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► To cite this version:

François H Guiziou. The Corridors of Landlocked Ethiopia. Maritime Ports, Supply Chains and Logistics Corridors, 2023, 9781003365013. hal-04314406

HAL Id: hal-04314406

<https://hal.science/hal-04314406>

Submitted on 29 Nov 2023

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10. The Corridors of Landlocked Ethiopia

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Edited by Cadenza Academic Translations

Abstract

Following the loss of access to its Eritrean ports (Assab and Massawa), Ethiopia has been a landlocked state. The large majority of its economic activities are concentrated around the capital area, which benefits from strong road and rail links to the port of Djibouti and, to a lesser extent, to the port of Berbera (Somaliland). In an effort to reduce its dependence on intermediary states, Ethiopia is striving to develop alternative routes with neighbouring countries that have coastal access, such as Sudan and Kenya. Thanks to massive public investment and support from external actors—particularly the People's Republic of China—Ethiopia's access-diversification strategy is making headway. However, progress is hampered considerably by its internal and regional security situation.

Keywords

Ethiopia, Djibouti, Horn of Africa, landlocked states, transport systems

Although there are articles that discuss landlocked states in literature, and which refer more or less directly to African states and African regions (including Hoyle & Charlier, 1995; Debie & Steck, 2001; Debie, 2010; Oliete & Magrinyà, 2022; Ducruet & Guerrero, 2022), none of these works focus specifically on the transportation system in Ethiopia and the Horn of Africa region¹. With a population of 115 million inhabitants (World Bank, 2020), Ethiopia has featured on the list of landlocked countries since its separation from Eritrea in 1993. The situation worsened in the wake of the conflict between the two countries from 1998–2000, resulting in the loss of the two major Eritrean ports of Massawa and Assab (along with the latter's refinery), previously serving as the major port for the corridor leading to Ethiopia's capital region, Addis Ababa. Following the closure of the Assab corridor, traffic was diverted to Djibouti, which seized the opportunity to invest in its harbour facilities and position itself as the principal access point to Ethiopia, particularly the capital area, which is the main urban-industrial zone in demographic terms (4 million inhabitants, and over 1,000 companies, according to the United Nations Development Programme [UNDP] [2018]). Since the late 1990s, the Ethiopian authorities have sought to reduce their reliance on Djibouti, while also working to preserve and modernize this critical transportation route. As a result, alternative regional corridor projects have emerged. However, doubts have been raised over the capacity, both financial and political, of Ethiopian authorities to succeed in this diversification strategy.

This case study aims to illustrate the challenges faced by landlocked countries when developing multiple entry routes to avoid territorial isolation, particularly in the face of

recurring and major security issues in neighbouring states. Although this study does not provide an exhaustive list of all the corridors and projects involved, it has four main objectives: (1) to provide a characterization of the Ethiopian hinterland served by its principal corridor, the port of Djibouti; (2) to describe the situations in the neighbouring seaports of Berbera and Assab, which are also major parts of Ethiopia's transportation network; (3) to examine alternative projects aimed at opening up the region; (4) to discuss the sustainability of this strategy, with a particular focus on security concerns².

Ethiopia's main hinterland: The capital region

The capital region and its neighbouring territories are the lifeblood of present-day Ethiopia. Addis Ababa, a relatively recent city (established in 1886), owes much of its rapid development to its historic connection to the port of Djibouti and the French railway (a service that ran between 1901 and 1917). As a result, three states—Eritrea, Djibouti, and Somaliland (a proto-state born out of the Somali civil war)—share 450 km of coastline. In general, three ports provide effective access to landlocked Ethiopia and its capital: Assab (900 km from Addis Ababa), Djibouti (at an 850 km-distance), and Berbera (at a 950 km-distance). The location of these ports is highly advantageous from a geomorphological standpoint: (1) because they provide access to the hinterland, which is limited at certain grades because of the natural barriers of the Great Rift and the Awash Valley, as well as to the Ethiopian highlands in general; (2) with regard to the tectonic foreland, because these ports are located in close proximity to the international Bab el-Mandeb Strait, which is an extension of the rift and a site of intense global traffic (in which these ports only participate to a marginal extent) and, at the regional scale, where these ports are very well integrated.

The vast majority of the traffic in this main corridor is by road³. The axes of these major ports towards the capital region converge at Awash at the A1 junction, the A10 junction, and the reinforced track passing through Dire Dawa (central-eastern corridor), as shown in Figure 10.1. An alternative route is the B11 road (Mile) then the A2 road (Kombolcha), which offer lighter traffic volumes at the cost of a steeper road. The Ethio–Djibouti railway takes a more southerly route through Dire Dawa, joining the A10 road coming from the Somali border and the Berbera road (eastern corridor). Finally, an important road connection with the major Djibouti/Assab corridor in the Amhara region is located in the east (via the B21, B31, and B22 roads). These routes combine to form a corridor, with Djibouti serving as the undisputed central hub, Assab taking on a marginalized status, and Berbera positioned as the newcomer. However, they share a comparable hinterland: the capital area (for the three routes); the Afar region and the Amhara region (for Assab and Djibouti); and the northern Somali region (for Djibouti and Berbera). Furthermore, these routes ensure, by means of irrigation systems from the capital region, the supply of a significant part of the country.

The centre-periphery relation is heavily marked by Addis Ababa's political and demographic weight, as well as its attractive power⁴. In addition to the central-eastern corridor (also known as the "Black Ribbon"⁵) and the eastern corridor mentioned above, the other road corridors serving the majority of the population from Addis Ababa are distributed as follows: the northern corridor towards Mekele and Zalambessa-Kokobay (Eritrean border); the northwestern corridor by Gondar towards Aksum; the western corridor towards Nekemte, Asosa, and Kurmuk (Sudanese border); finally, an axis extending southward to join the Kenyan border with Moyale, following the Rift Valley (A7-A8 highways). All these roads and railways are subject to both arid and tropical climates. Because of the risks associated

with these climatic characteristics, such as floods, landslides, and fires, costly maintenance is required for these corridors to operate at full capacity.

< Figure 10.1 here >

Figure 10.1: the Ethio–Djibouti corridor, Berbera, and Assab. Map created by the author.

The Djibouti corridor

The port city of Djibouti, a product of French colonization established in 1883, is currently the principal port serving Ethiopia. Despite a lack of any statistical backing, it is often claimed that more than 90 % of goods officially entering the Ethiopian territory transits through its harbour facilities (United Nations Conference, 2013). The port comprises several installations, including the old port, (the Port authority of Djibouti, which is now dedicated to bulk cargo and warships calling); the Doraleh container terminal managed by the Société de gestion du terminal à conteneurs de Doraleh (SGTD) (Doraleh Container Terminal Management Company), established in 2009; eight gantry cranes, initially developed and operated by Dubai Port World (DPW) until their expulsion in 2018, (cf. *infra*); the oil port of Doraleh (Horizon Terminal Djibouti, established in 2005); and the Doraleh Multipurpose Port (DMP), a general port built by a Chinese company in 2017 comprising four gantry cranes. The current capacity of the port of Djibouti is around 1.2 million TEU (20-ft equivalent units). Two other, smaller, export-focused facilities, the Tadjourah terminal (dedicated mainly to Ethiopian potash, established in 2017) and the port of Goubet (salts, since 2017), complete the port landscape. Since 2003, all these facilities have been under the supervision of the Djibouti Ports and Free Zones Authority (DPFZA), a government agency that manages and coordinates the development of new terminals and infrastructure. The port infrastructure of Djibouti meets international standards, and the Djiboutian authorities are currently discussing new developments such as the ambitious industrial park project of Damerjog, which would include the installation of a refinery (while putting original plans for a livestock terminal, which is currently functioning as a quarantine yard, on hold). The initial works, started in 2020, are still in the early stages, and currently limited to the construction of a jetty and a terreplein.

Although a very large part of traffic between Djibouti and its hinterland is by road (the RN-1 National Highway and then the A1 road), it is hoped that the construction of an electric railway will increase the amount of traffic bound for Adama in Addis Ababa, as well as industrial facilities in Dire Dawa and Awash. Just a stone's throw away from the route of the first road laid out by French engineers at the beginning of the twentieth century, this Chinese-built railway is the primary argument put forward by the Djiboutian authorities' in demonstrating their competitive edge over rival ports. Container capacity could offer a maximum capacity of 100,000 TEU⁶ per year—assuming that three freight trains were to operate at full capacity every day—which would amount to approximately 10 % of SGTD and DMP's transit per year. The route provides several benefits, including shorter distance, enhanced safety, as well as smoother traffic flow, achieved by minimizing load breaks caused by the prevalence of roads and the time-consuming process of emptying and loading containers onto trailers (United Nations Conference, 2013). Among the eight Ethiopian dry ports, those of Modjo and Indode have rail-mounted stacker cranes, and so are well-equipped for container management and enable efficient exports to the manufacturing zones around

Addis Ababa (Akaki, Kality, Sebeta, Feri-Lebu, etc.). It is worth noting that this dry-port strategy is also utilized for major roads, albeit in a more rudimentary way, that is, without dedicated multimodal infrastructure. This illustrates the synergy between the A1 and the railways, which have played a significant role in creating a thriving industrial corridor between Sebeta and Adama, comparable in scale to those found in the Horn of Africa. Furthermore, the importance of Awash, with its gasoline reserves, and Dire Dawa, known for its cement production, both situated along the railway, cannot be overstated.

The frequent meetings held between the Ethiopian and Djiboutian authorities demonstrate their intention to proceed with caution in their fledgling partnership, despite Ethiopia's clear desire to diversify access to the sea. For Djibouti, the stakes are very high, since the state budget is heavily dependent on the port revenue generated by Ethiopian trade (20–25 %, World Bank, 2013) and the security provided by the foreign detachments stationed on its territory (France, USA, China, etc.). Despite being a small state, Djibouti's strategic location has attracted the accumulation of forces of allied and competing states in the international arena, making it a curious case. The reasons behind the presence of these foreign actors are manifold: antipiracy, counterterrorism, strategic positioning in the vicinity of the Bab el-Mandeb strait, and so on. Except for China—which is a crucial partner for Ethiopia—and France—which has a long-standing relationship with Djibouti—these foreign actors have no direct and significant interest in the politics of the Horn of Africa.

The emergence of Berbera and the Assab hypothesis

In recent years, Djibouti has seen the emergence of a potential competitor: the port of Berbera (Figure 10.2), Somaliland's unique port. The port of Berbera has a long history, with ships first throwing anchor there back in ancient times. Its first major dock was developed by the Soviets in 1967, to be expanded by the Americans in the late 1980s, to then thrive in the modern commercial landscape thanks to the help of DPW. However, the Emirati company moved its operations to Somaliland in 2016 because of the political and financial difficulties gripping Djibouti in 2014. These difficulties led to the company's expulsion from Djibouti in 2018, despite the commercial success of the Doraleh terminal, of which DPW was manager and remains joint owner. In favour of DPW, the London Court of International Arbitration ordered the Djiboutian state to pay US \$500 million⁷. The challenges faced in Djibouti prompted DPW to seek solutions elsewhere. Back in 2016, the company obtained a 30-year management contract for the Berbera port facilities from the Somaliland government. DPW then embarked on a \$442 million project to modernize the port, significantly improving harbour management and almost doubling the wharf line (1 km in total). DPW also developed a container terminal spanning 33 ha. This terminal is equipped with three gantry cranes, with an estimated capacity of more than 350,000 TEU containers at startup in 2021, up from the previous capacity of 100,000. Long confined to being a bulk and cattle port, Berbera is now the only port in Somalia to have a dedicated container terminal built to international standards.

The Djiboutian conflict offered Berbera the opportunity to welcome one of the major players in international maritime trade. Indeed, DPW is present in 40 countries worldwide and handles around 10 % of global container traffic. Prior to this, Berbera was already an important regional port, offering deep-water access, an ISPS certification obtained in 2006 (International Ship and Port Security Code), and facilities for the Global Food Programme, including two silos and a small oil terminal. The addition of a competent container terminal

modelled on the Doraleh facility, boasting a free zone and a focus on regional industry development, harks back to the rise of Djibouti. Berbera now stands as a key competitor that could disrupt the Djiboutian hegemony. The recent agreements with Ethiopia in 2000 and 2016, the official docking of the Ethiopian Shipping and Logistics Services Enterprise ships since 2021, the new free zone law enacted in Somaliland in 2021⁸, as well as the DPW's tariff policy (Table 10.1), are all factors contributing to the port's immense success, with support from Ethiopia also playing a crucial role in its rise to prominence. Ethiopia not only sees Berbera as a complementary option to the Djibouti axis, but also as a necessary step forward for the industrial development of its eastern regions.

	Djibouti		Berbera	
	up to 1 TEU	over 1 TEU	up to 1 TEU	over 1 TEU
Discharging/charging full	133	166	130	195
Discharging/charging empty	94	121	80	120
Transshipment full	141	201	141	175
Transshipment empty	112	137	124	159

Table 10.1: Tariffs (one movement) for a normal container (USD) at Djibouti and Berbera container terminals (DPW Berbera Tariff Book 2021; Société de Gestion du Terminal de Doraleh (SGTD) (Doraleh Container Terminal Management Company) Tariff Book 2021).

What the Ethiopian government and logistics actors see as complementarity is in fact a power struggle between Djibouti and Berbera to capture the other's market share. While Djibouti is striving to maintain its lead, Berbera has the advantage of opening up a previously neglected hinterland. This hinterland includes Somaliland, with its population of around 5–6 million, and its capital Hargeysa, which has over one million inhabitants. A bypass currently under construction will help to streamline the dense traffic linked to the corridor. The main hinterland of this corridor is the Ethiopian ethno-federal region populated by Somalis (6.4 million inhabitants⁹), mainly up to the town of Dire Dawa and encompassing the entire Ogaden. The main choke point of traffic flows is the “border city” of Jigjiga, the capital of the ethno-federal region. This city is a busy transit zone located 70 km from the Tog Wajale border post. This corridor handles the majority of export livestock destined for the countries of the Arabian Peninsula, the majority of food aid destined for Ethiopia (65 % according to widely cited figures), as well as an increasing share of bulk and container cargo bound for Dire Dawa and the capital region via the A10. The secondary corridor's road network has been continuously strengthened since the end of the 2000s, which bodes well for its change of status and the possible capture of traffic in the Djibouti area. For Somaliland, there is also a major political question at stake, since asserting itself as a state and partner of Ethiopia allows it to partially guarantee its sovereignty in the face of a still non-functional federal Somalia, as well as to further assert its status on the international scene (Stepputat & Hagmann, 2019; Tahir, 2021).

< Figure 10.2 here >

Figure 10.2: Dubai Port World Berbera Masterplan. Image sourced from Wikicommons.

Finally, the position of the port of Assab remains open to speculation. Boasting high-quality infrastructure developed by the Soviets, and located in the immediate vicinity of the Bab el-Mandeb Strait, the port of Assab was recently used by the United Arab Emirates for military operations in Yemen (2015-2021). This port offered the immense advantage of housing Ethiopia's one and only refinery whose operations were shut down in 1997. Following the re-establishment of relations between Ethiopia and Eritrea in 2018 ("Ethiopia and Eritrea," 2018), plans were made for Arab pipeline projects in Assab, but none have seen completion¹⁰. Though the port remains limited in capacity (seven berths, no gantry cranes) it does offer scope for improvement and a quality anchorage. In the short or medium term, however, it does not seem likely that Assab will reclaim its position as a major port facility.

Other corridors

The opening of corridors to Ethiopia via Port Sudan and Suakin (Sudan); Massawa (Eritrea); and Mombasa and Lamu (Kenya) also open up other, albeit more marginal, flows (Figure 10.3), which represent alternatives to the eastern axis in terms of serving the peripheral regions of Ethiopia:

- The Sudanese corridor starts from a road that leads to Metemma (the principal border post on the high plateaus); the Amhara area and to the towns of Gondar (400 000 inhab.); and Bahir Dar (300 000 inhab.). Despite operations being hindered by Sudanese political difficulties, the ports remain functional. They are however distant from the Ethiopian border (950 km), which significantly limits the volume of flows.
- The Massawa corridor, which primarily serves the Eritrean capital, Asmara, and to a lesser extent, the northern region of Ethiopia via Kokobay the border post (320 km), has the potential to facilitate transport access in Ethiopia. In this vein, the construction of a motorway on the Mekele–Kokobay stretch in Ethiopia has been completed. However, due to the ongoing conflict in the region, this corridor currently offers little value in terms of supporting the Ethiopian national diversification strategy.
- The Kenyan corridors, comprising the Mombasa–Isiolo–Moyale and Lamu–Isiolo–Moyale axes (spanning 1,260 km and 1,200 km respectively), serve as gateways towards the south. Though the former offers limited flow, the latter (currently still under construction), is a large-scale Chinese project: the Lamu Port and Lamu–Southern Sudan–Ethiopia Transport (LAPSSET) Corridor. Its first quays became operational, after a decade-long delay, at the beginning of 2022. The purpose of these quays is to facilitate the movement of materials needed to complete the corridor, including roads, railways, and power grids that will connect the southern part of Ethiopia. The first phase of the project, which has already been completed, had a preliminary budget of US \$400 million dollars and will pave the way for subsequent new phases, culminating a total cost of US \$25 billion dollars upon completion. By 2065, the colossal project is expected to interconnect on a regional and continental scale, extending all the way to the north-eastern region of Kenya, which has a low population density of Somali Kenyans. This project will therefore serve as a crucial international corridor bound for the South of Ethiopia and South Sudan, which represents the most significant market in the region¹¹.

< Figure 10.3 here >

Figure 10.3: current and potential corridors in the Addis Abeba Region. Map created by the author.

In summary, the ports of Somalia—excluding Berbera—such as the ports of Boosaaso, Muqdisho, and Kismaayo, cannot claim to be anything more than weak supply lines for the Somali territory. This applies to the informally organized Somali areas that extend from Djibouti to Kenya via Ethiopia. Despite the diverse nature and spatial organization of these flows, they are all limited in terms of tonnage and financial volumes.

Conclusion

Industry development in Ethiopia, whose added value exceeded US \$21 billion in 2020—a five-fold increase from a decade ago (World Bank, 2021)—has resulted in a considerable reduction in the cost of importing and exporting containers. The corridors in Ethiopia could therefore potentially provide a leverage effect. However, two key issues remain:

- First, there is the heavy dependence on external funding and construction, and regional-level competition to attract traffic, as illustrated by the ongoing rivalry with Berbera Port in Djibouti. The corridors clearly operate within a strained diplomatic environment, marked by a complex interplay of economic and diplomatic factors that often extends beyond the borders of Ethiopia. It should be remembered that Djibouti and Berbera enjoy the advantage of guaranteed security by international external actors: China, the USA, and France for Djibouti; UAE for the Berbera region (Larsen & Stepputat, 2019). Though successful, this added layer of maritime security may come at a cost, as it entails a strong reliance on local political actors. In the event of changes to international or regional strategic (and economic) objectives involved on a local level—such as the intervention of UAE in Yemen; Eritrea’s involvement in the Ethiopian civil conflict; or fierce competition between the United States and China in the Indo-Pacific sphere— there is every chance that existing strategies will change rapidly.
- Second, there is the issue of regional security. Excluding Ethio-Eritrean relations, which shook the transport landscape at the turn of the century, the Tigray rebellion placed enormous pressure on the Djibouti corridor when the front line came near Mile on the RN1-A1. The capture of this city would have resulted in the disruption of the supply to the capital region, and its probable collapse. Furthermore, the Somali and the Oromo regions are still plagued by conflictual trends that lead to a considerable slowdown in transportation and project development. Similarly, the buffer zone established by Kenyan forces during Operation Linda Nchi (2011–2012) and its subsequent developments, particularly in support of the frontier Somali area of Jubbaland, aimed to prevent the spread of Somali Islamist insurrection promoted by the militant organization Al-Shabaab in the area where the Lamu–Moyale corridor will be constructed.

Thus, in order to bridge the gap between marginal and central regions and mitigate Ethiopia’s extreme centre-periphery divide, significant public investment is required, and even then, at least a minimal level of security must be in place for ventures to prove profitable. However, it

is difficult to envision the feasibility of this strategy for the heavily indebted Ethiopian state, which lacks the resources to simultaneously handle internal, high-intensity armed conflicts and pursue major infrastructure plans. This represents a major obstacle to Ethiopia's development. All things considered, the case study of Ethiopia presented in this chapter could provide an excellent illustration of the concept of "inversion territoriale" ("territorial inversion"), a term coined by Debie and Steck in 2001. The authors used this term in the context of West Africa to describe the development of transport routes by inland countries as a means of reversing their landlocked status. As with their description, we can see that strong inter-port competition is driven by the desire of the Ethiopian giant, with its huge population and economic potential, to expand its market reach and free itself from its dependence on the port of Djibouti by diversifying its access routes. Though this shift is still in its early stages because of the limits mentioned above, it underscores the need to re-evaluate Ethiopia's current status as a landlocked country.

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¹ Only Hoyle & Charlier's article (1995) deals specifically with East Africa (Kenya and Tanzania), and it only makes passing references to Ethiopia.

² The research method was based on: (1) the study of satellite imagery; (2) internet sources related to the topic (mainly official reports and specialized websites); (3) a network of local informants; (4) two interviews with academics from the region (non-specialists in the field of transportation). A literature review on corridors was conducted prior to the study. Due to the security situation in Ethiopia, it was not possible to conduct fieldwork.

³ Ethiopia's climate resilient transport sector strategy (2020). Retrieved from https://www.mofed.gov.et/media/filer_public/15/31/153174c3-b472-4339-b3bb-fb2c48cad629/transport_cr.pdf

⁴ It should be noted that, in addition to Ethiopia's current landlocked status, there are two other landlocked situations at the infra-national level: one from the highlands to the lowlands encompassing the Afar, Somali, and Oromo regions, and the other from the northern highlands (Tigray region) to the southern highlands (Amhara region). These complexities create significant challenges for Ethiopian policymakers in terms of establishing an ethno-regional balance and addressing tensions related to development and infrastructure choices.

⁵ Interview with an Ethiopian expert, 1st July 2022.

⁶ Ethiopian Railway Corporation (2021); personal findings.

⁷ <https://www.reuters.com/world/middle-east/dp-world-says-wins-ruling-against-djiboutis-port-company-2021-07-12/>

⁸ <https://www.somtribune.com/2021/01/08/somaliland-passes-free-trade-zone-law/>

⁹ *Population Projection Wereda as of July 2021*, Ethiopian statistics service (2021).

¹⁰ <https://www.thecaireview.com/tahrir-forum/saudi-arabia-and-the-uae-look-to-africa/> ; <https://www.bloomberg.com/news/articles/2018-10-21/dp-world-sees-key-role-for-once-isolated-state-in-port-strategy>

¹¹ Some analysts have dubbed this project a “white elephant” due to its slow development and security issues (interview with a researcher, 8 September 2022).