now fully operational, extends on 2.7 ha and includes key features such as a 3,700 m² container park, a 6,000 m² warehouse, a 900 m² porch to facilitate container processing during adverse weather conditions, a 380 m³ water storage tank for firefighting purposes, as well as unloading waiting areas and technical facilities. According to the Bollore Group, the remaining surface will provide an additional 18,000 m² of storage through 3 warehouses of 6,000 m² each (Business in Cameroon, 2022).

Since its inception, the logistics hub has facilitated the transportation of significant quantities of commodities such as sesame, Chadian and Cameroonian cotton, and cocoa-derived products to global markets. Notably, operations have been executed within timeframes conducive to maintaining the competitive edge of the deepwater port of Kribi. The World Food Program (WFP) has identified this hub as an instrumental asset for enhancing the cost-efficiency of food product imports (Business in Cameroon, 2022).

Dry Port and Waterways in Chad

Due to its landlocked location, Chad lacks seaports and only accounts for one functioning port: the Dry Port of N’Guell, situated just 15 km south of Central N’Djamena. It is the main gateway between Chad and incoming freight from Cameroon (Logistics Cluster, 2013e). Chad has a total of 2,400km of navigable waterways as of 2022. This includes two rivers: the Chari (1,400 km long) and the Logone (1,000 km long).
Transport modes and routing options

The primary modes of transportation throughout the corridor are by rail and road (Cherikivi & Wang, 2019). Road transport is responsible for 90% of the passenger movements along the corridor and carries nearly 60% of the freight traffic (World Bank, 2021). This is due to its flexibility, accessibility, and ability to quickly respond to shifts in supply and demand situations, as well as connecting remote locations (Tchanche, 2019).

However, as shown during the interviews with the humanitarian partners, two transport modes are essentially used for humanitarian aid delivery to Chad: road transport, accounting for 95% of their shipments and airlifting for the remaining 5%, which mostly applies to electronic office equipment and urgent requests.

Road networks along the corridor

Approximately 50,000 kilometers of roadways connect Cameroon to its six neighboring countries (Nigeria, Chad, Central African Republic, Equatorial Guinea, Gabon and the Republic of the Congo). Out of these, only 10,225.58 kilometers (20 per cent) are paved (as of December 2023), while the rest are unpaved (Business in Cameroon, 2023). Due to poor maintenance, the unpaved roads become impassable during the heavy rain season, which causes significant movement restrictions for freight vehicles.

The 1,114km highway between Douala and Ngaoundere is accessible throughout the year; however, some parts can be inaccessible during the periods of heavy rains. As a landlocked country, roads in Chad are the primary mode of transportation for national and international trade, as noted by various reports, accounting for 95% of the trade. Unfortunately, poor road conditions make travel slow and difficult, particularly during the rainy season, limiting trade and making transportation of goods and people extremely expensive and time-consuming.

The characteristics of the major road stretches along the corridor are detailed in Appendix 1. According to the Convention on Road Transport between Cameroon and Chad signed on 13 April 1999 (Cameroon Treaties Agreements, 2023), the corridors defined by these agreements are (see Appendix 1 for detailed section, starting with a 60km stretch from Yaoundé to Bibidé Interchange that was completed and opened in 2022. The construction of the portion linking Bibidé-Edéa-Douala (136-km) began in 2020 and is being executed under the Public-Private Partnership framework. It is anticipated to be completed in 2025 (Cuika, 2023).

The highway section that stretches from Yaoundé to N’Djamena is accessible across the year; however, some parts can be challenging for trucks and trailers, particularly between June and September, due to heavy rainfall. In 2014, construction began on a new 261km road along the Douala-Yaoundé section, with a 60km stretch from Yaoundé to Bibidé Interchange (Chadian border) recommended by the transport company they work for, did so because of the better road and security conditions. Transport companies and truck drivers prefer this route because it is more recent and is in better condition, reducing the risk of damage to their fleet and the goods transported. The relatively good state of the road compared to the other routing options, allows the truck drivers to ride at a regular and steady speed since there are fewer deteriorated stretches of road. Therefore, the level of security on this road increased as the drivers don’t have to slow down too often, which exposes them less to armed robbery. Informal payments are also reported to happen less often on this route, which contributes to making it a more frequent option for truck drivers. The N’Djamena-Tchad-Moundou-N’Djamena section is also mostly used by truckers picking up loads from the train in N’Djamena. Overall, 95% of transporters that collect products from the train station of N’Djamena prefer to travel using this route, mainly because the condition of the road and the security along the route are better. Due to the political and security situation in the far North of Cameroon, truckers have started opting for the eastern route, which carried 375,000 tons of goods in 2019, compared to the northern route’s 20,000 tons.

2. The N’Djamena-Garoua-Maroua-Kousséri-N’Djamena route (873 km), which 30% of the drivers use most frequently. This is the main legal and custom-approved road from Cameroon to Chad based on the 1999 Cameroon Treaties Agreements with Chad. The N’Djamena-Garoua-Maroua-Kousséri-N’Djamena route via Tchad is in better condition, unless special authorization from Customs exists.

Further to the two itineraries presented above, another routing option has also been mentioned by the truck-drivers, though being less frequently used by them:

3. The N’Djamena-Garoua-Figuil-Léré-N’Djamena (939 km) route which is used by 9% of the drivers interviewed.
Figure 3: Most frequently used routes from Douala and Kribi to Abéché according to the truck drivers

Figure 4: Routes taken by truck drivers from Douala and Kribi to Abéché

Figure 5: Cameroon Rail Network

SOURCE: DALBERG RESEARCH (2023)

SOURCE: LAGOS STATE UNIVERSITY (2023)
Rail network in Cameroon

The train plays a key role in facilitating shipments of commercial goods to Chad. It travels from Douala to N'Djamena via Yaoundé and provides a reliable and cost-effective mode of transportation for freight from the port to the interior regions of Chad and Central African Republic.

The rail network from Douala to N’Djamena carries approximately 39% of the freight traffic, and rail transports more than two-thirds of Chad’s imports (World Bank, 2021). With its capacity to move heavy loads over long distances at comparatively low prices and with little fuel consumption and emissions, rail transport offers the advantages of low cost, speed stability and reliability (over long distances), high dependability, and little environmental effect. Competition between rail and road transport also helps contain road transport costs and curb excess loads on the main road corridors (World Bank, 2021). It is worth noting that this rail corridor is one of Africa’s few functional, safe, competitive, and eco-friendly corridors, as noted by the World Bank in 2022.

Due to issues such as the ageing and obsolescence of the railway network, lack of funding, and inefficiency and unreliability of the railway services, the Government of Cameroon decided to privatize and concede the operations of Cameroon National Railways. This was done in 1999, with the operation being taken over by a private company called CAMRAIL, owned by Bollore Transport & Logistics. The concession agreement between the Government of Cameroon and CAMRAIL extends till 2034 and covers various aspects of the railway system, including maintenance, development, and exploitation of railway infrastructure.

According to various reports, such as the one from the World Bank in 2022, the concession has led to the modernization and upgrading of the rail infrastructure.

The railway infrastructure of CAMRAIL is a critical aspect of the country’s transportation system, facilitating the movement of goods and services from the Port of Douala to Yaoundé (258km) and N’Djamena (626km), which serves as the final station for trains arriving from Douala via Yaoundé.

The railway is divided into two sections: Transcam 1 (Douala - Yaoundé), covering 41 stations and Transcam 2 (Yaoundé - N’Djamena), covering 16 stations. CAMRAIL has the capacity for both bulk and containerized cargo. The N’Djamena and Belabo railway stations are the two major logistical hubs within the CAMRAIL network. The N’Djamena railway station handles container and bulk cargoes and is equipped with appropriate handling and storage capabilities to take care of transit, local, and regional goods. Containerized goods are, therefore, loaded at Douala Port and usually offloaded at N’Djamena. Belabo railway station, on the other side, serves as a dry port mainly for timber and other cargoes. Other stations are for passengers and lighter/small goods.

In 2019, the estimated daily traffic of goods on this network by CAMRAIL ranged from 5 to 10 trains, with one daily rotation in Douala - Yaoundé – Douala and two services between Yaoundé and N’Djamena using 29 locomotives and 1,078 freight wagons of different types (DLCas, 2019); Recently, the service expanded with 38 locomotives, more than 1,213 freight wagons of different types (flat, covered, open, tank, etc.), and merchandise services for a full wagon (CAMRAIL, 2023) along 50+ stations. According to Africa Global Logistics (2023), CAMRAIL moves an average of 1.5 million tons of freight annually, with a turnover of €59 million in 2021.

Over the years, CAMRAIL, the Government of Cameroon, and development partners have instituted and implemented various initiatives and projects to improve the quality of rail services and infrastructure along the rail network. In 2000, the Government of Cameroon and CAMRAIL, with support from the World Bank, agreed on a five-year infrastructure renewal program to modernize the country’s railway infrastructure (Logistics Update Africa, 2020). Similarly, CAMRAIL initiated a multimodal transport project in 2020 in conjunction with the Government of Cameroon and Financial support from the World Bank to improve the efficiency and effectiveness of transport along the Yaoundé-Kousséri corridor. In 2022, the European Union, through the European Investment Bank (EIB), agreed to invest €123 million in upgrading the 330km Belabo – N’Djamena railway line to improve freight and passenger movement to the North of Cameroon, Chad and Central African Republic, and to provide a sustainable alternative to road transport (European Investment Bank, 2022). The project, expected to be completed in 2023, includes rail track upgrade and engineering work, station facilities and rail crossing safety improvements.

As described by the truck drivers during the local assessment, the goods shipped from Cameroon to Chad through the railway are offloaded in N’Djamena and picked up from there by road transhippers (in most cases, Chadian trucks) to cover the remaining distance until Chad. This presents a financial advantage as the portion of the journey carried out by road is shorter, which implies less exposure to formal and informal stops and payments that usually happen along the way.

The transporters, therefore, offer more competitive pricing in this section of the corridor, which contributes to making the overall cost of the bimodal road-rail cargo shipment more price-efficient than the full-road option. According to a World Bank report, transporting a container by rail in 2019 was approximately 40% less expensive than by road. The competition of the railway has significantly reduced the heavy traffic on main roadways, improving overall transport security and reducing greenhouse gas (GHG) emissions. Due to the nature of the roads within the corridor, particularly during the rainy season, rail transportation becomes the best option for freight movement (World Bank, 2022). However, despite the many advantages of the railroad, humanitarian actors do not use the train to ship their goods from Cameroon to Chad.

The average road transit time along the Douala – N’Djamena corridor is estimated at 12 days. An additional 4 to 7 days must be considered for the waiting time at the border before the customs clearance formalities (Raballand G. & Cantens T., 2009). This is confirmed by the transporters interviewed during the local assessment with a transit time estimated between 12 and 14 days (exclusive of the customs lead times) depending on the route, as shown in Table 3. The transit time varies slightly depending on the selected routing option.

Table 3: Transit time on average for each routing option as estimated by the truck drivers

<table>
<thead>
<tr>
<th>Routes</th>
<th>Average transit time in days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Douala/Kribi-Yaoundé-Abong/Mbang-Bertoua-Garoua Bouali-Ngoumendre-Touboro-Moundou-N’Djamena-Abéché</td>
<td>12</td>
</tr>
<tr>
<td>Ngoumendre-Garoua-Figuit-Léré-N’Djamena-Abéché</td>
<td>5</td>
</tr>
<tr>
<td>Ngoumendre-Touboro-Moundou-N’Djamena-Abéché</td>
<td>4</td>
</tr>
<tr>
<td>Ngoumendre-Garoua-Maroua-Kousséri-N’Djamena-Abéché</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: Local Assessment (December 2023)
As noted in a World Bank report of 2022, it takes about 20 days for freight transit from Port of Douala to N’Djamena over a total distance of 1,700km using the rail-road network. A breakdown of the journey time gives the rail transit time to the Ngaoundere platform from Douala port to be seven (7) days and two (2) days for transshipment at the Ngaoundere platform. The study further specified that from Ngaoundere, the transit of the shipment takes another four (4) days to N’Djamena, and customs clearance at the destination takes seven days. The route from N’Djamena to Abéché takes two days over a distance of 748km. The rail-road transit time is therefore, comparable to the road transit time (around 12 days of driving time and 4 to 7 days of customs formalities totaling 16 to 19 days on average) with significant pricing efficiency gain and environmental impact reduction.

Table 4 displays the cost of transporting one ton of freight from Douala to N’Djamena via the rail-road network.

<table>
<thead>
<tr>
<th>S/N</th>
<th>Description</th>
<th>Origin</th>
<th>Destination</th>
<th>Cost per ton (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rail transit cost per ton</td>
<td>Port of Douala</td>
<td>Ngaoundere rail platform</td>
<td>60</td>
</tr>
<tr>
<td>2</td>
<td>Loading and offloading cost for one ton</td>
<td>Port of Douala</td>
<td>Ngaoundere rail platform</td>
<td>1.38</td>
</tr>
<tr>
<td>3</td>
<td>Road transport operating cost for one ton</td>
<td>Ngaoundere rail platform</td>
<td>N’Djamena</td>
<td>94</td>
</tr>
<tr>
<td></td>
<td><strong>Total per ton</strong></td>
<td>****</td>
<td>****</td>
<td><strong>155.38</strong></td>
</tr>
</tbody>
</table>

1. Formal transport companies are formally registered and licensed entities that operate within the transportation industry, complying with legal and regulatory requirements. Informal transport companies are unregistered and often unlicensed entities operating outside formal regulatory frameworks, typically lacking legal recognition.
Transport capacity and availability

According to various reports, surveys, and assessments, the Douala – N’Djamena – Abéché corridor boasts an estimated trucking capacity of 78,000 units. Three categories of transport companies own these trucks:

- “End-to-end” transport companies, generally large scale, operating a fleet of more than 50 trucks
- Professional trucking companies, generally medium scale, that own their fleets (on average 20 to 50 trucks), either fully or partially
- Brokers who hire their vehicles individually or as a group daily, commonly known as “Bana-Bana” and operating less than 25 trucks on average

A significant proportion of the trucks are over 30 years old, especially those owned by individuals.

Based on the insights gathered during the interviews for the local assessment, it appears that humanitarian actors operating in Chad mostly outsource their transport operations to large-scale logistics providers. On their part, wholesalers and manufacturers in both Cameroon and Chad, rely essentially on their own fleet (of a relatively large capacity) for the shipment of their goods and would only occasionally outsource a smaller share of their volumes to third-party transport providers. Contrary to the humanitarian organizations, the private sector actors mostly work with small-scale transporters and a few medium-scale providers. According to the wholesalers and manufacturers that were interviewed, the on-time delivery performance of their third-party transport providers is estimated on average at 60%, which indicates a moderate level of reliability in the available transport services and highlights the need for advanced transport planning and scheduling into their logistics management to ensure availability and avoid potential delays or disruptions in their supply chains.

It was determined from the interviews with transport companies and truck drivers that the average truck capacity requested for transporting goods between Cameroon and Chad is 30 metric-tons. Flatbed and Bulk trucks make up the majority of the fleet available in both countries (respectively 40% and 47% in Chad, and 47% and 39% in Cameroon), regardless of the size of the transporter. Refrigerated trucks are seldom found and can generally only be provided by medium and large-scale transporters.

Table 5: Average fleet composition per type of transporter in Cameroon and in Chad

<table>
<thead>
<tr>
<th>Type of truck</th>
<th>Chad</th>
<th>Cameroon</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Small scale</td>
<td>Medium scale</td>
</tr>
<tr>
<td>Container truck</td>
<td>14%</td>
<td>10%</td>
</tr>
<tr>
<td>Bulk truck</td>
<td>43%</td>
<td>52%</td>
</tr>
<tr>
<td>Flatbed truck</td>
<td>43%</td>
<td>35%</td>
</tr>
<tr>
<td>Refrigerated truck</td>
<td>0%</td>
<td>3%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

SOURCE: LOCAL ASSESSMENT (DECEMBER 2023)

Considering that over 25% of the traffic at the Douala port and nearly 50% of the traffic at the Kribi port are containerized shipments (Table 6), there appears to be a discrepancy between the composition of the transport fleet and the traffic volume at the port. The percentage of container trucks in the average transport fleet that transits along the corridor (11%) is significantly lower than the proportion of port container traffic. While this distribution of container traffic at the Cameroonian ports might not necessarily be representative of the volumes that transit in the Douala – N’Djamena corridor, this discrepancy could suggest a mismatch between the types of trucks available and the transportation needs along the corridor, which could result in inefficiencies, suboptimal resource allocation, and potential congestion or capacity constraints in handling certain types of cargo.

Table 6: Distribution and evolution of overall traffic at the Douala and Kribi ports per type of packaging

<table>
<thead>
<tr>
<th>Packaging</th>
<th>Jan-March 2022</th>
<th>Jan-March 2023</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quantity (t)</td>
<td>Fob Value (M.CFAF)</td>
</tr>
<tr>
<td>Douala</td>
<td>2,736,598</td>
<td>995,799</td>
</tr>
<tr>
<td>Container</td>
<td>648,675</td>
<td>574,143</td>
</tr>
<tr>
<td>Conventional</td>
<td>639,811</td>
<td>167,058</td>
</tr>
<tr>
<td>Bulk</td>
<td>1,448,111</td>
<td>254,597</td>
</tr>
<tr>
<td>Kribi</td>
<td>241,641</td>
<td>137,385</td>
</tr>
<tr>
<td>Container</td>
<td>157,515</td>
<td>132,634</td>
</tr>
<tr>
<td>Conventional</td>
<td>36,486</td>
<td>3,738</td>
</tr>
<tr>
<td>Bulke</td>
<td>47,640</td>
<td>1,014</td>
</tr>
<tr>
<td>Grand total</td>
<td>2,978,239</td>
<td>1,133,184</td>
</tr>
</tbody>
</table>

SOURCE: CNSC

As noted in Table 7, there is a higher and more consistent demand for transportation services requiring flatbed trucks and bulk trucks compared to those requiring container trucks, especially with medium and large-scale transporters. Based on the high fleet utilization rates for bulk trucks (75% on average), Flatbed trucks (86% on average) and refrigerated trucks (75% on average), it is likely that securing those types of trucks on short notice for immediate or urgent needs could be very challenging as there would be very limited availability. Organizations frequently relying on transportation services that require flatbed or bulk trucks should, therefore incorporate transport planning and scheduling into their logistics management to ensure availability and avoid potential delays or disruptions in their supply chains.
To transport cargo from Cameroon to Chad, a quota system must be observed among the trucking companies as stated in the Conventions Governing the Operation of Transit Corridors in Central Africa signed in April 1999 between the Cameroonian and Chadian Governments. This system is managed by an officially recognized Cameroonian Land Freight Management Office (Bureau de Gestion de Fret Terrestre camerounais [BGFT]) and the Chadian National Freight Office (Bureau National de Fret Tchadien [BNFT]). As per the quota regime, 65 percent of the cargo commodities meant to go to Chad are to be carried by Chadian trucks, while the remaining 35 percent is to be carried by Cameroonian trucks (Cameroon Treaties Agreements, 2024).

The freight bureaus (BNFT and BGFT) are crucial in regulating and overseeing the quota system for overland cargo movements. They act as arbitrators to ensure fair negotiations and therefore also affect the supply chains along the corridor. This section of the analysis aims to elucidate the influence of seasonal factors on the availability, the capacity and the costs of transport services.

### Impact of weather conditions

Impact in Cameroon and Chad, the dry season generally from October to May, and the rainy season is from June to September. During the interviews, three-quarters of the drivers reported that July and August are the most difficult months to navigate through the corridor when the weather conditions are the most unfavorable. This is confirmed by the local assessment which reveals a significant disparity between transport companies from Cameroon and Chad in terms of their activity within the corridor. Transport companies from Cameroon undertake to complete shipments from Douala to N’Djamena during the rainy season have a longer delivery time (on average 3 additional days, regardless of the route taken).

As reported by the truck drivers, the road conditions in some cases, become so bad that the lorries are forced to stop or return to their point of departure. It may take up to 5 additional days for transporters to complete shipments from Douala to N’Djamena (one-way), and up to 13 days more to make a round trip from N’Djamena to Douala or Kribi because of the rain. The bad road conditions during the rainy season also cause more frequent mechanical issues for the fleet. As a result of the longer transit times and the increased risk or number of mechanical breakdowns, the available transport capacity becomes significantly reduced during that period. The limited capacity and availability of trucks are always affected by this season. As indicated in the interviews, transporters decline, on average, 60% of the transport orders they receive between July and September. They often don’t have enough capacity because their trucks are stuck on the road (because of extended travel time) or have broken down, or because they don’t want to risk any damage on their fleet and would rather not navigate the corridor during that period (due to the roads conditions and the mechanical issues that result from driving under heavy rains).

### Transport seasonality

Seasonal fluctuations significantly impact the transport sector, and therefore also affect the supply chains along the corridor. To overcome this challenge, a mutual understanding has been established with the Cameroonian trucking companies regarding transporting goods when there is a shortage of capacity from the Chadian counterparts. This is in line with the provisions of the convention, which state that a contracting party may waive all or part of its quota.

This is confirmed by the local assessment which reveals a significant disparity between transport companies from Cameroon and Chad in terms of their activity within the corridor. Transport companies from Cameroon undertake in average three times more trips and volumes of goods (in metric-tons) in the corridor than their counterparts from Chad as shown in Table 8. N’Djamena is also confirmed as the main destination for the goods transiting through this corridor from Cameroon to Chad. As a comparison, the number of trips and the volume of goods destined for N’Djamena are in average ten times higher than those on their way to Abéché.
For example, in October 2022, the Logone River, which serves as the border between Cameroon and Chad, overflowed, resulting in devastating flooding (Moki, 2022). This situation significantly disrupted border activities and truck movements at the border crossing. Hundreds of trucks carrying essential supplies were stranded on both sides of the border as the roads became impassable and customs operations disrupted, resulting in longer clearance times and disruption of the general supply chain. This bottleneck can also be observed in Figure 13, which shows a peak number of 505 truck movements recorded on October 21st, 2022, along the Cameroon-Chad border. Riverine floods have occurred more frequently in the eastern and western African regions lately.

In 2022, early and above-normal rainfalls caused both fluvial (or riverine) and pluvial (rainfall-related) floods in the Lake Chad Basin, northern Cameroon and Chad. The rainfalls in Chad were reported as the heaviest recorded in three decades for the country (Balogun et al., 2023).

This is a consequence of climate change which has made seasonal rainfall over the Lake Chad region about 80 times more likely and approximately 20% more intense (Balogun et al., 2023). Prices for trucking services also tend to increase during the wet season, particularly when going to remote areas with unpaved roads.

During the interviews, the drivers on the corridor were asked to indicate which months of the year they considered their prices to be at their lowest and at their highest. For each month that they indicated, they were also asked to estimate by how much their prices would drop or increase in comparison to the average price during the year.

As shown in Table 9, the months between February and May are confirmed to be the ones with the highest price decrease and therefore represent, as already observed from Figure 15, the most favorable period to navigate the corridor, in terms of transport prices. However, according to the drivers’ responses, prices do not really drop that much, with the most substantial reductions being lower than 5% on average (2.4% decrease in February, 4% in March, 2.7% in April and 3.4% in May).

### Table 9: Highest Percentage decrease in transportation prices

<table>
<thead>
<tr>
<th>Month</th>
<th>Lowest Percentage decrease (%)</th>
<th>Highest Percentage increase (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>14%</td>
<td>54%</td>
</tr>
<tr>
<td>February</td>
<td>13%</td>
<td>49%</td>
</tr>
<tr>
<td>March</td>
<td>8%</td>
<td>35%</td>
</tr>
<tr>
<td>April</td>
<td>3%</td>
<td>17%</td>
</tr>
<tr>
<td>May</td>
<td>2%</td>
<td>11%</td>
</tr>
<tr>
<td>June</td>
<td>3%</td>
<td>17%</td>
</tr>
<tr>
<td>July</td>
<td>4%</td>
<td>3%</td>
</tr>
<tr>
<td>August</td>
<td>17%</td>
<td>6%</td>
</tr>
<tr>
<td>September</td>
<td>21%</td>
<td>16%</td>
</tr>
<tr>
<td>October</td>
<td>6%</td>
<td>6%</td>
</tr>
<tr>
<td>November</td>
<td>5%</td>
<td>16%</td>
</tr>
<tr>
<td>December</td>
<td>3%</td>
<td>30%</td>
</tr>
</tbody>
</table>

### Table 10: Highest Percentage increase in transportation price

<table>
<thead>
<tr>
<th>Month</th>
<th>Lowest Percentage increase (%)</th>
<th>Highest Percentage decrease (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>0.30%</td>
<td>6.60%</td>
</tr>
<tr>
<td>February</td>
<td>0.70%</td>
<td>2.9%</td>
</tr>
<tr>
<td>March</td>
<td>1.1%</td>
<td>0.60%</td>
</tr>
<tr>
<td>April</td>
<td>0.8%</td>
<td>1.9%</td>
</tr>
<tr>
<td>May</td>
<td>0.5%</td>
<td>0.60%</td>
</tr>
<tr>
<td>June</td>
<td>1.0%</td>
<td>1.8%</td>
</tr>
<tr>
<td>July</td>
<td>0.2%</td>
<td>0.90%</td>
</tr>
<tr>
<td>August</td>
<td>1.1%</td>
<td>1.0%</td>
</tr>
<tr>
<td>September</td>
<td>0.7%</td>
<td>1.1%</td>
</tr>
<tr>
<td>October</td>
<td>0.6%</td>
<td>2.5%</td>
</tr>
<tr>
<td>November</td>
<td>0.8%</td>
<td>3.0%</td>
</tr>
<tr>
<td>December</td>
<td>1.6%</td>
<td>3.0%</td>
</tr>
</tbody>
</table>

## Seasonal prices fluctuation due to weather conditions

<table>
<thead>
<tr>
<th>Month</th>
<th>Lowest Percentage decrease (%)</th>
<th>Highest Percentage increase (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>13%</td>
<td>49%</td>
</tr>
<tr>
<td>February</td>
<td>13%</td>
<td>40%</td>
</tr>
<tr>
<td>March</td>
<td>3%</td>
<td>35%</td>
</tr>
<tr>
<td>April</td>
<td>2%</td>
<td>35%</td>
</tr>
<tr>
<td>May</td>
<td>17%</td>
<td>35%</td>
</tr>
<tr>
<td>June</td>
<td>2%</td>
<td>35%</td>
</tr>
<tr>
<td>July</td>
<td>3%</td>
<td>35%</td>
</tr>
<tr>
<td>August</td>
<td>4%</td>
<td>35%</td>
</tr>
<tr>
<td>September</td>
<td>7%</td>
<td>35%</td>
</tr>
<tr>
<td>October</td>
<td>16%</td>
<td>35%</td>
</tr>
<tr>
<td>November</td>
<td>6%</td>
<td>35%</td>
</tr>
<tr>
<td>December</td>
<td>30%</td>
<td>35%</td>
</tr>
</tbody>
</table>

**Note:** Only common routes were compared. As shown in Figure 14, the cost of transportation on all the routes is influenced by weather conditions to a certain degree. However, it is noteworthy that the Kribi-Edea-Yaoundé-Abong/ Mbang-Bertoua-Garoua/Boulai-Meyangga-N’gaoundéré-Toumboro-Moundou-N’Djamena route is less affected, distinguishing itself from the other routes. This can be partially explained by the better condition of the road in the Ngaoundéré-Toumboro-Moundou-N’Djamena section.

There is a consistent observation among the truck drivers interviewed during the local assessment that the cost of transporting goods along this corridor tends to be lower between February and May, and higher between July and September, as shown in Figure 15. These fluctuations in the cost of freight are also reflected in the prices charged for the transportation of goods. Therefore, the price to be paid for a shipment from Cameroon to Chad can be considered to follow the same trends.
Table 10 shows that prices tend to increase in the second half of the year, especially in August, September, and December. The average price increase seems relatively moderate, though, with a peak in August of around 5%. The increase in this period coincides with the rainy season from July to September. Heavy rainfall often leads to deteriorated road conditions, including potholes, mudslides, and flooding. These conditions increase the wear and tear on vehicles and may require additional maintenance or repairs, thereby increasing operating costs for transporters. Navigating through muddy and flooded roads also slows down transportation, leading to longer travel times and increased fuel consumption. Transporters may therefore need to allocate more resources, such as fuel and labor, to complete deliveries, thereby driving up costs.

The higher prices noted in the last quarter of the year are explained by the increase in agricultural activities from the end of October to January (harvest season), which causes higher demand for transportation and an increase in prices.

However, a general observation is that prices do not fluctuate much throughout the year; they only increase or decrease by up to 5% on average.

During the dry season, trade activities thrive along the DNA corridor. This is mainly due to the less humid and rainy weather, which brings about better road conditions and ease of transportation. Consequently, trucks can move more efficiently, resulting in the smooth and swift transportation of goods between Cameroon and Chad. However, the improved movement of goods during the dry season can lead to truck congestion at border crossings, as importers and traders take advantage of the favorable conditions. This is confirmed by the recordings of the truck traffic activity around the Chad/Cameroon border between May 2022 and May 2023 provided by the Airbus Foundation and displayed in Figure 13. In these recordings, the peak of the activity around the border is observed on March 28th, 2023 (towards the end of the dry season), and counted at the border area. The average daily number of trucks reported between May and August 2022 (rainy season) is 326 trucks, compared to an average of 434 trucks per day between October 2022 and March 2023 (dry season).

Impact of social and religious events
Many social and cultural events, usually traditional and folk festivals and ceremonies, are held in Cameroon and Chad throughout the year (e.g. The Festival Ngondo, The Festival International de Jazz de Douala, The Festival des Cultures Sahariennes in Chad, etc.). As part of the interviews, the truck drivers were asked to assess to what extent these social celebrations impact the duration of their journeys along the Douala-Abéché corridor. Nearly 88 per cent of the truck drivers confirmed that there is little to no impact of social events on the transport operations. Similar to the question on the impact of social events on the transport in the corridor, the truck drivers were also asked if there is an impact of religious events on the travel time along the corridor and if so, what are the specific religious celebrations that are concerned. As observed in Figure 16 below, it is confirmed by nearly half of the truck drivers that religious events do have an impact on the travel lead time.

This concerns celebrations such as Christmas and New Year (in December and January), Easter (in April), Ramadan and Eid festivities (which occurred in April in 2023). The increase in transit time is primarily due to heightened demand for transportation because of the surge in trading activities during the preparation of the celebrations, and the increased traffic on the roads resulting from holiday travels. The Douala-Yaoundé-Abong/Mbang-Bertoua-Garoua-Bourou/Gaouye-Garoua/Figuel-Lére-N’djamena route appears to be the most impacted itinerary.

Although there are not many details given on the extent of the delays caused by the religious events mentioned above (how long the disruptions last and how many additional days of transit time must be expected), it is worth considering when planning deliveries along the Douala-N’djamena-Abéché corridor during those periods.

Challenges and inefficiencies
Road transport along the corridor faces many challenges, such as numerous inspections, delays, and unofficial payments throughout the corridor. Poor roads, bridges, and vehicle maintenance further exacerbate these issues (Federick et al., 2021), making the transport prices along the corridor higher than in most of the developed world and in sub-Saharan Africa (Dumitresu, 2013; World Bank, 2019).

Infrastructural deficiencies
When asked about the main challenges that they encounter when navigating the Douala to Abéché corridor, 94% of the truck drivers interviewed mentioned the bad road conditions, as shown in Figure 17.

Table 11: Axle Load Limits

<table>
<thead>
<tr>
<th>Axle Load Limits</th>
<th>Chad</th>
<th>Cameroon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck with 2 Axles</td>
<td>21 tons</td>
<td>21 tons</td>
</tr>
<tr>
<td>Truck with 3 Axles</td>
<td>32 tons</td>
<td>27 tons</td>
</tr>
<tr>
<td>Semi-trailer with 3 Axles</td>
<td>32 tons</td>
<td>27 tons</td>
</tr>
</tbody>
</table>

SOURCE: DIGITAL LOGISTICS CAPACITY ASSESSMENT (DLCA, 2023)

Mechanical breakdowns are also quite common when navigating the corridor.

All the drivers interviewed confirmed that, in their last 10 journeys along the Douala – Abéché corridor, they stopped at least once due to a mechanical breakdown of their truck or a flat tire. As shown in Figure 18, 31% of the drivers had a mechanical breakdown more than 4 times in their last 10 journeys, and 76% experienced the same disruptions caused by a flat tire. While the average age of the fleet encountered during the local assessment can be considered relatively young (11 years), this rather high frequency of mechanical breakdowns indicates that the drivers are making the fleet more prone to mechanical issues along the corridor due to wear and tear over time.

As presented in Table 12, trucks that are operated by informal transport companies or owned by private commercial/industry actors. While it might be challenging to invest in fleet renewals or in road infrastructure improvement, this shows that preventive and regular maintenance certainly help to alleviate the impact of the breakdowns on the timely delivery of goods.

Documented records from various World Bank and UN publications indicated that most of the roads in the corridor are in a deplorable state. Only 20 per cent of the road networks in Cameroon and 6 per cent of the road networks in Chad are paved and considered permanently useable (as of December 2023). The rest are unpaved and can be impracticable during the heavy rainy season. This threatens the measurability of logistics service providers’ vehicles on this corridor and contributes to making the transport prices along the corridor higher than in most of the developed world and in sub-Saharan Africa (Dumitresu, 2013; World Bank, 2019). The World Bank observes that 15 – 20% of import costs to landlocked countries like Chad comprises transport costs in stark contrast to developed economies (Pelletier & Alix, 2010). The main contributing factors are capacity, availability, and other transportation barriers from the transit countries.

The truck-loadover along the corridor necessitated authorities’ imposition of axle-load limits (Martínez et al., 2018). While there have been some positive changes due to the axle-load limit regulation, increasing road traffic along the corridor is presently counterbalancing the damage to road infrastructure being regulated by axle-load limits, according to the authors.

For instance, 800,000 tons of freight were transported from the Port of Douala to N’djamena in 2018, which increased to 1,000,000 tons in 2019. The COVID 19 reduced it to 800,000 in 2020 (Business in Cameroon, 2022).
Security and road safety concerns

Security concerns are a major and recurring challenge reported during the interviews with truck drivers in both Cameroon and Chad. Incidents such as assaults on drivers, kidnappings, and attacks by armed groups occur, especially between Bertoua and Garoua-Boulai and between Ngaoundere and Touboro.

The poor road conditions between Bertoua and Garoua-Boulai and between Maroua and Kousséri force drivers to speed down when crossing those stretches at night to avoid mechanical damage that could endanger their lives and the lives of their assistants. This exposes them to a high risk of getting attacked by armed groups. This insecurity greatly impacts transit times and drivers generally do not drive at night.

“Still between Bertoua and Garoua-Boulai, there are assaults even on drivers. Attacks happen at night from 5 pm to 9 pm. Recently, in Touboro, between Ngaoundere and Touboro, armed men have been attacking and even kidnapping people and drivers.”

(KII_Transporter (Wholesaler)_Cameroon)

“It hasn’t been two weeks since they picked people up and took them to the bush. They demand ransoms of 3 to 5 million. One of our drivers was kidnapped and taken into the bush, and a ransom of 2 million was demanded for his release.”

(KII_Transporter (Wholesaler)_Cameroon)

The review of past reports on the corridor highlighted instances of militant incidents in the area that have affected transportation, making it inefficient. Furthermore, reports of assassinations, kidnappings, and robberies in the region have increased the logistics cost. These incidents have caused an uneasing concern for humanitarian personnel’s safety, as Thierry et al. (2023) noted. Military escorts are usually mandatory for truck movements in the northern and eastern regions of Chad due to the risk of kidnappings by insurgent groups. For humanitarian actors, military escorts are organized by the logistics cluster. This ensures effective coordination and efficient resource management.

Additionally, the non-enforcement of road rules, mostly due to the lack of financial resources, increases transport accidents (Frederic et al., 2021). Generally, unpaved and poorly lit stretches of road pose a greater risk, and most accidents are due to poor road conditions, speeding, and overloading of vehicles. In 2018, the road traffic death rate in Chad was 27.6 deaths per year per 100,000 inhabitants (African average was 26.6 deaths per year per 100,000 inhabitants), despite a low motorization rate (26 vehicles per 1,000 inhabitants - African average was 43 vehicles per 1,000 inhabitants).

Multiple checkpoints and informal payments

As reported during the interviews, The truck drivers’ journey from Douala to Abéché can be interrupted by 2 different types of stops:

- Formal stops: these are specific stops that are designated and approved by the transportation authority or regulatory bodies. They include weighbridges, customs offices, permanent customs and police barriers, and toll booths.
- Informal stops: these are arbitrary checkpoints randomly mounted at different points along the route and generally controlled by police officers. They are established, in theory, for public safety purposes and are used for documentation checks (such as driver’s licenses, vehicle registrations, and permits) and law enforcement activities (such as issuing citations for traffic violations, enforcing speed limits and load restrictions, or apprehending individuals with outstanding warrants). This helps ensure that vehicles and drivers are operating legally and safely.

There are about ten formal checkpoints along the Douala-N’Djamena corridor (See Figure 19) and several other informal checkpoints that affect the corridor’s profitability (Frederic et al., 2021). Most of the checkpoints are located near weight stations, causing delays in logistics operations and increasing costs for logistics service providers. Reports suggest that there are over 50 checkpoints, with a recent publication (Business in Cameroon, 2023) indicating that there are 66 checkpoints in total, with 37 on the Cameroon side.

Table 12: Mechanical inefficiencies per type of fleet

<table>
<thead>
<tr>
<th>How often do you face mechanical breakdowns in the following in your 10 journeys?</th>
<th>Type of transporter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Self-employed (n=7)</td>
</tr>
<tr>
<td>1 to 3 times</td>
<td>86%</td>
</tr>
<tr>
<td>4 to 5 times</td>
<td>14%</td>
</tr>
<tr>
<td>More than 5 times</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

SOURCE: FIELD ASSESSMENT (DECEMBER 2023)

Figure 19: Weighting Stations along Douala – N’Djamena Corridor

As displayed in Figure 20, interruptions due to formal stops occur quite often along the corridor. Out of the 159 truck drivers interviewed, nearly 60% of them had passed through more than 5 formal stops on their way from Douala or Kribi to Abéché, which extended their transit time as each additional stop added to the overall duration of the journey. Also, while these formal stops are predictable and must be accounted for in transit planning, the length of the administrative processes, inspections, or congestion at the stops is highly variant and substantially affects the efficiency of the transportation route.

In terms of cost, most of the drivers interviewed spent more than 100,000 CFA to go through a formal stop (weighbridges or permanent customs/police barriers and toll booths), as shown in Figure 21. These payments do not include the customs clearance fees and appear to be on average more costly for trucks with a Cameroonian license plate than for a Chadian one. This is explained by the fact that most Chadian trucks only travel between N’Djamena and Ngaoundere and therefore cover a smaller road portion. This exposes them to fewer formal stops, hence smaller payments to make along the way.

In addition to the formal stops that occur during the transit from Douala or Kribi to Abéché, several informal stops are also to be expected. As illustrated in Figure 22, 63% of the drivers interviewed reported that they made at least one informal stop during their transit in the corridor. Overall, nearly a fifth (21%) reported being stopped between three and four times, while one third (33%) were stopped at least five times during their journey.

Truck drivers who work for informal companies reckon that they are more exposed to these informal stops. This is mainly because informal transport companies are less stringent about regulations, which causes their shipments to be very non-compliant (e.g., they often carry goods that exceed the vehicle's load capacity, or the load limit allowed on the route).

The type of goods transported also appears to be an influencing factor in the occurrence of these informal stops. As observed in Table 13, trucks carrying building materials, medicines, metals, and beverages are more likely to experience a higher number of informal stops on their way to Abéché.

The informal stops often happen halfway from Douala to N’Djamena and are generally associated with informal payments. Those payments, of which the amount is usually negotiated between the driver and the official who made the arrest, do not come with any physical receipt or digital trace.

The expenditures incurred at informal stops exhibited variations, because the amounts paid are negotiated and do not follow a standard grid. They, however, did not exceed the amounts spent on formal stops on average. The findings from Figure 23 indicate that, on average, 26% of the drivers spent between 50,000 CFA and 100,000 CFA, and 13% spent more than 100,000 CFA at each stop.

It is estimated that companies may have to pay an additional CFA 2.2 million in informal fees per trip (sometimes referred to as a “motivational fee”) on top of the transit cost (Business in Cameroon, 2023).

The formal and informal stops along the route from Douala or Kribi to N’Djamena significantly impact the cost of transport and the timely delivery of the goods along the corridor. The formal payments to authorities at formal stops and the informal payments to bypass informal stops represent additional expenses for truck drivers, contributing to higher operational costs. As a result, trucking companies need to increase their freight rates to cover these expenses. As reported by the transport companies during the interviews, the additional payments to make on the way can amount to 20% of the standard rate that would be applied for a trip on this corridor and are included in the final price to be paid by their clients. Moreover, the frequent occurrence of these stops (both formal and informal) causes longer transit times, especially when truck drivers spend additional time negotiating with officials or waiting at checkpoints.

Table 13: Number of stops by type of goods transported

<table>
<thead>
<tr>
<th>Types of goods/products</th>
<th>How many times do you stop before reaching your destination?</th>
<th>How many times do you spend to get through these informal stops (n=101)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 – 5 times</td>
<td>6 – 10 times</td>
</tr>
<tr>
<td>Beverages</td>
<td>41%</td>
<td>18%</td>
</tr>
<tr>
<td>Building materials</td>
<td>35%</td>
<td>32%</td>
</tr>
<tr>
<td>Cosmetics and beauty products</td>
<td>44%</td>
<td>28%</td>
</tr>
<tr>
<td>Food items</td>
<td>49%</td>
<td>28%</td>
</tr>
<tr>
<td>Garments and textiles</td>
<td>36%</td>
<td>16%</td>
</tr>
<tr>
<td>Manufactured goods</td>
<td>44%</td>
<td>16%</td>
</tr>
<tr>
<td>Medicines</td>
<td>22%</td>
<td>33%</td>
</tr>
<tr>
<td>Tobacco</td>
<td>56%</td>
<td>-</td>
</tr>
<tr>
<td>Other</td>
<td>33%</td>
<td>25%</td>
</tr>
<tr>
<td>Metals</td>
<td>38%</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>43%</td>
<td>27%</td>
</tr>
</tbody>
</table>

Overall, how much money did you need to spend to get through these formal stops (n=139)

Overall, how much money did you need to spend to get through these informal stops (n=101)

Figure 20: Occasions of interruption of the journey by formal stops

Figure 21: Amount of money spent on official stops

Figure 22: Occasions of interruption of the journey by informal stops

Figure 23: Amount of money spent on informal stops
Warehousing

Along the Douala-N’Djamena-Abéché corridor, storage facilities of all kinds and sizes are available and can be classified into six categories:

• Public storage facilities: The Autonomous Port of Douala (PAD) and the Central African Transport and Transit Organization (COTRAC) provide public storage facilities that are owned and run by the government (Logistics Cluster, 2019a, 2019d).

• Private corporations or individuals owned and run storage facilities (e.g., Bollore Africa Logistics (BAL), SOCATRAF, or SDV).

• Bonded storage facilities: These facilities have received permission from customs officials to hold products that are liable to taxes and duties until they are cleared for import or export. They provide security and convenience to importers and exporters and are often found within the port area or close to the border checkpoints.

• Transit storage facilities: These facilities are used for the storage of goods that are being transported from one country to another without having to pay taxes or customs fees in the destination country. They provide transit operators with tracking and facilitation services and are typically found near border checkpoints.

• Consolidation storage: Used to maximize the efficiency and cost of transportation, these facilities are utilized to consolidate or de-consolidate goods from several origins or destinations. They provide packing and unpacking services to shippers and consignees and are often found close to the port or the major marketplaces.

• Distribution storage facilities are utilized to transfer goods to merchants or ultimate customers to fulfill market demand and save inventory costs. These establishments provide delivery and pickup services to clients and are typically found close to major marketplaces.

In order to gain insights into the predominant locations of the storage facilities and the distinctive features of warehouses along the corridor between Douala and Abéché, a series of interviews were conducted with manufacturers and wholesale traders. As shown during the interviews, manufacturers in Cameroon in general own their warehousing facilities, which have a larger capacity than they usually need for their operations. However, they do not rent their unused storage space to external parties for privacy and security reasons. When asked for the main reasons to find available warehousing facilities for rent in Cameroon, the wholesalers and manufacturers indicated the Douala port, the Douala industrial zone and shopping center, the Kribi port and Yaoundé. There, the warehouses are reported to measure between 300 to 800 square meters, with most of the large capacity warehouses located in the Douala port and the Kribi port, and the Douala industrial zone and shopping center. 3PL managed warehouses are also located in the same areas but mostly concentrated at the Douala port and the Kribi port.

In addition to these insights from the local assessment, it is noteworthy to indicate that the National Cereals Board in Cameroon has a substantial warehouse capacity in the northern regions. The National Cereals Board is the Cameroonian government’s main institution that fights hunger in the three northern regions where the climate is harsh (Business in Cameroon, 2021). The Board was established to stabilize cereal prices by buying surplus during oversupply, storing them and selling them when there is a shortage. It provides around 47,650 metric tons of storage primarily for food, with no access for NGOs and other humanitarian organizations (except for the World Food Program (WFP), which was granted special access to use some of the National Cereals Board’s warehouses located in various areas including Meganga, Maroua, Kousséri, Beka, & Ngaï) (see Appendix 3).

The Cameroon National Shippers’ Council (CNSC) is a government establishment with legal personality and financial autonomy. It provides assistance and protection to shippers with the aim of promoting international trade (CNSC, 2024). The CNSC also operates warehouses in several locations, including Lendi (Kribi, Bassa (Douala), Tiko (South-West Region), Abang-Minko (South region), and Douala Port Authority Zone (see Appendix 4).

Over the years, the information on the DLCA website (updated in 2022) for storage facilities in Chad generally present several discrepancies in standards and working conditions. Notably, the facilities with the most advanced and modern infrastructure (including cold storage) are often found in urban areas like N’Djamena and Abéché. Available storage in Chad can be grouped as follows, based on functions and ownership:

• Commercial storage facilities which are mostly privately owned and can be accessible for rent to interested parties.

• Several humanitarian organizations such as WFP, AIRD, UNICEF and UNCHR operate their storage facilities in Chad. Most of these facilities are located in N’Djamena and Abéché due to the limited availability of private storage service providers in other areas.

• Public organizations like the National Agency for Rural Development Support (ANADER) and the National Food Security Office (ONASS) have storage facilities, which are sometimes made available to humanitarian organizations at low or no cost.

During interviews, Chadian manufacturers and wholesalers identified N’Djamena, Gassi, Farça, Abena and Lamadj as holding the largest number of warehouses available for rent purposes. Farça and Lamadj are districts within the city of N’Djamena (located in the southwestern part of the country, along the Chari River) and are known for their respective markets and bustling commercial areas, making them important trading hubs in the country. Gassi and Abena are also both located within the same region in southwestern Chad, near the Chari River and are both known for their agricultural activities, showcasing the concentration of warehousing facilities in this part of the country.

Figure 24: Warehouses location in Cameroon

Figure 25: Warehouse locations in Chad

Most of the wholesalers interviewed own small warehouses (between 50 to 150 square meters) that they use for their own operations and rent the (limited) unused storage capacity to other organizations (not precisely if they are humanitarian, public, or private sector organizations).

Warehouse management

According to the findings from the interviews, there are two different rental options for warehouses:

• Rent the entire warehouse. The rental price for this option depends on the available handling equipment and the geographical position of the facility. It can vary from 250,000 to 500,000 CFA per month for a 500-square-meter warehouse in Cameroon. In Chad, warehouses of 150 square meters are rented out for up to 350,000 CFA per month.

• Rent a portion of the warehouse space. In Cameroon, prices for this option start at a minimum of 500 CFA per square meter per month at the port of Douala, the Douala central market, the Douala industrial zone and downtown Limbe.
Douala. Warehouses located outside the Douala area can be rented starting from 300 CFA per square meter a month. The material handling equipment available in these shared warehouses belongs to the owner of the warehouse and can be used for a monthly fee to be paid extra. The rate can be per handling equipment or per metric-ton of goods offloaded to or loaded from the warehouse. The estimated price per square meter for this rental option in Chad was not indicated during the interviews.

As indicated by the wholesalers and manufacturers during the interviews, rental prices can increase by up to 50% from November to February, mostly for warehouses located at the Douala port, the Kribi port, and the central market in Douala, due to a higher demand for agricultural products to be stored before being exported by sea. However, rental prices tend to be stable throughout the year for stakeholders leasing for a full year in most locations.

In terms of operations, humanitarian organizations have contracted partners in Cameroon and Chad who are in charge of their warehouse operations management. The 3PL (third-party logistics) partners provide the staff and the material handling equipment and are in charge of all the storage and fulfillment operations. However, the stock management is usually handled by an in-house humanitarian officer. This helps the organizations focus on other humanitarian aid activities, such as program operations, while a dedicated partner handles the organizations warehousing needs and pricing strategies.

The warehouse is managed by a logistics partner, this partner monitors the items for us, and when we need to send something to Chad, we make a request internally and tell them that we’re going to send such and such a quantity to such and such a country. (KII_Humanitarian Partner_Cameroon)

For the private sector actors, both rented and owned warehouses are directly managed by the manufacturers and wholesalers’ own staff. They do not hire a third-party logistics provider (3PL) for their warehousing operations. Stock managers, however, can work with external handling staff for logistic provider (3PL) for their warehousing operations. Stock warehouses are directly managed by the manufacturers.

For the private sector actors (traders, wholesalers and transporters) reported the impact of both the harvest period and the religious celebrations on the availability of warehouse storage space in Cameroon and in Chad.

“...for us at the cooperative, it’s the end of the harvest when we buy, so we put the produce in the shop (warehouse). It’s precisely from October to December that our shop is saturated (KII_Trading Company_Cham)

“...in the rainy season and around the festive season, they are often saturated with products of various kinds. Pharmaceutical products in particular (KII_Trading Company_Cham)

As observed in Table 14, the agricultural harvest period from November to February sees a significant decrease in warehouse availability. This is a crucial time when most of the warehousing facilities are used to store agricultural products for export from Cameroon and Chad and imported crops and food in both countries before they are sold. The private sector interviewees have also noted that there is lower warehouse space availability between December and April due to religious celebrations. The Christmas and New Year holidays (December to January), Ramadan (which occurred in March 2023), Eid, and Easter (both occurring in April 2023) are all periods of high commercial activity in both countries, leading to increased demand for storage capacity in the main cities. These seasonal spikes in demand for warehouse space also significantly affect warehouse rental pricing, which tends to be higher during periods of high demand. This information is crucial for stakeholders to make informed decisions about their warehousing needs and pricing strategies.

Table 14: Utilization rate (%) of the total country storage space estimated per month

<table>
<thead>
<tr>
<th>Country/Month</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cameroon</td>
<td>90%</td>
<td>90%</td>
<td>85%</td>
<td>90%</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
<td>70%</td>
<td>70%</td>
<td>70%</td>
<td>70%</td>
<td>70%</td>
</tr>
<tr>
<td>Chad</td>
<td>85%</td>
<td>85%</td>
<td>80%</td>
<td>80%</td>
<td>70%</td>
<td>70%</td>
<td>70%</td>
<td>75%</td>
<td>75%</td>
<td>75%</td>
<td>75%</td>
<td>75%</td>
</tr>
</tbody>
</table>

SOURCE: FIELD ASSESSMENT (DECEMBER 2021)

Challenges

Various authors observed that the warehouses within the corridor have low storage capacities and lack thermal insulation requirements. In contrast to 40% of the warehouses in Cameroon, just 10% of the warehouses in Chad have cold storage facilities, according to a World Bank Report (2022). The government health authorities are mainly in charge of cold chain storage facilities in Cameroon. For example, the cold chain system has a pyramid structure, with the National Vaccine Store at the top, followed by regional stores, district stores, and health facilities at the base in Chad. The Ministry of Health oversees the country’s cold chain infrastructure.

In 2022, the cold chain capacity was increased with the support of Gavi’s Cold Chain Equipment Optimization Platform (CCEOP), UNICEF, and the Government of Japan. They provided walk-in cold rooms, ultra-freeze appliances, electrical freezers, and solar refrigerators to the central vaccine store, sub-national vaccine depots, 23 provincial vaccine stores, 139 district stores, and 1250 healthcare facilities (UNICEF, 2022). However, it is unclear if these facilities are available for other humanitarian organizations to use. There is also the challenge of an unstable power supply, which hinders continuous cooling, necessitating the need to use generators. Also, there are challenges associated with the last-mile accessibility for cold chain stored materials due to rugged terrains and poor road conditions, with authorities being forced to rely on villagers moving supplies by foot or boat transportation in areas only accessible through rivers (Schumann & Streit-Jutjasa, 2014).

Warehouse automation technologies are still growing in both countries, and there is a lot of interest in adopting them to improve efficiency, speed, accuracy, and safety. Some warehouses in the corridor have already implemented basic automation systems, such as Warehouse Management Systems (WMS) and data collection tools, to optimize their inventory operations and improve overall operational efficiency. Companies like Mærsk have recently invested in technology-driven Warehouse and Distribution Management Systems in Cameroon (The Africa Logistics, 2023). However, the adoption of warehouse management technologies is still low.

Warehouses located in the corridor are associated with various security and safety challenges (theft, pilferage, cargo diversion) but also issues related to accessibility, insufficient monitoring systems and inventory errors, and power supply (World Bank, 2021; Mærsk, 2020; Logistics Cluster, 2019a & 2019c).

These issues pose significant challenges for warehouse operators, who must implement effective strategies and technologies to address these concerns and ensure safe and efficient management of warehouse operations. Addressing these issues is critical to maintaining the integrity of the supply chain and ensuring that goods are transported and stored securely and efficiently.

Customs Clearance

Customs ensure regulatory compliance, facilitate trade between countries, and enhance security in the transportation of goods from one country to another by preventing illegal access to or transfer of substances. Additionally, they serve as a source of revenue for the countries through tariffs and duties. The sections below present the findings related to the customs clearance processes and operations along the Douala-N’Djamena-Abéché corridor.

Cameroon and Chad are both members of the Economic and Monetary Community of Central Africa (CEMAC). The CEMAC was established to promote economic integration, cooperation, and development among its member states. Being part of the CEMAC means that Cameroon and Chad adhere to its common trade regulations and standards, which simplifies the customs procedures and reduces the trade barriers between the two countries. Goods transit within the CEMAC zone is regulated by the CEMAC customs code established in 1987 as the foundation for assimilating goods and services.

The CEMAC customs code is a set of regulations and procedures governing customs operations within the member states of the CEMAC and designed to harmonize customs practices and facilitate trade among the member countries. These regulations typically cover customs valuation, tariff classification, rules of origin, customs procedures, and enforcement measures.

Other regulations and conventions needed to consider when navigating the Douala-N’Djamena-Abéché corridor include:

- The Road Transport Agreement (Conventions en Matière de Transport Routier) signed on 13 April 1999 between Cameroon and Chad strictly governs the transit to Chad through the Cameroon corridor. This agreement defines the framework for all matters related to freight, while transit-related customs issues are governed separately by the CEMAC customs code. The transit agreements include the following provisions:
  - Prohibition of cabotage
  - The principle of traffic distribution in the corridor: 65% for Chadian transporters and 35% for Cameroonian transporters
  - The approved routes for transit flows from Douala or from the railway terminals
  - The principle of single checkpoints that bring together all authorities involved in inspection.
Documentation requirements and processes in Cameroon

In Cameroon, the customs clearance process commences when the importer or their representative requests an Attestation of Verification to Import (AVI) to SGS, the Swiss company responsible for port inspections. This request is accompanied by a comprehensive set of documents, including the Interpretative Document, Bill of Lading or airway bill, final invoice, packing list, freight invoice, insurance certificate, customs clearance number of the cargo manifest, and related technical documents (International Trade Administration, 2021). After submission, SGS grants a final AVI, typically within eight hours, and provides the importer with three copies of the declaration in grey, blue, and yellow (Legacy Export, 2019). The verification process, expected to conclude within six hours, may be extended if there are disputes over taxation or other declared elements. Subsequently, the importer presents these documents to SGS to add a security sticker and a dry stamp on the blue copy, which is then transferred to the bank for deposit. Upon payment, the bank issues a receipt and the blue copy to the importer sends the yellow copy to SGS and retains the grey copy (International Trade Administration, 2021). The final step in the clearance process involves the inspector reviewing the blue copy and receipt, after which a release warrant for the merchandise is issued, completing the clearance process. This step is contingent upon verifying the usage of the imported goods (International Trade Administration, 2021). The duration of the customs clearance process from start to finish could take anywhere from a day (due to CAMCIS implementation) to five weeks, depending on the nature of the goods being cleared (FID, 2021).

It is noteworthy that Cameroon has substantially digitized its traditional customs clearance process, which can be accessed and operated remotely using any digital device with a browser and an internet connection. With the implementation of the Cameroon Customs Information System (CAMCIS), a fully automated, paperless system designed for efficiency and speed, Cameroon has significantly reduced face-to-face interactions and manual document handling. This system enables customs operations to be potentially completed within one day after document validation, reflecting a major advancement in the digitization of customs processes in Cameroon.

Several initiatives have also been implemented to streamline the country’s customs processes and transit operations. To facilitate and secure the transit operations by road and rail for goods imported or manufactured in Cameroon and destined for the Central African Republic and Chad, the customs administration established the implementation of the Unique Transit Title document (TU – Titre de Transit Unique). The Unique Transit Title is to be issued by the customs administration, aims to reduce the hassles experienced by truck drivers and other transporters along the Douala-Bangui and Douala-N’Djamena routes, as well as to reduce transit lead times on the corridors. It is issued for goods intended to be transported to a third country through Cameroonian territory and allows goods to transit through the country en route to other destinations without being subject to import duties and taxes.

This document also offers several advantages to operators, including the digitization of procedures, the reduction of transit times on corridors, the simplification of procedures at transshipment points (Belabo, Ngaoundere, Edéa, etc.), the security of goods in transit for better traceability of cargo splitting operations, the control of road transport means serving as relay for rail, such as trucks, tractor-trailers, trailers, as well as the reduction of transit fraud, and finally, the establishment of goods removal centers for transit.

Another important initiative of the Cameroonian customs system is the NEXUS+ application. NEXUS+ was implemented in Cameroon to facilitate and secure transit operations for goods transported through the country, particularly along designated transit corridors. It was established to streamline customs procedures, enhance cargo security, and improve overall efficiency in transit operations through electronic monitoring of cargoes. Concretely, NEXUS+ works by placing GPS trackers on transport vehicles such as trucks, trailers, or containers carrying goods. These devices continuously transmit location data, allowing real-time tracking of the cargo’s movement along the corridor. The GPS data transmitted by the tracking devices is collected and processed by the NEXUS+ system. Customs authorities can access this information through a centralized platform.
providing them with real-time visibility into the location and status of the cargo as it moves along transit corridors. NEXUS+ enables customs officials to track the progress of cargo shipments, monitor transit deadlines, and ensure compliance with transit regulations. By having access to accurate and up-to-date information, authorities can take timely action to address any issues or delays that may arise during transit. NEXUS+ also facilitates the issuance of electronic visas or documentation at checkpoints along transit routes. This helps streamline administrative procedures and reduces paperwork, allowing for faster clearance of goods at border crossings or transit points. The entry into the corridor is recorded either at Asa for departures from Douala or at Filind for departures from Kribi. The starting point is set in NEXUS+ at these points. The cargo has a deadline to cross the corridor, and the accompanying documents must obtain electronic visas at the checkpoints of Bonis, Ngaoundere, Kouseri, and Toumbou. The GPS trackers are removed at Kouseri or Toumbou border crossings, marking the end of the transit within the Cameroonian side of the corridor.

**Documentation requirements and processes in Chad**

Chad’s Customs Department, Douaré, is characterized by its extensive network covering several districts, 33 full-service offices, 32 border offices, and 58 border control posts. Despite this expansive structure, the free movement of goods and services faces certain limitations. As a member of both the Central African Economic and Monetary Community (CEMAC) and the World Trade Organization (WTO), Chad adheres to various international trade agreements. However, country-specific exceptions and safeguard measures often mitigate the standard external tariff (CET) application (Logistics Cluster, 2019b). In terms of duties and taxes, Chad aligns with the CET of CEMAC but applies different rates for various product categories. Imported goods from outside the CEMAC region are subject to specific taxes, including customs duties, value-added tax (VAT), and excise taxes (Stantec, 2023).

Before importing goods into Chad, specific documents must be filed with the Ministry of Economy, Commerce, and Tourism. These include certificates of origin, phytosanitary certificates, and sanitary certificates, among other regulatory requirements. All documents must be made available in French and accompanied by a notarized, apostilled, or certified copy, if necessary. Documentation requirements and processes vary depending on the origin of the goods, with differences in processing times and fees.

**Customs Duties, Exemptions, and Waivers in Humanitarian Goods**

**Custom duties**

Cameroon and Chad are both members of the Economic and Monetary Community of Central Africa (CEMAC), including six Central African countries. As part of this economic union, they adhere to the Common External Tariff (CET) which standardizes customs duties across member states.

In Cameroon, the general duties applicable to imported goods include customs duties, an inspection tax by SGS, Value Added Tax (VAT), Precompte, and CAC (Centimes et al.) (WFP, 2022). The custom duty rates are categorized based on the type of imported goods: primary necessary goods at 0%, raw materials and equipment at 10%, intermediary and miscellaneous goods at 20%, and fast-moving consumer goods at 30% (International Trade Portal, 2023).

On the other hand, Chad’s customs process is marked by the invocation of a more structured, predictable system, following the TEC more closely. In Chad, the general customs clearance process includes several steps, such as the submission of documents, classification of goods, and payment of duties and taxes. Chad imposes additional taxes, such as excise taxes on luxury products, alcoholic beverages, tobacco, and new automobiles, a 2% statistical tax, and other levies in line with CEMAC legislation (Stantec Bank Trade Club, 2013).

Adopting TEC under CEMAC has streamlined specific aspects of the customs processes in both countries, ensuring consistent tax rates across the region. However, individual country-specific measures and exceptions, as seen in Chad, indicate that while regional policies provide a framework, national discretion in customs procedures and tariffs play a significant role. One notable difference between the two countries is the implementation and enforcement of these customs duties and taxes. Cameroon appears to have more uniform and predictable systems, following the TEC more closely. In contrast, Chad’s customs process is marked by the invocation of exceptions and safeguard measures, which suggests a more flexible and perhaps less predictable system.

**Exemptions and waivers in Humanitarian goods**

The CEMAC customs clearance procedure does not consider special treatment for operations related to humanitarian action. Therefore, the customs clearance process for humanitarian goods in Cameroon and Chad is shaped by their respective laws and international agreements, reflecting a balance between regulatory compliance and facilitating humanitarian assistance. Both countries, however, recognize the special status of humanitarian goods, offering procedures for exemptions and waivers from standard customs duties and tax (Logistics Cluster, 2019a, 2019c). These exemptions must be requested from the Ministries of Finance and the Directors General of Customs in Chad and Cameroon. The requests must be submitted before the import as the procedures take quite a long time to complete.

In Cameroon, United Nations (UN) agencies are exempted from all import/export taxes, including VAT, per their agreement with the government. However, even for each import or export, requires a waiver from the Ministry of External Relations and the Customs headquarters in Yaoundé. Humanitarian goods imported by NGOs can have a total or partial exemption from duties and taxes based on agreements with the Cameroonian government. To obtain exemptions and waivers in Cameroon, humanitarian organizations must first sign an agreement with the Cameroon government to operate in the country, which is also necessary for customs duty exemptions. This involves a detailed application process to MINAT (Ministère de l’Administration Territoriale et de la Démarchialisation) and MINDEFEX (Ministère des Relations Extérieures) (Logistics Cluster, 2022). For UN agencies, the criteria include the agency’s status and the specific agreements with the government. For NGOs, the criteria encompass the organization’s legal status, the extent of its activities, and the commitment of its representative in Cameroon. Registration on the NGO directory is required for exemption, which is possible after three years of activity in the country. This mechanism is reevaluated annually to ensure the NGO’s continued compliance.

In Chad, humanitarian organizations must first sign an agreement with the Cameroon government to operate in the country. The Ministry of Finance of Cameroon must be approached upstream of the clearance procedure to obtain:

- Waiver of T1 bond or, failing that, moral bond;
- Waiver of GPS tracker installation;
- The benefit of the NEXUS sticker procedure to bypass constraints related to the tracker.

NGOs and UN Agencies not part of CEMAC and importing goods in Chad can also receive total or partial exemptions of duties and taxes according to Article 332 of the CEMAC Customs Code (Logistics Cluster, 2019b). For UN agencies in Chad, a letter of understanding regarding duties and tax exemptions must be signed for each import. This request is submitted to the Ministry of Foreign Affairs and African Integration. NGOs operating in Chad must sign a draft agreement with the Ministry of Economy and receive approval from the Committee for the Coordination of the Activities of NGOs (CCIA) and the Ministry of the Interior. The renewal of this agreement is based on a review by the Ministry of Planning and Economy’s NGO Oversight Committee (DONK) (Logistics Cluster, 2019c). The criteria for UN agencies include the specific project details and the agency’s status. For NGOs, criteria include the organization’s reason for working in Chad, legal status, rules and regulations, documentation of activities in other countries, and the specific project details that must be approved by the relevant ministry and customs department. The project’s alignment with Chad government policy, technical feasibility, and viability are also assessed (Logistics Cluster, 2022). The Ministry of Finance of Chad must be approached upstream of the clearance procedure to obtain:

- Issuance of T1 with a bond waiver or, failing that, with a moral bond;
- Agreement on the direct removal procedure;
- Waiver of bonds for these direct removals;
- Waiver of customs escorts.

In both Cameroon and Chad, some goods may be subject to special authorizations demanded for their importation. These may include, for example:

- Medicines requiring prior authorization from the Ministry of Health;
- Certain plant products and other edible products for which prior approval from the Ministry of Agriculture is required, such as through a phytosanitary certificate;
- Canned products of animal origin and other products of the same origin requiring authorization from the Ministry of Livestock;
- Weapons and ammunition requiring approval from the Ministry of the Interior;
- Telecommunications devices requiring authorization from the Ministry of Posts and Telecommunications.

Transit is carried out via caution bonds. The bond in question must normally be issued by a bank listed in the official listing approved by the Ministry of Finance. However, exemption requests may be addressed to the Ministry of Finance, which can issue an exemption grant:

- A Fraternal bond;
- A Consular bond;
- A Moral bond;
- A Waiver of bond.

**Regulatory Changes and Impact on Supply Chain Operations**

The Douala-N’Djamena-Abéché corridor, a vital supply route between Cameroon and Chad, has undergone significant changes due to new customs regulations, profoundly impacting supply chain operations. The extension of the Pre-Shipment Conformity Assessment (PCA) Program to all imported goods by SGS (2022), marks a pivotal regulatory shift. Initially focused on regulated products, the PCA’s expansion to encompass all goods has increased regulatory oversight, necessitating adjustments in compliance strategies for businesses and humanitarian organizations alike.

This change aligns with a global trend towards heightened regulation in import-export sectors, echoing similar initiatives in Morocco and Kenya.

Additionally, Maersk (2020) highlights another critical regulatory shift: the Cameroon Customs Information System (CAMSICS) implementation, which mandates detailed information for all vehicles shipped into Cameroon. This regulatory oversight, effective January 2020, requires precise details such as chassis number and vehicle model. Such stringent data requirements signify a move towards more robust regulation and monitoring, essential for better tracking, taxation, and control of imported vehicles, a key component in humanitarian logistics.
Furthermore, the International Trade Administration (2021) underscores the introduction of the “Single Window for Foreign Trade Operations” (GUCE) at the Port of Douala. Although its implementation has been uneven, GUCE’s potential to streamline customs procedures could significantly influence transit times and operational efficiency along the corridor. This system combines services from various agencies, aiming to reduce import and export procedure times, a critical factor for the timely delivery of humanitarian aid.

As confirmed during the interviews, the changes made to the customs regulations also have a limited impact on the travel time in the corridor, as estimated by 48% of the interviewed drivers. The estimated impact is more important on the routes that lead to the Kosséri border point than on the routes going to the Toubo border point. According to the truck drivers, this is because the Kosséri border point is more staffed, which means more officials to rigorously verify and ensure that the new regulations and/or procedures are followed. These thorough verifications tend to take longer and cause extended waiting times at the border.

**Figure 28: Impact of the change in customs regulations in common routes**

To what extent do changes in customs regulations impact on the duration of the journey?

<table>
<thead>
<tr>
<th>Impact</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overall</strong></td>
<td>52%</td>
</tr>
<tr>
<td><strong>Cameroon</strong></td>
<td>24%</td>
</tr>
<tr>
<td><strong>Chad</strong></td>
<td>11%</td>
</tr>
<tr>
<td><strong>KRI-BEJA</strong></td>
<td>59%</td>
</tr>
<tr>
<td><strong>Korupu</strong></td>
<td>24%</td>
</tr>
<tr>
<td><strong>Garoua</strong></td>
<td>10%</td>
</tr>
</tbody>
</table>

**Figure 29: Cost of vehicle inspection at border point**

How much do you expect to pay to go through Customs?

<table>
<thead>
<tr>
<th>Cost Range</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nothing</strong></td>
<td>15%</td>
</tr>
<tr>
<td><strong>1,000 CFA</strong></td>
<td>8%</td>
</tr>
<tr>
<td><strong>5,000 CFA</strong></td>
<td>10%</td>
</tr>
<tr>
<td><strong>25,000 CFA</strong></td>
<td>36%</td>
</tr>
<tr>
<td><strong>50,000 CFA</strong></td>
<td>48%</td>
</tr>
<tr>
<td><strong>100,000 CFA</strong></td>
<td>5%</td>
</tr>
<tr>
<td><strong>More than 1,000,000 CFA</strong></td>
<td>1%</td>
</tr>
</tbody>
</table>

**Figure 30: Amount of the informal payments made at customs**

Excluding the cost of official tariffs, how much do you expect to pay to go through Customs?

<table>
<thead>
<tr>
<th>Amount Range</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nothing</strong></td>
<td>15%</td>
</tr>
<tr>
<td><strong>1,000 CFA</strong></td>
<td>8%</td>
</tr>
<tr>
<td><strong>5,000 CFA</strong></td>
<td>10%</td>
</tr>
<tr>
<td><strong>25,000 CFA</strong></td>
<td>36%</td>
</tr>
<tr>
<td><strong>50,000 CFA</strong></td>
<td>48%</td>
</tr>
<tr>
<td><strong>100,000 CFA</strong></td>
<td>5%</td>
</tr>
<tr>
<td><strong>More than 1,000,000 CFA</strong></td>
<td>1%</td>
</tr>
</tbody>
</table>

**Figure 31: Estimated time required for customs clearance formalities on a typical day**

What is the estimated time you spend on formalities at the border?

<table>
<thead>
<tr>
<th>Time Range</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 to 2 hours</strong></td>
<td>36%</td>
</tr>
<tr>
<td><strong>2 to 5 hours</strong></td>
<td>30%</td>
</tr>
<tr>
<td><strong>6 to 11 hours</strong></td>
<td>4%</td>
</tr>
<tr>
<td><strong>12 to 23 hours</strong></td>
<td>9%</td>
</tr>
<tr>
<td><strong>24 hours and more</strong></td>
<td>7%</td>
</tr>
</tbody>
</table>

**Source:** Field Assessment (December 2022)

The average time required to inspect the vehicle and clear the goods was assessed during the truck drivers’ interviews. It appears from the outcomes of the interviews that most of the drivers (78% at the Cameroonian border and 74% at the Chadian border) estimate less than 6 hours as the time required to complete their customs clearance process. The significant difference between the time required for customs formalities (less than 6 hours for more than 75% of the border crossing trucks) and the overall time spent by the truck drivers at the border points (estimated at 4 to 7 days) mainly waiting for their turn in the customs process likely indicates several points of inefficiency at the border crossing points.

However, the Cameroonian side of the border seems to have a more rapid clearance process as 48% of the drivers interviewed on that side spend less than 2 hours on customs formalities, against only 36% of the drivers at the Chadian border. A few drivers on the Cameroonian side reported positive changes related to improved technology such as pricing and customs software which fastened up the clearing process and improved the efficiency of customs clearance.

“...In the meantime, for example, there has been a change in IT tools, the configuration of which has made procedures more flexible...”

(KI_ClearingAgent_Cameroon)

Customs Clearance Lead times and Fees

All the vehicles arriving at the border points must be inspected by the police and the customs officers before crossing the borders into new jurisdictions. The driver of the vehicle must know, at that moment, if the goods have been customs-cleared or if they are exempt and must be able to provide all the supporting documentation required. Among the truck drivers interviewed during this assessment, 49% handled clearing independently, 48% used border-point clearing agents, and 3% were small-scale transportation operators freely or picking consignments for cross-border movement.

The humanitarian organizations interviewed confirmed that they often relay on carriers and forwarding agents to handle their customs formalities. The responsibility for customs clearance varies based on their agreements with the carriers and the destination countries for the goods.

The products (humanitarian goods) are exempt, but when you want to export, there is a formality to be completed by the carrier. The humanitarian organizations interviewed confirmed that they often rely on carriers and forwarding agents to handle their customs formalities. The responsibility for customs clearance varies based on their agreements with the carriers and the destination countries for the goods.

The amount to pay at the customs point typically covers various aspects of customs clearance, including the inspection of the goods (vehicle inspection fee) and any associated administrative fees (the customs clearance fee, which covers the administrative costs associated with processing the shipment through customs, duty and tax depending on the value and nature of the goods, potential additional charges such as penalties in case of non-compliance in the documentation or the procedure, etc.)

As reported by the truck drivers during the interviews, the amount to pay for the vehicle inspection fee varies widely across the different borders, going from zero to more than 1,000,000 CFA (Figure 29). This can be explained by the fact that the amounts that are charged for inspection fees depend on the type and nature of the goods being transported (goods that are considered high-risk or require specialized handling may incur higher inspection fees) and also on the quantity and value of the goods being transported (larger shipments or high-value goods may require more extensive inspections, leading to higher fees). However, it can also be a consequence of the inconsistencies in the enforcement of inspection fees at border points. As shown in Figure 30, the additional informal payments that the truck drivers usually need to make during their customs clearance process can be as high as the formal tariffs. This can lead to wide variations in reported amounts, as some drivers may pay lower fees through negotiation or corruption while others adhere to official fee structures.
Challenges and recurring issues

Several challenges and issues have been documented on the customs processes in Cameroon and Chad. These challenges include sluggish customs clearance processes and inland terminal operations, representing over 50% of the total logistics cost along the corridor, as Frederic et al. (2021) analyzed. Customs clearance alone takes about 35 percent of the total estimated goods transit time between the Douala port and N'Djamena by road or rail (Pelletier & Alix, 2016), leading to an extra 30% increased cost of essential products in N'Djamena than in other Cameroonian cities.

Another challenge mentioned by the humanitarian organizations during their interviews is the long waiting times for the approval of the documents that are necessary to be able to ship the goods arriving in Cameroon locally (within the country) or to another country of the CEMAC region. This can reportedly take several weeks, hindering the timely response to critical humanitarian needs.

"The loss of time is often linked to administrative procedures at the border. In Cameroon, for example, before goods purchased locally can be shipped, a letter must be sent authorizing the shipment or export of these goods to Chad or the Central African Republic" (Kil_Humanitarian Partner_Central and West Africa).

Humanitarian organizations often encounter long and complicated bureaucratic procedures when obtaining duty waivers and tax exemptions, which can delay the customs clearance process. This involves presenting numerous documents to various government agencies, which can be time-consuming and frustrating (Doing Business, 2020).

During the interviews with the humanitarian organizations regarding the customs processes on this corridor, one respondent especially highlighted the challenges related to the release of the containers upon their arrival at the Port of Douala. Multiple parties, such as dockers and financial intermediaries, are involved in the process to follow in order to obtain all the necessary authorizations during the customs clearance procedure. This complexity of the process and causes considerable delays in obtaining the approval of the documents required to collect the cargo from the port. This is particularly observed for large shipments.

In addition to the lengthy port operations and container release procedures, the transports interviewed also highlighted the impact of the heavy administrative procedures at border crossings on transit time.

"Clearance isn't easy because they (transporters) need authorization. The dockers will take the goods and put them on other lorries, and when they’ve finished their work, they’ll be paid, so they won’t have to wait for a transfer" (Kil_Humanitarian Partner_Cameroon).

Figure 32: Estimated time required for customs clearance formalities on a busy day

1 TO 2 HOURS
6 TO 11 HOURS
2 TO 5 HOURS
12 TO 23 HOURS
24 HOURS AND MORE
21%
21%
18%
18%
19%
25%
13%
13%
13%
19%
6 TO 11 HOURS
12 TO 23 HOURS
24 HOURS AND MORE
CAMEROON BORDER SIDE
CHAD BORDER SIDE
SOURCE: FIELD ASSESSMENT (DECEMBER 2023)

Similar to the variations on the transport lead times throughout the year, the customs clearance lead times are also subject to variations during certain times of the year.

The period between October and January has been identified by the truck drivers as being the busiest period at customs checkpoints on this corridor. Although it was not precisely indicated what caused the peak of activity at the customs points in that period, it is shown in Figure 32 that the time spent on customs clearance procedures increased for the Chadian side of the border, between October and January, which confirms that they spent less than 6 hours to complete the customs clearance process. On the other hand, on average, 18% of the drivers on both sides of the border reported that the customs clearance process took them more than 24 hours at the border crossing point. They are only 8.5% on average to experience such a long clearance lead time during the rest of the year, as displayed in Figure 31.

The high volume of shipments and limited resources available for customs processing, combined with a relatively low level of digitalization in the customs procedures (administrative verifications and compliance checks), cause trucks to wait for a long duration of time in a queue before they can undergo formalities.

Figure 33: Issues faced at border points

For each of the problems, please indicate how much of a barrier it is to the border post.

ISSUES RELATED TO THE RULES OF ORIGIN (CERTIFICATION, CONFLICTING REQUIREMENTS, LACK OF CLARITY)
15% 37% 29% 19%
ISSUE RELATED TO CLASSIFICATION OF GOODS BY CUSTOMS (HS CODE)
19% 44% 28% 8%
TECHNICAL BARRIERS TO TRADE SUCH AS PACKAGING REQUIREMENTS AND TESTING
16% 45% 26% 13%
CORRUPTION DURING THE GOODS CLEARANCE PROCESS
18% 45% 25% 12%
LACK OF CAPACITY OF CUSTOMS OFFICES
25% 40% 20% 14%
FOOD SAFETY/INSURANCE REQUIREMENTS
22% 44% 19% 16%
COMPLEX VARIETY OF DOCUMENTATION REQUIRED TO CLEAR GOODS THROUGH CUSTOMS
22% 43% 19% 16%
LENGTHY OF COSTLY CUSTOMS CLEARANCE PROCEDURES
22% 64% 13% 13%
LACK OF INFORMATION ON THE OFFICIAL PROCEDURES OR CHARGES FOR CLEARING GOODS THROUGH CUSTOMS
28% 46% 13% 13%
NOT A BARRIER
MIXED BARRIER
SEVERE BARRIER
MIXED BARRIER
SOURCE: ASSESSMENT OF THE DOUALA-N’DJAMENA-ABÉCHÉ CORRIDOR (2023)

As displayed in Figure 33, over 70% of the truck drivers interviewed have also confirmed that they face many challenges at the border crossings.

The most impacting hurdles are related to the various certificates and compliance requirements (rules of origin, classification codes used, sanitary and phytosanitary requirements, etc.) that are asked for at the border points. Truck drivers may need to navigate through a maze of paperwork, which can be overwhelming, especially if they are not familiar with the specific requirements of each type of goods. This can lead to delays at border crossings, as truck drivers may need to wait for a thorough verification of the documentation before the goods are cleared or provide additional documentation to satisfy regulatory authorities. Failure to meet the regulatory requirements can result in consequences such as fines, delays, or even seizure of the goods transported.

Corruption is one of the most commonly reported issues in Cameroon’s customs process. A report by Cameroon’s National Anti-Corruption Commission (CONAC) ranked the customs agency as the most corrupt in the country between 2010 and 2015. Customs officials were found to engage in corrupt practices, such as extorting traders from declaring imported goods and under-reporting revenue, leading to substantial economic losses and security risks (UNCTAC Africa, 2019). The lack of integrity and transparency leads to delays, increased costs and potential exploitation by criminal elements, undermining the effectiveness of humanitarian efforts. Corruption during the clearance process has also been flagged by the truck drivers who were interviewed as one of the main challenges on this corridor. Truck drivers may encounter demands for bribes or unofficial payments in exchange for expedited processing or the avoidance of bureaucratic hurdles. This can result in prolonged waiting times at the border crossings for those who do not agree to it, leading to delays in goods delivery. Corruption also adds to the operating costs of the truck drivers and transportation companies. The demands for bribes or unofficial payments represent additional financial burdens that drivers and transporters may be forced to bear, which increases the cost of transportation on the corridor. The customs officials that were interviewed confirmed that the fraudulent practices during the customs clearance process are a major contributor to the challenges faced during transit in the Douala-Abéché corridor.

The interviews with customs officials also highlighted the ambiguity of the customs clearance rules as an important hurdle affecting the transit time of the goods. This point was raised as well by the truck drivers during their interviews. Fifty-nine percent (59%) of the truck drivers interviewed complained about the “Lack of information on the official procedures or charges for clearing goods through customs” and 62% identified the “Complex variety of documentation required to clear the goods through customs” as being a moderate to severe barrier along the corridor.
Shipment planning

This section aims to provide insights into the different planning horizons and the information that can be required by the service providers to facilitate the supply chain planning on the Douala-Abéché corridor.

The planning horizon is quite different from one actor to another. As indicated during their interviews, the humanitarian partners usually have a yearly planning of their shipments along this corridor and notify their transport service providers at least 2 months in advance of each shipment. The humanitarian organizations in Chad reported that their ability for effective planning was influenced by factors such as the type of the project, the management protocols available for transportation, their knowledge of the target population, and their average monthly consumption of the goods to be shipped.

“You also must have good forecasting and good planning so that you have better visibility in terms of finance. You’ll know when the project will be approved and validated, so you can place your order without any financial barriers” (KII_Humanitarian_Chad)

Manufacturers mostly have a quarterly planning and monitor their own fleet, which usually provides sufficient capacity for their own shipments during normal times. However, a few manufacturers that operate in food processing and furniture outsourcing up to 20% of their transportation needs to respond to higher demands from October to January.

International traders and agricultural producers tend to work with a yearly shipment plan, which is mostly active during the harvest period, between October and January. Wholesalers do not have a clear shipment plan, as they mostly respond to the demand of clients. Additionally, their inbound and outbound shipments also depend on product prices in the market, even though food products and agricultural produce are shipped to Chad on a more regular basis. This absence of shipment planning on their part can cause shortages when there is an unexpectedly high demand from consumers.

“We work with wholesalers at the market, and we can’t plan anything. We can’t plan for product shortages or anything like that. Sometimes if demand is a little high, there’s a shortage, and if demand is a little low, there’s a surplus” (KII_Wholesaler_Chad)

Transport companies highlighted the importance for them to have enough information on upcoming requests to aid in their planning. They revealed that they prefer to work with customers who have a clear planning of their shipments. They are willing to reserve their fleet occasionally for their most frequent and privileged customers, which usually are manufacturers, international traders and producers, as they have a yearly calendar that mostly does not change. The transport companies also confirmed that they prefer to work with private sector clients who usually pay up to 90% of the cost before the shipment (the remaining 10% is paid up to 15 days after delivery of the consignment). In terms of notification delays, the carriers indicate that they wish to receive the transport orders one or two months in advance so that they can reserve the trucks and manage their own fleet or, in case they do not have enough capacity internally, outsource the trucks from other transporters in advance. They generally receive booking requests from large companies a month in advance, and 90% of those transport bookings made at least one month in advance are not delayed.

Recommendations

The following recommendations are based on the findings of the local assessment in Cameroon and in Chad, combined with the information and data gathered from the literature and past reports on the corridor. The recommendations are targeted at organizations and the two governments and are summarized below:

Recommendations to Governments

Improvement of the infrastructure

1. Both countries must recognize the corridor’s strategic importance and take bold and decisive action to prioritize its reconstruction and maintenance. They must take the lead and confidently initiate actions while seeking the necessary financial and technical assistance from the development partners.

2. To cater to the increasing demand and seasonal fluctuations in road transit, extending the railway network from Ngaoundere to N’Djamena is recommended as an alternative to complement the inaccessibility of roads in certain regions and times.

3. The Port of Kribi has demonstrated consistent growth and holds significant untapped potential. We strongly recommend that the government of Cameroon, along with the port operating partners, invest in enhancing the port’s infrastructure and technology to elevate its capacity and efficiency, ultimately aiming to match the capabilities and capacities of the Port of Douala. By prioritizing automation and advanced technological solutions, the Port of Kribi can streamline operations, optimize resource utilization, and contribute significantly to alleviating congestion at the Port of Douala and bolster Cameroon’s maritime trade capabilities.

4. In addition to providing transport infrastructure such as roads, bridges, and, if possible, rail tracks to encourage intermodal and heavy-duty freight movement, it is also important to create fuel and maintenance parking hubs for freight operations along the road.

5. Collaboration between governments and the private sector is essential for addressing the challenges of the ageing truck fleet. Governments can engage in Public-Private Partnerships (PPPs) with private sector stakeholders to jointly develop and implement programs for fleet renewal.

6. There may be opportunities to optimize the composition of the transport fleet to better align with the cargo composition and traffic patterns at the port. Governments and industry associations can collaborate to collect and share data on cargo flows, traffic patterns, and fleet composition to better understand transportation needs and develop targeted solutions. This underscores the importance of data-driven decision-making in transportation planning and logistics management in general.

7. The Chadian government should invest in upgrading the facilities and equipment at the N’Gueli Dry Port to increase its capacity and improve its operational capabilities. Specifically, the port should be modernized to accommodate larger volumes of truck traffic. Such upgrades would facilitate more efficient trade and commerce and also help to enhance the country’s economic growth. In line with this, the government should also support Chadian transporters in taking advantage of the 65% cargo quota allocated to them, which they have been unable to use due to capacity issues.

8. It is important to investigate other transportation options within the area. One potential solution is to explore the possibility of year-round navigation along the Logone and Chari rivers. This would complement the current road and rail capacities and ensure the transportation network is efficient and diversified.

Assessment of the Douala-N’Djamena-Abéché corridor
2. The customs systems of the two countries need to be improved, simplified, and connected. The manual processing of customs operations should be discouraged, and instead, automated systems should be used wherever possible. The number of control points within the corridor should be reduced by having a single point where all the administrations assemble transit goods. This will make the process more efficient and reduce the time and effort required for customs clearance.

3. Corruption has been identified as a major factor affecting the entire system’s integrity. At the same time, illegal taxes and extortion have increased the cost of goods and services within the corridor. To ensure smooth trade flows within the corridor, governments must act against corruption, illegal taxes and duties, extortion, and other trade barriers. The governments of both countries should work together to eliminate informal checkpoints along the corridor and implement more robust enforcement measures to facilitate trade. They should make every effort to eliminate checkpoints for sealed goods in transit to Chad, except at the borders and in weighing stations. By addressing these issues, governments can promote a fair and transparent trade environment that benefits all stakeholders.

**Enforcement of laws and anti-corruption initiatives**

**Operational recommendations to organizations**

**Integration of seasonality in supply chain planning**

1. This report has shown high fluctuations in the availability, capacity and pricing of transport and warehousing services throughout the year, depending on the weather seasons, the events and the trade activity along the corridor. It has also highlighted a seasonal extension of the transit and customs clearance lead time. These insights must be leveraged by humanitarian organizations for more accurate planning of their supply chain in order to improve the efficiency of the humanitarian response in the region.

2. The period between July and September is the most complicated period to navigate the corridor, with July and August being the most difficult months due to long heavy rains that seriously deteriorate the road conditions. It is advised that humanitarian organizations incorporate this information into their supply chain planning by minimizing their shipments and transit along the corridor during these months whenever possible. In cases where transit is unavoidable, humanitarian organizations should anticipate the additional delays and factor them into their operational timelines to ensure the timely arrival of goods at their destination points.

3. The transport prices in the corridor tend to be at their lowest between February and May and at their highest between July and September. This information can be leveraged by the transport sector in their supply chain planning to optimize their shipments when the prices are at their lowest and increase the cost efficiency of their operations.

4. December, January and the months of Ramadan and Eid are also busy in the corridor with increased leads times and less transport availability due to the high demand and increased traffic in the corridor related to the religious celebrations that occur during those periods. To address these seasonal fluctuations effectively, it is recommended for humanitarian organizations to adjust their supply chain strategies accordingly by scheduling most of their shipments and deliveries outside peak religious periods, prioritizing only critical shipments during periods of heightened demand and ensuring that the system is organized and equipped to handle these peak seasons. The extended transit lead times during these periods must also be incorporated into the supply chain planning process to ensure a more accurate estimation of goods availability date at the destination point.

5. Similar to the seasonality observed in the availability and the efficiency of transport activities, the availability of warehousing facilities also varies throughout the year. It becomes more difficult to find available space in the corridor between November and April. Organizations are advised to forecast their storage requirements early enough to secure adequate space before the high demand period.

6. As rental prices are generally stable throughout the year for full-year leasing contracts, it is recommended that Humanitarian Organizations do an annual planning of their storage needs, assessing the required warehouse space for the entire year and securing annual rental contracts accordingly. Reinforced inventory management practices are also encouraged to avoid peak inventory levels, ensuring the inventory fits within the rented warehouse space throughout the year. Collaborating with other stakeholders in the corridor, including pooling resources with other humanitarian organizations or manufacturers that have extra availability, may help optimize storage capacity.

7. Humanitarian organizations can explore collaborative supply chain planning initiatives to leverage synergies, reduce redundancies, and ultimately enhance the overall performance of the corridor logistics network.

8. A summary calendar of the fluctuations in the availability and the prices of transport and warehousing services is good practice. This calendar is considered for supply chain planning is presented in the following table:

<table>
<thead>
<tr>
<th>Table 15: Calendar of transport and warehousing availability and prices fluctuations along the corridor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
</tr>
<tr>
<td><strong>Busy month on the corridor due to Christmas and NY celebrations. Longer transit times</strong></td>
</tr>
<tr>
<td><strong>transport prices in the corridor tend to be at their lowest between February and May and at their highest between July and September.</strong></td>
</tr>
<tr>
<td><strong>Transport modes and routes selection</strong></td>
</tr>
</tbody>
</table>

**Humanitarian organizations can streamline their logistics operations,**
Mitigation of security issues

1. Security concerns are one of the main challenges in the corridor. Incidents such as assaults on drivers, kidnappings, and attacks by armed groups are not rare. Organizing the transportation of goods in convoys, accompanied by trained security staff, can help mitigate the security risks. Strengthening the relationship with security personnel through clear communication protocols would help enhance the safety of those humanitarian convoys. It is also recommended that humanitarian organizations invest in conducting regular security assessments along the corridor to identify and address the potential risks that might affect the efficient delivery of goods.

2. Organizations should add as a mandatory requirement for their contracted 3PLs to implement stock monitoring systems and automation technologies to help improve warehouse management and reduce the risks associated with theft and pilferage regardless of ownership.

3. Organizations should foster public-private partnerships, particularly with government agencies in Chad, to mutually enhance storage capacities. In this collaborative effort, organizations can assist in the adoption of warehouse automation and other pertinent technologies for government-owned warehouses, thereby optimizing storage capacities for both parties involved. In return, they would have access to public warehousing storage space. Such partnerships will yield benefits in both directions, strengthening warehousing capabilities and facilitating efficient storage management.

4. Alternatively, organizations could also consider sharing warehouse and storage facilities with their counterparts that have similar needs to improve efficiency and reduce overhead costs. They could also explore joint ownership, long-term leasing, or outright purchasing, whether along the corridor or at the last mile level. Adopting these approaches can result in significant cost savings, greater operational flexibility, and improved productivity.

5. A joint task force comprising government agencies and affected organizations could be formed and serve as a think tank to identify and implement measures to enhance the flow and movement of goods along the corridor. This task force could support the creation of a ‘safe transit corridor’ in partnership with the governments of Cameroon and Chad and help address the corridor’s transit challenges. The ‘safe transit corridor’ would have all the required facilities, security measures, and support for a safe and efficient transit of goods within the corridor.

6. Organizations operating within the corridor should offer technical assistance and support to Customs and other agencies operating within the corridor, such as capacity building and modern equipment and facilities, to enhance the efficiency of their operations and overall productivity. It is recommended that organizations include this support as part of their initial project proposal, as donor regulations may prevent them from doing so later if it was not included from the beginning.

7. Humanitarian organizations could advocate with WCO and IMPACT to facilitate the creation of a comprehensive customs clearance guide for the transit and importation of humanitarian relief items from Cameroon to Chad. This manual would provide humanitarian organizations with information on the laws, regulations, procedures, standards, and practices related to customs in Cameroon and in Chad. It would also provide practical guidance and recommendations on how to comply with the transit requirements between Cameroon and Chad and the import requirements in Chad. This work could be done in collaboration with cross-border agencies through dedicated workshops.

Collaboration with public and private sector entities

4. Customs codes in Cameroon and Chad do not consider a special treatment of humanitarian goods. There are, however, several exemptions and waivers that can be granted to humanitarian organizations, though the application process can be complex and fastidious. It is recommended for humanitarian organizations to approach relevant government entities (as listed in the report) and verify what exception they are eligible for, how to apply for it and how long the process might take.

5. A joint task force comprising government agencies and affected organizations could be formed and serve as a think tank to identify and implement measures to enhance the flow and movement of goods along the corridor. This task force could support the creation of a ‘safe transit corridor’ in partnership with the governments of Cameroon and Chad and help address the corridor’s transit challenges. The ‘safe transit corridor’ would have all the required facilities, security measures, and support for a safe and efficient transit of goods within the corridor.

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The Douala-N'Djamena-Abéché corridor serves as a critical lifeline for both trade and humanitarian aid distribution in Central Africa. Timely and reliable access along this route is essential for humanitarian organizations to reach vulnerable populations with life-saving assistance, including food, shelter, medical supplies, and other essential provisions. Beyond its role in humanitarian aid, the corridor facilitates the movement of goods and commodities between Cameroon and Chad, contributing significantly to regional trade and economic development. It serves as a conduit for imports and exports, fostering commerce and exchange between the two countries and beyond.

Despite its importance, the corridor faces numerous challenges, including inadequate infrastructure, bureaucratic hurdles, corruption, security risks, and seasonal disruptions due to weather conditions.

While long-term efforts to improve infrastructure, streamline border procedures, and enhance security measures present opportunities to enhance the corridor’s efficiency and resilience, understanding the intricacies of the transport, warehousing and customs clearance operations along the corridor is essential for more accurate planning of the supply chain.

This operational assessment has highlighted some of the already known challenges along the corridor. It has also shed light on lesser-known hindrances and identified opportunities for improvement or at least alleviation of the impact of the hurdles faced by supply chain operators.

The bad road conditions are one of the main problems of this supply chain corridor. Though several routing options are available to go from Cameroon to Chad, the roads in general, in deplorable state, which significantly impacts the lead time, the fleet and goods transiting along the corridor. The security concerns in some regions, especially in the northern part of Cameroon, also forced transport providers to avoid certain itinerary options and pose a security risk to all goods and people transiting along the way.

The railway, with its ongoing upgrade projects supported and funded through public-private partnerships, emerges as a good alternative to the road, with relatively comparable lead times, fewer security concerns, more affordable pricing and lower environmental impact.

The seasonal impacts of weather changes and social events in Cameroon and in Chad have proven to not only increase the transit lead times, but also negatively affect the availability and the cost of supply chain assets (mainly transport and warehousing) along the corridor. These cyclic disruptions must be integrated into the supply chain planning of all the organizations to ensure timely delivery of goods and sufficient capacity to meet their (storage or transportation) needs.

The warehousing facilities along the corridor are not quite sufficient compared to the demand, especially when it comes to temperature-controlled storage. Though warehouse facilities in Cameroon can generally be large, the options in Chad are quite limited. Warehouse automation technologies and inventory management systems are still rarely adopted. Organizations can, on that matter, consider a collaboration with government entities to support the technological and operational upgrade of the existing warehouse offering while gaining access to government-owned facilities.

Customs are also a challenging part of the corridor. The length and complexity of the customs processes are a burden to all the supply chain actors along the corridor. While there is no clear operational solution to be implemented, being familiar with the customs regulations and the specificity of each country helps anticipate some of the issues and make the clearance process smoother. Humanitarian organizations are also eligible for various exemptions that can be requested from government entities, through the procedures are lengthy and cumbersome.

Recent improvements, especially in the digitization of parts of the clearance processes, have shown a positive impact on the lead time of the customs clearance procedures in Cameroon and have proven a path towards a more transparent and efficient approach to the customs by the authorities.

Corruption is almost present at every node of the supply chain along this corridor. Demands for bribes, whether at informal checkpoints along the corridor or at customs points contribute to the high cost and long lead times experienced on the way from Cameroon to Chad. It is a priority issue to be tackled by the relevant and competent parties in both countries.

Addressing the challenges of the Douala-N'Djamena-Abéché corridor requires collaborative efforts involving governments, international organizations, humanitarian agencies, private sector stakeholders, and local communities.

Infrastructural and regulatory changes on the corridor will require lengthy engagement and substantial resources. However, a series of improvements on the corridor are possible in the short term to enhance the supply chain performance of the humanitarian activities in the Chad-Sudan border area. In particular, acknowledging the existing corridor limitations and timeframes, and considering these limitations and timeframes in an anticipatory planning exercise are within the reach and responsibility of humanitarian stakeholders working on the corridor.

Planning improvements, alignment and coordination with existing actors on the corridor, and coordinated interventions will allow the users of the corridor to enhance the resilience of supply chains and improve the overall effectiveness of humanitarian response efforts along the corridor. Every effort to optimize the functionality and resilience of this corridor will be essential for promoting regional integration, economic growth, and improved humanitarian assistance in the years to come.

Conclusion

Assessment of the Douala-N’Djamena-Abéché corridor

Assessment of the Douala-N’Djamena-Abéché corridor
### Appendix 1: Road Features of Major Sections Within the Corridor

<table>
<thead>
<tr>
<th>Sections</th>
<th>Distance (km)</th>
<th>Surface</th>
<th>Accessibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Douala Port - Yaoundé</td>
<td>267</td>
<td>Asphalt</td>
<td>• Narrow and congested with heavy truck traffic.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Busiest section along the corridor</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Frequent accidents due to road nature and maintenance</td>
</tr>
<tr>
<td>Kribi Port - Edea - Yaoundé</td>
<td>300</td>
<td>Asphalt</td>
<td>• 110 km between Kribi and Edea is not in good condition. Rail line available from Edea to Yaoundé</td>
</tr>
<tr>
<td>Yaoundé – Ayos</td>
<td>140</td>
<td>Asphalt</td>
<td>• Accessible to trucks and trailers</td>
</tr>
<tr>
<td>Ayos - Bertoua</td>
<td>190</td>
<td>Dirt</td>
<td>• Mud</td>
</tr>
<tr>
<td>Bertoua - Garoua-Boulai</td>
<td>246</td>
<td>Asphalt</td>
<td>• Paved</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Accessible to trucks and trailers</td>
</tr>
<tr>
<td>Garoua-Boulai - Ngaoundere</td>
<td>271</td>
<td>Dirt</td>
<td>• Mud</td>
</tr>
<tr>
<td>Ngaoundere - Garoua</td>
<td>275</td>
<td>Asphalt</td>
<td>• Deteriorating, but rehabilitation underway</td>
</tr>
<tr>
<td>Garoua - Maroua</td>
<td>209</td>
<td>Asphalt</td>
<td>• Rehabilitated and passable</td>
</tr>
<tr>
<td>Maroua – Kousséri - N’Djamena</td>
<td>354</td>
<td>Asphalt</td>
<td>• Maintenance work started in 2018, with some sections completed</td>
</tr>
<tr>
<td>Ngaoundere – Touboro - Koutere</td>
<td>305</td>
<td>Asphalt</td>
<td>• Fully operational and in good condition</td>
</tr>
<tr>
<td>Koutere - Moundou - N’Djamena</td>
<td>595</td>
<td>Asphalt</td>
<td>• Major rehabilitation works for some sections and pavement strengthening for other sections.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Installation and operation of axle load control stations.</td>
</tr>
<tr>
<td>N’Djamena - Abéché</td>
<td>748</td>
<td>Asphalt</td>
<td>• Road Mostly Inaccessible Between July - October</td>
</tr>
</tbody>
</table>

Source: LAGOS STATE UNIVERSITY (2023)
Appendix 3: Storage Facilities in Cameroon Ports and Railway Station

<table>
<thead>
<tr>
<th>Location</th>
<th>Distance (km)</th>
<th>Surface</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Douala Port</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bonded Warehouse</td>
<td>59,000 m²</td>
<td></td>
</tr>
<tr>
<td>Container storage yard</td>
<td>385,000 m²</td>
<td></td>
</tr>
<tr>
<td>Cold storage</td>
<td>8,000 m²</td>
<td></td>
</tr>
<tr>
<td>Reefer containers</td>
<td>120 reefer plugs</td>
<td></td>
</tr>
<tr>
<td>Storage space</td>
<td>4,000 m²</td>
<td></td>
</tr>
<tr>
<td>Refrigerated container station</td>
<td>192 units</td>
<td></td>
</tr>
<tr>
<td>Container Freight Station</td>
<td>10,000 units of 20ft</td>
<td></td>
</tr>
<tr>
<td><strong>Kribi Port</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bollore Kribi Logistics Hub</td>
<td>7,720 m² operating area, a 6,000 m² warehouse and 310 m² of office space 900 m² of Porch (for container processing during bad weather). The remaining space (9070 m²) will be used for unloading the waiting area and the construction of more warehouses.</td>
<td>a total area of 24,000 m²</td>
</tr>
<tr>
<td>Covered warehouses</td>
<td>12,500 m² (split into Six warehouses). One is dedicated to WFP cargo.</td>
<td></td>
</tr>
<tr>
<td>Open yard</td>
<td>30,000 m² with a container capacity of 300TEUs</td>
<td></td>
</tr>
<tr>
<td>Fuel storage facilities</td>
<td>5,540 m³</td>
<td></td>
</tr>
<tr>
<td><strong>Ngaoundere Dry Port</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open yard</td>
<td>6,000 m²</td>
<td></td>
</tr>
<tr>
<td><strong>Belabo Railway Station</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open yard</td>
<td>6,500 m²</td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors’ extraction from various documents

Appendix 4: CNSC Warehouse Facilities

<table>
<thead>
<tr>
<th>Location</th>
<th>Distance (km)</th>
<th>Surface</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trucker facility at Lendi, Kribi</strong></td>
<td>1000 m²</td>
<td>Commissioned in 2015 Two offices, Toilets A borehole and water tank, a 110-KVA power generator, four watch towers</td>
</tr>
<tr>
<td><strong>Bassa, Douala</strong></td>
<td>1000 m²</td>
<td>Commissioned in 2013 The parking lot for Ten trucks, a 100KVA power generator, borehole, water tank, security fence, office, gate house</td>
</tr>
<tr>
<td><strong>Tiko Wharf, Southwest region</strong></td>
<td>2000 m² (1000 m² for storage)</td>
<td>Commissioned in 2016 15 offices (9 m²) each Two conference rooms (15 m² each) A borehole 5m³ water tank. Space for two refrigerated containers A load-handling device (Hyster)</td>
</tr>
<tr>
<td><strong>Abang Minko’o, South region</strong></td>
<td>1555 m² (600 m² for storage)</td>
<td>Refurbished in 2012 Six equipped room A power generator</td>
</tr>
<tr>
<td><strong>Douala Port Authority zone, Port of Douala</strong></td>
<td>1000 m² (storage capacity of 8000 m² each)</td>
<td>Necessary equipment</td>
</tr>
<tr>
<td><strong>Douala Port Authority Area</strong></td>
<td>Cargo storage platforms 8000m³, 7500m³, 9500m³, 4500m³</td>
<td>Necessary facilities</td>
</tr>
</tbody>
</table>

Source: Cameroon National Shippers Council (CNSC) at: https://www.cnsc.cm/en/achievements/warehouses-3/douala-port-authority-zone

Appendix 5: Customs Documentation Required for Humanitarian Aids in Cameroon and Chad

<table>
<thead>
<tr>
<th>Customs Documentation</th>
<th>Cameroon</th>
<th>Chad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waybill/Bill of Lading</td>
<td>Required. Details the shipment’s journey and contents.</td>
<td>Required. Essential for tracking and detailing the shipment.</td>
</tr>
<tr>
<td>Certificate of Origin</td>
<td>It may be required for certain goods.</td>
<td>Required for standard imports, detailing product names, quantities, and values.</td>
</tr>
<tr>
<td>Commercial Invoice</td>
<td>Required. Details the value and description of goods.</td>
<td>Required. Details the contents of each package.</td>
</tr>
<tr>
<td>Packing List</td>
<td>Required. Lists all items in the shipment.</td>
<td>Required. Must be approved by the Ministry of Foreign Affairs (for the UN) or the Ministry of Economy and Planning (for NGOs).</td>
</tr>
<tr>
<td>Request for Exemption</td>
<td>Applicable for goods under specific regimes like Transit Regime (IM8) and Temporary Admission Regime (IMS).</td>
<td>It is not explicitly required as per documentation but is part of standard customs clearance.</td>
</tr>
<tr>
<td>Customs Clearance Number</td>
<td>Part of the customs declaration in Cameroon.</td>
<td>Required for relevant goods, ensuring compliance with health and safety standards.</td>
</tr>
<tr>
<td>Halal Certificate (if applicable)</td>
<td>Not typically required unless for specific goods.</td>
<td></td>
</tr>
<tr>
<td>Special Requirements for Pharmaceuticals</td>
<td>Specific import certification and compliance with regulations overseen by ANOR.</td>
<td>Special import certification is overseen by CEMAC’s public health body (OCEAC).</td>
</tr>
<tr>
<td>Proof of Exemption (Humanitarian Goods)</td>
<td>Documentation proving eligibility for exemptions under regimes like IM8 and IMS.</td>
<td>Proof of exemption for humanitarian goods as validated by the Director General of Customs.</td>
</tr>
<tr>
<td>Intention-to-Import Document (IDI)</td>
<td>Relevant for pre-shipment or destination inspection under certain conditions.</td>
<td>It was not explicitly required as per Chad’s customs documentation.</td>
</tr>
<tr>
<td>Insurance Documents</td>
<td>It may include additional attestations or certificates depending on the goods’ nature and origin.</td>
<td>Insurance documentation is generally required for shipment protection.</td>
</tr>
</tbody>
</table>

Special import certification is overseen by CEMAC’s public health body (OCEAC). It was not explicitly required as per Chad’s customs documentation. Insurance documentation is generally required for shipment protection.
Appendix 6: Overview of truck movements at the Cameroon-Chad border

Overview of truck movements according to different areas between May 2022 and April 2023
(A – Cameroonian side, B – border crossing, C – Chadian side)

Appendix 7: Different Actors and their Contribution to demurrage at Douala port

<table>
<thead>
<tr>
<th>Actors</th>
<th>Reason for long stay</th>
<th>Duration</th>
<th>Percentage</th>
<th>Cumulative Percentage</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customs</td>
<td>Delay in the manifest; the difference in point of view; blockage by customs</td>
<td>10 days</td>
<td>25%</td>
<td>25%</td>
<td>High contribution to demurrage</td>
</tr>
<tr>
<td>Brokers</td>
<td>Unprofessionalism; poor estimate</td>
<td>4 days</td>
<td>20%</td>
<td>45%</td>
<td>Low contribution to demurrage</td>
</tr>
<tr>
<td>Consignee</td>
<td>Insufficient finance</td>
<td>20 days</td>
<td>35%</td>
<td>80%</td>
<td>Very high contribution to demurrage</td>
</tr>
<tr>
<td>PAD</td>
<td>Lack of equipment</td>
<td>2 days</td>
<td>5%</td>
<td>85%</td>
<td>Low contribution</td>
</tr>
<tr>
<td>Shipper</td>
<td>Error in documentation; light failure, holidays</td>
<td>5 days</td>
<td>10%</td>
<td>95%</td>
<td>Average contribution</td>
</tr>
<tr>
<td>Government</td>
<td>Change of policy; light failure, holidays</td>
<td>2 days</td>
<td>5%</td>
<td>100%</td>
<td>Low contribution</td>
</tr>
</tbody>
</table>

SOURCE: ATUD, M. V., ET AL., (2023)

Appendix 8: Top Six Carriers that Service Douala Port

<table>
<thead>
<tr>
<th>S/N</th>
<th>Carrier</th>
<th>Departure Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MSC</td>
<td>1 – 2 times a week</td>
</tr>
<tr>
<td>2</td>
<td>Africa Express</td>
<td>1 – 2 times a week</td>
</tr>
<tr>
<td>3</td>
<td>Maersk</td>
<td>1 – 2 times a week</td>
</tr>
<tr>
<td>4</td>
<td>CMA CGM</td>
<td>Every 1 – 2 weeks</td>
</tr>
<tr>
<td>5</td>
<td>Grimaldi</td>
<td>Every 1 – 2 weeks</td>
</tr>
<tr>
<td>6</td>
<td>Seatrade</td>
<td>Every 2-4 weeks</td>
</tr>
</tbody>
</table>

SOURCE: HTTPS://WWW.FLUENTCARGO.COM/PORTS/LOCODE/CMDLA
Appendix 9: Handling Providers

<table>
<thead>
<tr>
<th>Company</th>
<th>Shipping</th>
<th>Stevedoring</th>
<th>Forwarding</th>
</tr>
</thead>
<tbody>
<tr>
<td>2M</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JT CAMEROUN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AAIM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AFRIMAR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AMT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>APM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>APMT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASSA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BOLLORE T, LOGISTICS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAMAS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAMTRANSIT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEMACC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CITTIMA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLGG</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CMA CGM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COPEN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CREST</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIMARPHEL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EAGLE COMEROUN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELOIS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEODIS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LMC</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SOURCE: HTTP://WWW.ADMCAMEROUN.COM/PORT-OPERATORS.PHP

Appendix 10: Distribution and Evolution of Port Traffic

### Distribution and Evolution of Overall Traffic Per Type of Packaging

<table>
<thead>
<tr>
<th>Packaging</th>
<th>Jan-March 2022</th>
<th>Jan-March 2023</th>
<th>Evolution (B)/(A)-1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quantity (t)</td>
<td>Fob Value (M.CFAF)</td>
<td>Share Value</td>
</tr>
<tr>
<td>Douala</td>
<td>2,736,598</td>
<td>995,799</td>
<td>88%</td>
</tr>
<tr>
<td>Container</td>
<td>648,675</td>
<td>574,143</td>
<td>58%</td>
</tr>
<tr>
<td>Container</td>
<td>639,811</td>
<td>167,058</td>
<td>17%</td>
</tr>
<tr>
<td>Bulk</td>
<td>1,448,111</td>
<td>254,597</td>
<td>26%</td>
</tr>
<tr>
<td>Kribi</td>
<td>241,641</td>
<td>137,385</td>
<td>12%</td>
</tr>
<tr>
<td>Container</td>
<td>157,515</td>
<td>132,634</td>
<td>97%</td>
</tr>
<tr>
<td>Conventional</td>
<td>36,486</td>
<td>3,738</td>
<td>3%</td>
</tr>
<tr>
<td>Bulk</td>
<td>47,640</td>
<td>1,014</td>
<td>1%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>2,978,239</td>
<td>1,133,184</td>
<td>100%</td>
</tr>
</tbody>
</table>

SOURCE: CNSC

### Distribution and Evolution of Overall Traffic Per Type of Packaging

<table>
<thead>
<tr>
<th>Packaging</th>
<th>April-June 2022</th>
<th>April-June 2023</th>
<th>Evolution (B)/(A)-1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quantity (t)</td>
<td>Fob Value (M.CFAF)</td>
<td>Share Value</td>
</tr>
<tr>
<td>Douala</td>
<td>2,332,598</td>
<td>1,016,990</td>
<td>86%</td>
</tr>
<tr>
<td>Container</td>
<td>631,050</td>
<td>562,554</td>
<td>55%</td>
</tr>
<tr>
<td>Container</td>
<td>464,230</td>
<td>194,921</td>
<td>19%</td>
</tr>
<tr>
<td>Bulk</td>
<td>1,237,273</td>
<td>259,516</td>
<td>26%</td>
</tr>
<tr>
<td>Kribi</td>
<td>356,827</td>
<td>162,836</td>
<td>14%</td>
</tr>
<tr>
<td>Container</td>
<td>193,122</td>
<td>145,246</td>
<td>89%</td>
</tr>
<tr>
<td>Conventional</td>
<td>52,394</td>
<td>5,348</td>
<td>3%</td>
</tr>
<tr>
<td>Bulk</td>
<td>111,312</td>
<td>12,241</td>
<td>8%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>2,658,381</td>
<td>1,173,826</td>
<td>100%</td>
</tr>
</tbody>
</table>

SOURCE: CNSC
SOURCE: CAMEROON NATIONAL SHIPPERS COUNCIL
Assessment of the Douala-N’Djamena-Abéché corridor


Logistics Cluster (2019b). Chad - 1.3 Chad Customs Information. Digital Logistics Capacity Assessments. Retrieved from https://dlca.logcluster.org/chad-1.3-chad-humanitarian-background


Logistics Cluster (2022). 1.3 Cameroon Customs Information. Retrieved from Logistics Cluster: https://dlca.logcluster.org/1.3-cameroon-customs-information


